



EU AGRICULTURE, FISHERIES AND ENVIRONMENT SUB-COMMITTEE

Inquiry into EU Freshwater Policy

Oral and written evidence

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Association of Electricity Producers (AEP)—Written evidence

About AEP

1. The Association of Electricity Producers (AEP) represents large, medium and small companies accounting for more than 95 per cent of the UK generating capacity, together with a number of businesses that provide equipment and services to the generating industry. Between them, the members embrace all of the generating technologies used commercially in the UK, from coal, gas and nuclear power, to a wide range of renewable energies. Members operate in a competitive electricity market and they have a keen interest in its success – not only in delivering power at the best possible price, but also in meeting environmental requirements.

Strategic objectives of EU freshwater policy

The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?

2. The electricity supply industry is a major user of water resources (see final section for further detail) as a result of the use of water in cooling circuits in thermal power stations (coal, gas, nuclear, oil and biomass) and also for hydropower generation. The use of water for cooling systems in power generation enables the optimisation of systems to maximise energy efficiency and hence minimise gaseous emissions, including greenhouse gases, per unit of electricity generated. It maximises useful energy output from a given fuel use whilst minimising production of ‘waste’ and the use of raw materials. Other forms of cooling are available (e.g. air cooled condensers); however, these cool process water less efficiently, which has a direct impact on the overall electricity generating cycle efficiency. Indeed, the use of water for cooling has, for the past few decades, been determined by national regulators as the Best Available Technique for minimising the impact of power generation activities on the environment when taken as a whole.
3. The industry needs to balance environmental issues, such as those related to water use, with impacts on other environmental media along with security of electricity supply and economics. It is therefore essential that water policy should be addressed in a ‘sustainability’ framework that takes into account social and economic aspects as well as environmental ones. The Water Framework Directive does allow disproportionate cost to be taken into account when water body improvement measures are proposed and it is vital that the entire sustainability agenda, including cost and social benefit considerations, remains at the heart of future water policies.
4. The timeframes that are of relevance to the electricity supply industry are also an important consideration. Power generating plant is typically planned to operate for 25-40 years for fossil-fuelled plant and often even longer for hydropower and nuclear power. Power generation sites are often used for even longer periods than individual plant, as water and fuel supplies and connections to the electricity transmission network often dictate that power plant is most economically developed on sites where previous

plant has closed. The industry does therefore need to plan for investments over timeframes that are relevant to climate change.

5. Pressures on electricity supply arising from plant closures (due to age of the current power plant portfolio and environmental/regulatory constraints) require rapid reinvestment in new plant in the UK over the next few years. However, in a commercial and competitive market, it should be recognised that uncertainties over possible changes to water policy and the associated regulatory framework are seen as a potentially greater risk for investments than the anticipated impacts on water resource arising from climate change. It is therefore essential that water policy and regulation should be established in such a way as to give sufficient certainty for investment decisions that need to be made for both construction of new plant and for significant investment in the improvement and life extension of existing plant.

How adaptable to emerging new challenges is the current policy framework likely to be?

6. In a future world where access to water might change as a result of climate change, it is right that the use of this natural resource is re-evaluated in a structured way. However, looking at future impacts on this one environmental medium without consideration of the other impacts on the wider environment (e.g. CO₂ emissions, air quality, land/waste impacts, biodiversity, etc) is likely to result in sub-optimal conclusions. Policy integration across EU Directorates and government departments in Member States therefore needs to be a key theme in any further policy development.
7. It is recognised that there are concerns that the current water abstraction licensing regime in England & Wales is inflexible and does not readily permit reallocation of water resource in response to climate change pressures. However, it is important that such water resource allocation is looked at in relation to the wider long term benefits that water use may provide society, such as secure and relatively low cost power supply. Adaptability requirements constitute an uncertainty, and this has an impact on industry investment decisions. It is therefore important that policies are well defined, are predictable in their outcomes for periods of sufficiently long length relative to the infrastructure investment they relate to, and also that they are consistent with other policies, such as those aiming to reduce greenhouse gas emissions, and other environmental and energy policies.

Adding value

How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

8. Energy companies operate in an internationally competitive market place. The EU may add value by ensuring that Member States take an integrated approach to policy-making and are consistent in their application of freshwater policies e.g. in the use of water quality standards. Also the approach to taking account of background conditions when considering how best to address future climate change impacts should be consistent and well understood (e.g. ecology may change in response to future climate change impacts in isolation from other anthropogenic impacts). A transparent, stable, consistent, long term regulatory regime is essential for the levels of investment required for the electricity sector in the near future.

9. Member States need to address local issues relating to individual water bodies taking into account local factors and also to ensure that available resources are allocated in the way that delivers greatest benefit to society as a whole. A key element of this would be the assessment of 'disproportionate costs' at Member State level to encourage cost-effective investment in order to meet international water quality standards.

Future policy

In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

10. Clarification is needed in relation to how baseline conditions for the achievement of 'good status' of water bodies may be allowed to change in relation to climate change impacts. For the electricity supply industry thermal standards are of direct relevance. Will these be allowed to flex in relation to variation in ambient temperatures arising from climate change, or be set at an inflexible limit value that presents an ever-tightening constraint on operation? Similarly, how will regulations based on river flows, where future flow patterns may change markedly in relation to climate change, be allowed to adapt to the new prevailing conditions? Industry requires consistent and predictable regulation in relation to such issues to facilitate investment decisions and to ensure that assets do not become stranded by changing regulatory regime. EU policies should aim to deliver such consistency across EU Member States.

What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

11. Awareness of tackling water scarcity should be addressed at Member State level. Water is vital for thermal power stations. The sector has a history of ensuring that water is used appropriately and power stations seek to use water responsibly, efficiently and optimally; this is not the same as seeking to minimise water use.

Power Sector Water Resource Considerations

12. Cooling water systems are integral to power plant design and have implications for energy efficiency (hence cost of operation, fuel use, emissions to air and water and also wastes per unit of electricity generated).
13. Cooling systems may broadly be categorised as direct cooled (once-through), indirect (cooling water recirculated through cooling towers) or air cooled. Energy efficiency is highest for direct cooled plant and lowest for air cooled plant. Gross water use is highest for direct cooled plant but least for air cooled. However net water use is highest for indirect cooled plant as water is lost by evaporation to provide the cooling effect, whereas water in direct cooled systems is returned to the water body.
14. Freshwater bodies in the UK are generally unsuitable for direct cooling systems for large scale power plant as flows are insufficient, but direct cooling may be feasible at coastal and estuarine locations, depending on local environmental constraints.
15. The choice of cooling system has implications for many aspects of detailed power plant design (e.g. design of steam turbines). This means that retrofitting a different cooling system is, in most cases, prohibitively expensive or is technically infeasible. Thus, once built, the ability to change the plant configuration in relation to altered regulatory

policies on water abstraction rights is extremely limited, and could result in stranded assets or power plant with severely restricted operational capacity.

16. Developing new power generation projects around the coast, as an adaptation strategy, may be an option in some cases. However, this may result in losing value from investments made at freshwater sites, not only in terms of the power plant itself, but also in grid connections, gas supply pipelines, transformers and other supporting infrastructure. This approach could be considered at a 'policy' level but not at an individual plant level (i.e. closing an inland site and 'moving' it to the coast is not a feasible or deliverable measure).
17. New supporting infrastructure would need to be developed at new coastal (or other) locations (with associated costs and consenting issues).
18. Coastal and estuarine locations are often designated for their conservation importance (e.g. under the Habitats Directive) and there are increasing constraints on new development as a result of the Water Framework Directive, Marine Strategy Directive, marine spatial planning and the general strengthening of marine conservation networks. This presents formidable planning, consenting and operational barriers for new developments at coastal and estuarine locations.
19. Air cooling is more expensive to install and has lower efficiencies than wet systems. Output from air cooled plants will be substantially reduced in summer air temperatures compared to the output reductions that would occur for water cooled plant. In a commercial competitive market this makes investment in such plant difficult to justify on the basis of potential water resource restrictions that may develop in the long-term future. Such plant will be at a disadvantage in competition with peer group plant that are water cooled. At some locations air cooling may not be technically feasible or acceptable (because of space constraints and sensitivity of nearby receptors to noise).
20. The energy industry is currently subject to a large range of pressures arising from various policy initiatives from EU and UK government. These include policies on carbon intensity of generation, increasingly stringent emission limits to air, energy efficiency, biodiversity, security of supply, fuel poverty, etc. Some of these will run counter to reducing the water dependency of the industry. One example is that carbon capture and storage will increase the cooling demand of power plant to which it is fitted and hence may result in additional water requirements for power plant rather than allowing any reduction in water intensity. A holistic view of the various policies is required.
21. Restrictions on water resource availability, through actual flow constraints or through regulatory mechanisms, will tend to be driven by wide scale factors such as drought conditions. These will affect all plant operating on a river catchment simultaneously, and it is likely that national scale drought conditions may arise. This gives the potential for common mode failure of the power supply network, if several power stations become operationally constrained by water availability at the same time. It is essential that policies take such possibilities into account.

22. Ultimately, to fund new build projects and realise major investment in existing power plant, investors need sufficient confidence that water will be available in sufficient quantities, with sufficient reliability and at a known and acceptable price over the project life. Although power sector companies may take a view on future meteorological conditions and catchment hydrology, based on scientific evidence, it is currently difficult to predict with any confidence how water resources will be allocated in future under developing policy and regulatory regimes. It is therefore important that these are clarified in a timely fashion.

5 September 2011

Dr David Benson, Professor Andrew Jordan¹, Laurence Smith², Dr Hadrian Cook³, Dr Dylan Bright⁴ and Alex Inman⁵—Written evidence

in response to the Call for Evidence for the Inquiry into EU Freshwater Policy, dated 19 July 2011, we would like to submit the following evidence based on our extensive research into the management of UK freshwater resources at a local catchment scale. This research was funded under the Rural Economy and Land Use (RELU) programme, a joint initiative between the Economic and Social Research Council (ESRC), the Biotechnology and Biological Sciences Research Council (BBSRC) and the Natural Environment Research Council (NERC), with additional support provided by the Scottish Government and Defra. *Strategic objectives of EU freshwater policy*

1. We agree that the “sustainable use of good water quality in the long term” should remain a fundamental aim underpinning EU policy. The maintenance of ecologically sustainable water resources will remain a critical natural resource issue in the immediate and long term future in Member States, and the dual challenges continue to be the qualitative and quantitative aspects of water management. With recognition that these are closely inter-linked our focus is the management and protection of water resources at source, with particular emphasis on water quality and the control of diffuse or non-point source pollution. However, this issue cannot be addressed in isolation and improvements must be implemented in the framework of an integrated approach to land and water management in catchments that can deliver benefits for water quality, environmental flows in dry periods and mitigation of flood risk (as well as other potential gains for recreation and tourism, biodiversity conservation and carbon sequestration). In this submission we do not address issues relating to the management of demand for water supply and hence rates of abstraction.

2. The need to protect the quantity and quality of our water resources whilst sustaining and increasing agricultural productivity is both a current issue and one of the most significant challenges of climate change. For any given climate the quantity and quality of groundwater and surface waters are determined primarily by land uses. Thus, in all but urban areas, rural living, the rural economy and the ways in which we use land frame the options available for protection of water at source and how we can adapt to environmental change. The ways we use land and manage, transport and treat water also exhibit significant linkages with greenhouse gas emissions and attempts to mitigate climate change.

3. In the UK, as in most countries, changes in the hydrological cycle as a consequence of climate and land use drivers are expected to have significant environmental impacts, but predictions of water-related variables show high uncertainty. In summary the current predictions from UKCP09 suggest that all areas of the UK will get warmer, with the warming greater in summer than in winter, and that although there may be little change in the amount of annual precipitation it is likely that it will become wetter in the winter, with drier summers (UK Climate Projections 2009). Thus, under current predictions some regions will suffer greater seasonal water stress while others face greater risk of flooding; in

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other words location and timing really matter and there are important regional differences. For South West England, for example, it is predicted for the 30-year period from 2070-2099 that under a medium greenhouse gas emissions scenario: the increase in mean temperature will range from 1.6 to 4.3°C in winter; and from 2.1 to 6.4°C in summer; the change in mean precipitation will range from plus 6% to plus 54% in winter; and from minus 50% to plus 6% in summer (UK Climate Projections 2009). The range of these predictions is alarming given that many catchments are already under stress.

4. Our research has focused on the threats to water quality in the UK from intensive farming and other non-point sources of pollution. For example, agriculture is estimated to contribute 28% of the total phosphorus load to water in England, Wales and Scotland, but with wide variation across river basins (White and Hammond 2006). Sediments and organic wastes also largely derive from agriculture (DEFRA 2004). Indicators of water quality have been improving but results for assessed rivers in England and Wales show that for overall ecological classification only 26% of rivers are 'good' or better, 60% are 'moderate', 12% are 'poor' and 2% are 'bad', whilst only 65% of aquifers meet 'good' quantitative status (in relation to abstraction) and 59% meet 'good' status for chemicals (Environment Agency, 2009).

5. While the more strategic, integrated and river basin based approach adopted under the Water Framework Directive (WFD) is adaptable to these emerging challenges, EU water policy also exhibits certain deficiencies; primarily we argue the lack of consideration of local level management activities. Action at a catchment scale is required that is capable of protecting water resources at source, managing abstraction and alleviating flood risk. This requires effective partnership working between the relevant agencies at the local level including the Environment Agency, Natural England, local government, regional water company (or companies), and conservation interest groups. The cooperation of land users and changes in their current practices and businesses are fundamental and are matters of local responsibility that require the appropriate degree of local autonomy. In turn this requires adequate standing for the local governance of catchments, matched with accountability, technical capacity and financial resources.

6. These governance challenges are complex and yet have been addressed by our research which has drawn on both international examples of success and in-depth investigation of English catchment case studies. We conclude that the complexity, temporal and spatial scales, dynamics and inevitable trade-offs of catchment management necessitate an adaptive management cycle, collaboration between agencies and levels of government and a 'twin-track' of deliberative partner and stakeholder engagement supported by targeted scientific research (our proposal for these elements are presented in more detail in the attached annex). The current EU policy framework is potentially adaptable and capable of accommodating what is required, but at present there is insufficient recognition of the necessary components (as summarised in our annex) and insufficient facilitation and support of the required approach (at least as demonstrated by implementation to date in the UK).

7. We note that Defra has taken some recent steps to address this and greatly welcome the new pilot catchment management approach announced in February 2011 (see: <http://www.environment-agency.gov.uk/research/planning/131506.aspx>)

Adding value

8. The EU has the capacity to add significant value to the efforts of Member States in meeting objectives for freshwater policy, although to date these have been under-utilised. When comparing water governance in other multi-level systems such as the USA and Australia, the EU provides comparatively limited financial support for lower level implementation of higher level policy (Benson *et al.*, forthcoming). In Australia, for example, environmental management objectives – including those for greater public participation as under the National Heritage Trust/Caring for Our Country Policy - are supported at the regional and local catchment level through dedicated centralised funding (Benson 2011; Commonwealth of Australia 2010). The US federal government also supports collaborative catchment management in states through a variety of initiatives, including Soil and Water Conservation Districts and funding under the Clean Water Act. That said, multiple mechanisms for implementing the Water Framework Directive potentially do exist for this purpose under cohesion and agricultural funds. But these remain under-employed for supporting implementation of water directives (ENEA 2006; Deloitte Consulting/IEEP 2011). For example in the UK, area payments have been available through modulated CAP payments but targeted to meet national objectives which are species and habitat rather than water resource protection focused. Catchment management also requires continuity and commitment and in the longer term such CAP based payments may cease.

9. Consequently, given the often transboundary nature of water issues, subsidiarity in EU water policy is perhaps best served by the EU setting overall objectives for Member States (in the form of directives), which are, in respect of differing ecological, economic and social conditions, best left to the national level to implement. However, since the Water Framework Directive is actually physically implemented at the regional level greater EU support for river basin management at this scale and at the sub-regional (local catchment) scale would seem optimal. Of particular concern is that under the current implementation of the Directive in the UK there is a lack of consideration for the sub-River Basin District (RBD) level, where our research demonstrates widespread activity in community-based partnerships and voluntary groups (including Rivers Trusts and other conservation charities (Cook *et al.* 2011)). Our survey of such local initiatives revealed little real connectivity with the WFD or 'European' process, and often limited connection to Environment Agency led River Basin District Planning, resource management planning by water companies and spatial planning by local government (Cook *et al.* 2011). By marked contrast such local level collaboration provides, on the basis of comparative experience in the USA, Australia, Netherlands, Germany and Denmark, significant opportunities to enhance existing institutional arrangements for water management in some other Member States such as the UK.

Future policy

10. In our view, EU (and hence national) water policy should then, in order to meet the demands of long term sustainability, do much more to promote innovative catchment management at the sub-RBD scale in support of the regional scale approach adopted under the WFD. The findings of our research suggest that such approaches should: support the needs and aspirations of local communities; reflect local geographical diversity; involve local responsibilities and inclusive deliberation under a framework of multi-level governance; encourage new collaborative institutional arrangements for local stakeholder engagement; provide mechanisms for legitimacy and accountability; facilitate linkage to national level enablers and delivery tools; and, finally, provide financial support to facilitate these processes (see below) (Smith *et al.* 2011). The development of adaptive environmental management

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capacity on a catchment scale based on local responsibilities is in our view the only viable means to achieve both short term improvement in the protection and management of water resources, and resilience in the face of climate change and other drivers of stress upon the ecology and sustainability of our rivers, groundwater and other water bodies.

Research and innovation

11. Again, while much research has been conducted on the regional scale implementation of the Water Framework Directive, and other EU water directives, little consideration has been given to how new forms of local level collaboration and institutional arrangements might help address the twin challenges of climate change and non-point source pollution. The EU's research programmes could then do more to support investigations in this area.

12. The capacity for research and innovation is also highly relevant at the catchment level. Local engagement of stakeholders and improved planning and decision making requires the 'twin-track' of deliberation supported by analysis and credible 'first class' science. Capable technical providers at the local level are essential as we note in our annex, and also effective partnerships with Universities and other research institutes.

Other policy areas: agriculture and cohesion

13. Far greater integration is required between EU water policy and cognate sectors, in particular agricultural and regional policy. Better local level targeting of CAP payments could involve funding for land area agreements and actions to support the types of measures outlined above. Existing provisions for regulation and cross-compliance should be strengthened to limit defaults in delivery. Although significant regional funding is already provided for water-related projects (IEEP 2011), cohesion policy should also be better integrated with water policies and presents a significant opportunity to support regional or local scale initiatives, thereby enhancing subsidiarity in water management.

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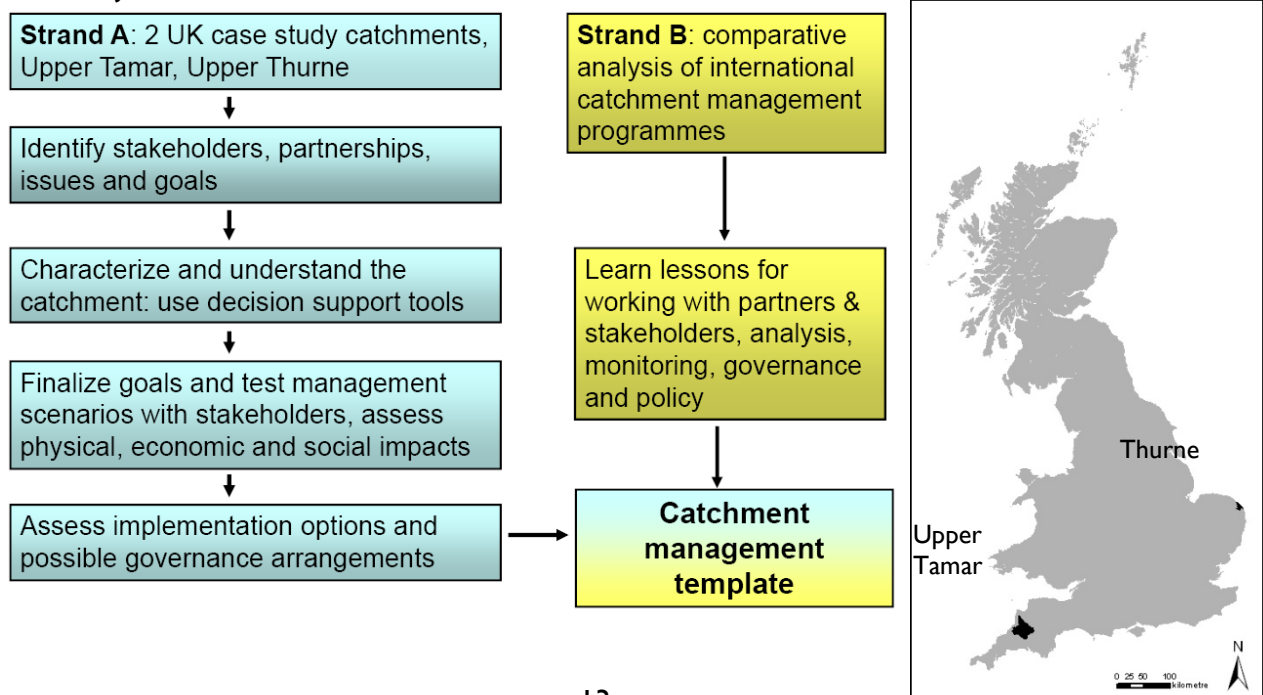
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Annex: A ‘Template’ for Catchment Management

I. The term ‘catchment’ refers to the sub-basins of tributaries or the whole river basin itself, as defined by the watersheds that divide drainage areas. In some countries ‘watershed’ also refers to this basin or catchment land area. The need to manage water from its source to its sink, and the inter-dependence of our water uses with each other and natural processes, require holistic and catchment-based management. Technical capability, leadership and coordination of actions are required for catchments that rarely correspond to administrative boundaries.

Our Project Structure and Activities



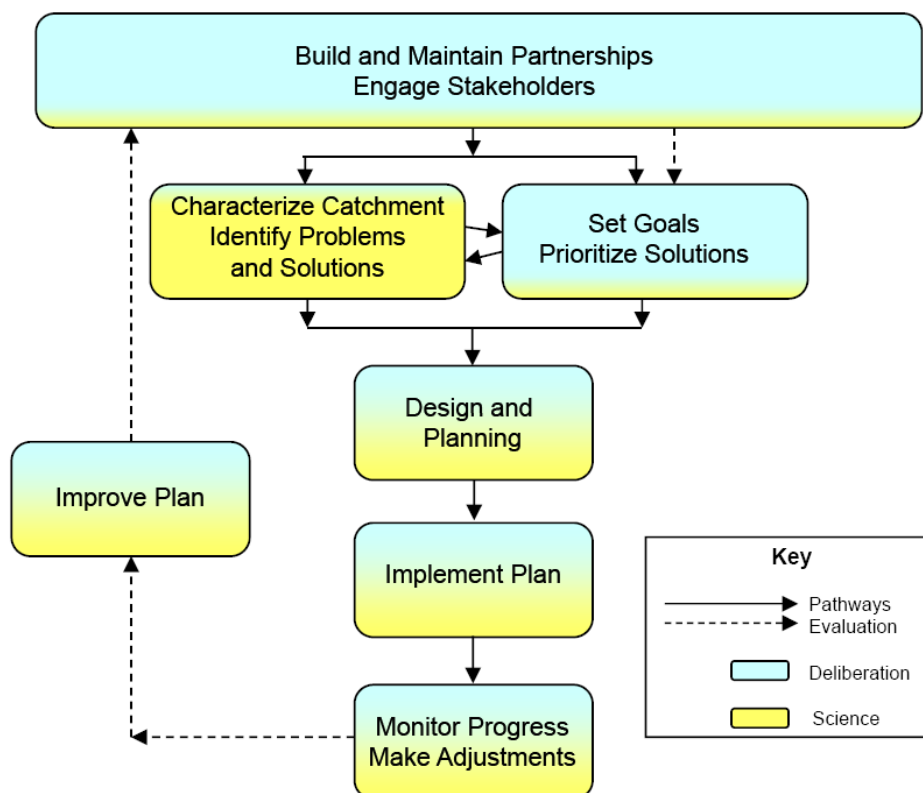
2. Over abstraction, flood risk and water quality are common concerns. Water pollution comprises point and non point source contamination including discharges from water treatment and industry, surface run off from fields, seepage of nutrients from soil into ground water, stream bank erosion and discharges from dispersed and numerous minor point sources such as field, farmyard and urban drains.

3. Based on the achievements of innovative catchment management programmes in the USA, Australia and north west Europe, and on piloting of approaches in England, this project has derived a 'template' to guide integrated catchment governance through:

- the use of science and communication tools to guide policy, decision making, and management measures;
- collaborative partnerships and stakeholder participation that direct and enhance decision making;
- and decision making and implementation at the level which is most effective and accepted within catchments.

Key Components of the Template An Adaptive Management Cycle

4. The complexity, temporal and spatial scales, dynamics and inevitable trade-offs of catchment management necessitate an adaptive management cycle, collaboration between agencies and levels of government and a 'twin-track' of deliberative partner and stakeholder engagement supported by targeted scientific research.



Adapted from EPA Handbook for Developing Watershed Plans to Restore and Protect Our Waters,

EPA 841-B-08-002, March 2008

Aims and Outcome Criteria

Delivery of Long Term Water Quality Improvements and Sustainable Management of Water Resources

5. Ultimate goals are to sustain designated uses of land and water in a catchment with a functioning ecology, accounting for inter-generational needs and guarding the future against present uses.

Cost Effectiveness and Efficiency in the Delivery of Outcomes

6. Achieved through the prioritization of needs and targeting of resources based on catchment assessments, with flexibility in policy and delivery for well adapted local solutions. Monitoring and reporting should also demonstrate cost effective delivery compared to alternative approaches.

Assurance and Acceptance of the Burden of Costs and Distribution of Benefits

7. Allocation of catchment resources based on all legitimate interests and values that is accepted as fair and equitable, and an equitable allocation of financial and other costs to sustain catchment management.

Governance Components

Meaningful and Sustained Opportunities for Public Participation

8. Deliberation with partner organizations and other stakeholders can integrate environmental and public health criteria with economic and social goals. Stakeholders can contribute to catchment assessments and programme design, and implementation will be enhanced by local knowledge, acceptance and ownership.

Cooperative Partnerships Within and Between Levels of Government, Sectoral and Area Responsibilities, the Private Sector and Non-Governmental Organizations

9. Catchment programmes should be built from existing organisations and partnerships, centred on those with current management responsibilities, and working within the framework of prevailing law. The building of partnerships must establish shared goals and recognize differentiated interests and responsibilities. Catchment management requires technical capability, leadership and capacity for coordination covering at least agriculture, water supply, wastewater and waste management, highway and other storm runoff, stream corridor restoration, and development and spatial planning. Laws are needed that facilitate rather than prohibit partnership arrangements and appropriate delegation.

Legitimacy and Institutionalization of Programme Status

10. Integrated land and water management involves local responsibilities and requires inclusive deliberation at the local level under the framework of existing multi-level

government. Thus locally acceptable responsibilities and rights must be translated from higher level regulation, with provision for inter-locality cooperation and coordination. Informal partnerships with effective leadership are often a starting point but growth in funds, capacity and authority usually necessitate standing, legitimacy and a formalised legal status.

Transparency and Accountability

11. All data, synthesized information and decision making should be available to the public and open to scrutiny. Key actors must assume and be accountable for their delegated responsibilities and outcomes. Accountability through elected officials is preferred, implying that at least an oversight role for local government is important.

Funding

12. Successful catchment management programmes access diverse funding sources including the private sector. However, continuity in institutional development and capacity building can be expected to require core public funding, and thus appropriate mechanisms for funding from higher levels of government.

Capacity Components

Mobilization of Locally Accepted Technical Providers

13. Trusted individuals, agencies or groups are needed for capacity building and advisory work, not least with farming communities. Their essential functions include convening and mediating to foster trust, participation, collaboration and co-production of knowledge.

Capacity to Conduct Comprehensive Condition and Threat Assessments, and Strategic and Action Planning, Based on Sound Science and Best Available Knowledge

14. Programmes must be able to make assessments of the condition of and all threats to water resources and prepare comprehensive and integrated plans. Ideally all partners will agree and refer to one integrated plan for the catchment. Planning and implementation must be based on credible science, and there must also be the capacity to commission external expertise and scientific peer review.

Capacity for Monitoring of Performance and Outcomes

15. Monitoring and evaluation of the processes and outcomes of catchment management is essential to the learning and responsiveness inherent in an adaptive management cycle, and for determination of the effectiveness and efficiency of outcomes. Reporting on governance, achievements and outcomes is also inherent to sustaining stakeholder and partner engagement, and to demonstrating the benefits of collaborative and integrated catchment management.

Capacity for Knowledge Exchange

16. Programme technical providers need to act as brokers to compile, synthesize and communicate information, enabling decision makers to consider and use diverse data sources. Education about water resources for children, parents and communities can be a

Dr David Benson, Professor Andrew Jordan, Laurence Smith, Dr Hadrian Cook, Dr Dylan Bright and Alex Inman —Written evidence

facilitator for commitment and action and a two-way process. Gaining the benefits of partner and stakeholder participation in terms of enhanced diagnosis, planning and implementation requires an accessible knowledge base, skilled intermediaries, and high quality communication and decision-support tools.

Further Information:

17. This research has been carried out at the Universities of London, East Anglia and Cornell.

18. Partners in the project include:

The Westcountry Rivers Trust, the Association of Rivers Trusts and the Broads Authority and Upper Thurne Working Group in the UK;
Delaware County Action Plan; the Upper Susquehanna Coalition; and the Hudson River Estuary Programme in New York State, USA;
The South East Queensland Healthy Waterways Partnership, Australia;
The City of Aalborg, Denmark;
Drinking Water Company Drenthe and Drenthe Province, The Netherlands;
and OOWV, Germany.

September 2011

Dr Dylan Bright, Laurence Smith, Dr Hadrian Cook, Alex Inman, Dr David Benson and Professor Andrew Jordan—Written evidence

Dr Dylan Bright, Laurence Smith, Dr Hadrian Cook, Alex Inman, Dr David Benson and Professor Andrew Jordan—Written evidence

[Submission to be found under David Benson](#)

Chartered Institution of Water and Environmental Management— Written evidence

CIWEM welcomes the opportunity to provide evidence to the House of Lords' European Union Agriculture, Fisheries and Environment Sub-Committee D Inquiry into the future direction of EU Freshwater Policy. Our response focusses on the specific issues set out by the Committee.

May we also refer you to the CIWEM workstream that was published earlier this year on ***Integrated Water Management***⁶. This concluded that water needs to be managed as a global resource, along sustainability principles, taking into account the wider requirements of the environment, society and economy in a balanced way.

We also refer you to the Common Implementation Strategy for the Water Framework Directive Guidance document No. 24: *River Basin Management in a Changing Climate*. This illustrates ways in which preparations can be made for climate change within the second and third River Basin Management Planning (RBMP) cycles, including provision for floods and droughts.

Strategic objectives of EU freshwater policy

The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?

1. CIWEM agrees that the overarching goal should be to ensure “*sustainable use of good quality water in the long term*”. The achievement of ‘good status’ for European water bodies is a clearly stated goal of the Water Framework Directive (WFD). It must be stressed, however, that the terms ‘sustainable’, ‘good quality’ and ‘long term’ are all open to interpretation and have no clear scientific definition. It is clear, however, that the management of Europe’s water resources requires consideration of demand-led resource allocation with a focus on conserving water, using it more efficiently and accounting for the need for a healthy fresh water ecosystem.

2. Quantifying the water required to sustain the natural environment and prevent damage to ecosystem services is a considerable challenge. Environmental damage due to water stress may not be incremental and we know little about possible ecological thresholds or ‘tipping points’.

⁶ <http://www.ciwem.org/policy-and-international/current-topics/water-management/integrated-water-management.aspx>

3. Coping with extremes such as floods and droughts, and the frequency with which they may occur provides a major challenge looking to the future. The potential for climate change to affect the location, frequency and intensity of rainfall means that historical hydrological behaviour may not be used to assess future flood and drought risk (this is known as non-stationarity).

4. It is worth emphasising the difference between 'water scarcity' and 'drought' in the context of water resource sustainability. Water scarcity can be a result of low rainfall but can also result from too high demand relative to rainfall. Drought is a short term phenomena which can occur in areas with no long term water scarcity issue. Both of these phenomena will change in the future due a range of external pressures (climate, population, land use and management) changing the location and nature of currently water scarce regions and the frequency and duration of droughts.

5. Consideration needs to be given to the challenges that surround both increased water supply options (more winter storage, reservoirs, transfers) and demand management options (for example water efficiency measures with regard to agriculture, buildings, products and fittings). There is a clear need for robust scientific evidence to support any case for developing new water resources but this becomes increasingly challenging in the light of uncertainty around future socio-economic and climate conditions.

6. Climate change and demographic change implications have to be a principal factor in future business planning and investment. Demand management and technological advances to reduce water use must be robust and flexible compared with infrastructure solutions to water supply problems. Uncertainties around climate and socio-economic projections over longer time periods can lead to difficulties in decision making and planning legislation but should not deter a long term approach. Planning horizons should be at least 30 years with resilience built into the system using flexible and incremental solutions and innovation in technology.

7. Consideration also needs to be given to the challenge of implementing water policy into practice. If it was felt that agricultural or industrial use of water needed to be drastically reduced in certain areas to become more sustainable, water users would seek compensation and at present there is no clear funding route available to compensate for the change required in business practices. The implementation of long term policies that might lead to short term job losses and industry change would lead to legal challenges and would be costly and time consuming to pursue. We question whether the WFD is seen as a directive with 'teeth' and Government support to implement major change if it was shown to be needed through scientific evidence

8. Also, there is a challenge in deciding water pricing approaches for water supply or use as a way to encourage more sustainable water use. Increasing the cost of water may be an

effective way to force users to be more frugal but it is unlikely to be supported as an attractive approach by Governments keen to seek public favour.

How adaptable to emerging new challenges is the current policy framework likely to be?

9. The WFD promotes the integrated management of water resources within a river-basin framework to support environmentally sound development. As it stands, this current policy framework is adaptable to meet emerging challenges (for example implementation, climate resilience, water quantity, resource efficiency and policy integration) based as it is on a 6 year cycle of planning and review. It requires the integrated water demand of all water use sectors within a river basin and appropriate water ‘accounting’ and modelling frameworks need to be made available to facilitate the necessary planning and management of the available water resources.

10. One specific issue relating to implementation of the WFD relates to the scientific basis on which ‘programmes of measures’ are agreed and implemented to achieve ‘good status’ within a water body. For example, land use management measures implemented to protect against water quality degradation and groundwater depletion and to deal with possible climate change impacts, may not have clearly identified and quantifiable environmental impacts within a 5 – 10 year timeframe. This is particularly important with respect to longer term ecological responses.

Adding value

How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

11. Many aspects of policy relating to surface water resources, notably surface water abstraction, flooding issues and water quality, are conventionally and conveniently managed at the level of river basins. Groundwater resources however, often extend beneath more than one river basin and infrastructure to transfer water between basins exists, requiring policy relating to droughts, and the associated water resources management to be focused at regional or national level.

12. As with CAP policy, member states should be given flexibility to allocate funding relating to water policy in a way which best suits the requirements of their own regions. For example, under certain conditions, financial support to farmers (e.g. in East Anglia, UK) to build small scale reservoirs for rainfall and flood harvesting is needed and could be cost effective at both national and EU level.

Future policy

In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

13. There is a need for measures to cope with climate change that should consider alternative water supply options such as wastewater re-use, storm-water reuse, brackish water use and desalination to cover agricultural, industrial and domestic demand. In this respect, there is also a need for more flexible policy with regard to abstractions for dealing with droughts and for adaptation to climate change, for example, licensing consumers to abstract water during summer high flows to top up reservoirs. The possibilities for artificial aquifer recharge should be fully explored.

14. There is a similar need for policy on the use of wastewater during droughts (for example in cooling towers), and the use of less water demanding and drought tolerant crops to cope with drought periods. There is also a need to link water scarcity issues to agricultural policies and to an EU policy with regard to biofuel and energy crops and their impact on water availability. In general, the opportunity needs to be taken to link policies aimed at land use, food security, energy security and water security.

What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

15. The integration of water scarcity and drought into sectoral policies is an issue that should be introduced into policy in the future. Measures to cope with climate change, especially drought, must include the use of alternative water resources although an assessment of the risks and impacts of options such as desalination, brackish water and water re-use must be fully quantified. The need for alternative water supply options will undoubtedly grow in the future due to climate change and the reduction and/or changes in seasonality of water availability in many countries and regions.

16. Management of drought across Member States has to date been reactive rather than proactive. Water scarcity and drought remains under-addressed as a major policy issue and there is no clear future regulatory action aimed at combating the impact of droughts. Several EU member countries do not have clear drought management plans. There is an opportunity for an integrated policy approach, including a hierarchy of measures prioritising water demand management, as part of the implementation of the WFD.

17. Existing water planning practices (mainly supply-oriented) have proven inefficient in coping with the adverse impacts of drought, leading to over-exploitation of water bodies and as a result, aquatic ecosystems have been adversely impacted (for example in southern European countries). Demand management strategies are currently not promoted as

obligatory measures in the WFD to reduce water consumption and increase water use efficiency during drought events. The role of water users in decision-making could be better accounted for in relation to alternative water supplies.

18. Most EU countries do not perform forecasts of water scarcity and/or drought events on a seasonal basis, mainly because weather forecasting on this time scale is highly uncertain. Monitoring networks for precipitation, river flow, groundwater and soil moisture can be used to estimate the current water storage and availability. Given the high degree of uncertainty in climate change projections and the growing pressure on water resources, it is essential that these hydrometric networks are maintained to facilitate effective drought management.

19. The concept of a water footprint for consumer products and activities is being increasingly used to raise the awareness of consumers on the water consumption associated with their lifestyles. The majority of the UK's agricultural water footprint is overseas. Much care needs to be taken in the use of water footprints, as importing crops grown in countries where water is plentiful, despite apparently large water footprints, should be seen as positive use of EU water resources rather than negative. Water footprinting should be used as one tool in an effort to consider the optimisation of EU agriculture in areas where the water resource is abundant and/or where other water demands are lower. Such issues lay at the heart of ensuring water, food and energy security at EU scale.

Research and innovation

How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?

20. Research needs to be conducted with the full and active participation of all stakeholders (policy makers, water users, environment agencies, universities and industry) and needs to be clearly targeted at water resources management and at water policy support and implementation. An appropriate model for this was the Specifically Targeted Research Project's (STRP) funding mechanism employed in EU Framework Programme 6. Such projects can be tasked, for example, with providing clear management guidance (with respect to droughts), with developing scenario assessments (with respect to water scarcity and water resource availability) and developing pan-European environmental standards and indicators (with respect to freshwater ecology and ecosystem services).

21. In order that water resources may be managed to provide sustainable supply for all use sectors, there is a need for a focus of research funding into the 'valuation' of ecosystem services and the understanding of the ecosystem impacts of 'programmes of measures'. Without a full understanding of the value of the ecosystem it is not possible to assess the proportion of water that should be allocated to the ecosystem function.

22. In terms of droughts and water scarcity, focussed research is needed to help develop specific river basin plans that explicitly deal with drought conditions, adaptation to drought

and distinction from water scarcity. The research needs to consider current climate variability, future climate change and needs to take into account the dynamic state of the storages in the river basin. Common indicators (preventive, operative, management, and organisational) need to be developed to address different conditions and different drought phases. The measures for mitigating drought impacts need to be assessed according to the severity, duration and spatial extent of the event.

23. There needs to be a specific research focus on developing seasonal forecasting for droughts at EU scale. Methods for reducing uncertainty in forecasts are urgently required and the forecasts need to be appropriately linked to actions within a management plan. Additionally, more work is needed on the down-scaling of future climate scenarios to make them appropriate for local impact analysis, especially on eco-hydrological processes.

Other policy areas: agriculture and cohesion

How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

24. The important challenge for policy makers is to develop a higher degree of interdependence of different policies across the agriculture, water, energy and environment sectors. More effort should be focussed on sectoral integration of water policies. Integrating the WFD elements into CAP is important as both policies follow very different regulatory philosophies. Policy on renewable energy sources and targets for biofuel production have implications for water use and water quality and it is important that the future policy development in this area is harmonised with water policy objectives.

25. There is also a need to adopt the concept of the Green Economy in the water policies, where growth in income and employment is driven by investment that reduces carbon emissions and pollution, enhances energy and resource efficiency, and prevents loss of ecosystem services.

September 2011

Consumer Council for Water—Written evidence

The Consumer Council for Water (CCWater) is an independent, non-departmental public body representing the interests of water and sewerage customers across England and Wales. We have four local committees in England and a committee for Wales. In 2011-12 we will cost only 21p per water bill payer.

We have worked with the water industry and its regulators since 2005 to get the best results for consumers. In that time we have:

- been **central to achieving the customer focused outcome from the 2009 price review**, which was over **£1 billion better for water customers** than the 2004 price review.
- **convinced water companies to return over £135m to customers** through either additional investment or lowering prices;
- **dealt with over 90,000 complaints**; and
- **returned over £12.4m to customers in compensation.**

We welcome the opportunity to submit evidence to this House of Lords inquiry into EU Freshwater Policy, published by the European Union Committee (Sub-Committee D) on 19 July 2011.

Our evidence is provided from the perspective of the water customer, both domestic and business. It addresses three areas of scrutiny identified by the Committee: strategic objectives of EU freshwater policy, future policy, and other policy areas.

1. Executive Summary

- 1.1 The current revision of the EU's freshwater policy is a good opportunity to understand (and address) the shortcomings, achievements and future options to achieve a sustainable water environment. Two of the key challenges of this review include the implementation of legislation and the integration of water into other policy sectors.
- 1.2 Water is a valuable resource which must be managed with care. As such, we believe that the goal of EU water policy should be to ensure 'sustainable, good quality water'. However, it is crucial to take into consideration not only the environmental components of sustainability but also the economic and social aspects.
- 1.3 We think that as part of this review, water customers should be involved in the key decisions that affect the services they receive and the charges they pay. If consumers are engaged with the issues and understand the proposals, they are more willing to accept the solutions.

2. Response to Consultation questions

Strategic Objectives of EU Freshwater Policy

Question 1 – The Commission states that the aim of future policy should be to ensure a ‘sustainable use of good quality water in the long term’. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In light of existing information on population and climate change trends, how long should the Commission’s ‘long-term’ be?

- 2.1 Water is a valuable resource which must be managed with care. As such, we believe that the goal of EU water policy should be to ensure ‘sustainable, good quality water’. We acknowledge that ‘sustainable use’ should be part of the strategy to achieve the EU’s goal. However, it is crucial to take into consideration not only the environmental components of sustainability but also the economic and social aspects.
- 2.2 One of the key issues that should be addressed by the Blueprint to Safeguard Europe’s Waters (the Blueprint) is the cost of implementing environmental legislation. For example, to 2015, water companies in England and Wales – and therefore their customers – will meet 82% of the costs of the first cycle of River Basin Management Plans of the Water Framework Directive (WFD)⁷. But, according to the Environment Agency, diffuse pollution from urban and agricultural sources is the main reason why streams, rivers and lakes are failing to achieve good ecological status. As such, we would like the Commission, through the assessments contained in the components of the Blueprint, to look at how sectors other than the water industry can play their part and make a greater and fairer contribution to achieving environmental objectives.
- 2.3 An essential part of the Blueprint should be the involvement of water customers in the key decisions that could affect the services they receive and the charges they pay. Local decisions must be based on a comprehensive understanding of what local consumers want for their environment and their willingness to pay for changes. If consumers are engaged with the issues and understand the proposals, they are more willing to accept the solutions and the costs attached to them.
- 2.4 Our research⁸ indicates that 75% of customers in England and Wales want to have a say on how water companies spend their money. This involvement should include making choices about proposals to introduce and/or amend environmental obligations, and, where agreed, the pace of implementation.

Question 2 – How adaptable to emerging new challenges is the current policy framework likely to be?

- 2.5 The Commission should approach the components of the Blueprint with a full understanding of the interaction of environmental quality Directives, policies and their requirements. Doing so will ensure that the resulting policy options are sustainable in the long term. Ignoring these relationships might result in policy

⁷ Defra (2009) – Impact Assessment of 1st cycle of river basin planning developed to implement the EC Water Framework Directive.

<http://archive.defra.gov.uk/environment/quality/water/pdf/national-impact-assessment.pdf> (accessed on 3 August 2011)

⁸ TNS (2010) Consumer Engagement Omnibus Research. TNS. October

<http://www.ccwater.org.uk/upload/doc/CCWConsumeEngageOmnibusResOct10.doc>

options that contradict each other and undermine the long-term objectives they want to achieve.

- 2.6 Any deadlines set out in Directives should be flexible enough to ensure actions to protect the environment can be implemented in the most cost effective and sustainable way.
- 2.7 For example, older environmental legislation has rigid standards and deadlines that can lead water companies (and other parties) to implement expensive, energy and carbon intensive measures to meet their objectives. In the long term, such measures can result in a higher level of greenhouse gas emissions, increasing the costs to water companies and their customers, and making it more difficult for the UK Government to meet its carbon reduction targets.
- 2.8 Hence, plans for the implementation of environmental Directives should consider flexible, ‘soft’ approaches to problems alongside ‘hard’ engineering solutions. The former may include catchment management, surface water management, sustainable drainage, cultivating wetlands and managing peat uplands. In England and Wales, water companies, environmental organisations and farmers are working together on more than 100 catchment management and investigation schemes that not only contribute to improved water quality and biodiversity but also may help to reduce the adverse impacts of flooding.

Future Policy

Question 4 – In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

- 2.9 Future EU freshwater policy should focus on outcomes to achieve a healthy water environment. This can be accomplished by pursuing sustainable and efficient solutions to problems, and developing a better approach to regulation that includes some degree of flexibility. Furthermore, we encourage the Commission to promote initiatives that are based on sound science and evidence, have been subject to cost-benefit analysis and are the most cost-effective measures to implement. In short, benefits should outweigh costs.
- 2.10 Two of the key issues that should be addressed by this review are the implementation of legislation and integration of water into other policy sectors.
- 2.11 As mentioned in the answer to Question 1, the water industry bears a large proportion of the costs related to the implementation of the WFD, even though diffuse pollution from rural and urban sources poses a greater threat to the water environment. To address this inequality, we support sharing implementation costs between sectors, in proportion to their level of responsibility – the ‘polluter pays’ principle. To achieve this, there needs to be greater emphasis on tackling the issues through changes in policy, incentives and advice.
- 2.12 Full implementation of the WFD will result in environmental improvements over the next 20 years. This will come at a cost to water customers. As such it is imperative

that water customers are given a say in the scope and pacing of measures. We believe water customers will accept a phased implementation of measures that ensures bills remain at an affordable level.

- 2.13 Better integration of water into other policy sectors will be key to the sustainable management of water resources in the long term. If solutions are focused on a particular sector this will miss an opportunity to make the most of multiple benefits. This should be an essential component of the Commission's Resource-efficient Europe Flagship initiative.

Question 5 – What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment and labelling of the water footprint of products?

- 2.14 We agree that the EU should present initiatives to encourage more efficient water use. But measures should be proactive, and not reactive only at times of drought. Initiatives that promote awareness of water as a finite resource and encourage more efficient water use by, inter alia, consumers, businesses and farmers would be a good start.
- 2.15 In addition, any measures aimed at achieving water efficiency should include tools to evaluate progress towards meeting objectives.
- 2.16 We support the use of the 'twin track approach' where demand management options are considered before developing new resources. This is widely used in water resource management in England and Wales. However, any measures to reduce water use (and therefore waste water disposal) should take into account the reduced self-cleaning capacity of sewers which could lead to sediment deposits, increased odour problems and potential blockages, as has happened in some German cities.
- 2.17 CCWater's research into consumers' attitudes to water use and water efficiency shows that:
- Consumers are willing to get involved if others do too⁹;
 - Consumers have expressed a strong willingness to think about their own water use and ways of reducing waste¹⁰;
 - Most consumers (76%) take specific actions to reduce their water use¹¹.
- 2.18 We remain cautious about legislative proposals to improve water efficiency in buildings, given that the Commission has not been clear about their scope or how to achieve it. Furthermore, it remains to be seen how these proposals would interact with existing schemes to encourage water efficient fittings in new (and in some cases

⁹ MVA Consultancy (2006) – Using Water Wisely, Quantitative research to determine consumers' attitudes to water use and water conservation. A report for CCWater in association with WRc.

http://www.ccwater.org.uk/upload/pdf/Using_Water_Wisely_v4_PRINT.pdf

¹⁰ Opinion Leader (2006) – Using Water Wisely. A deliberative consultation commissioned by CCWater.

http://www.ccwater.org.uk/upload/pdf/Using_Water_Wisely_Final_Written_Report.pdf.pdf

¹¹ DJS Research (2011) Annual Tracking Survey. A report prepared for CCWater.

http://www.ccwater.org.uk/upload/pdf/CCWater_Annual_Tracking_Survey_2010_FINAL.pdf

existing) buildings, such as the Building Regulations I F¹² (applicable in England and Wales) and the Code for Sustainable Homes I 2F¹³ (applicable in England, Wales and Northern Ireland).

- 2.19 We feel that there is potential to work collaboratively with different stakeholders, including the Commission on raising public awareness and appreciation of water as a finite and valuable resource. This can be done through information and education campaigns, including the potential for energy savings achieved through efficient (hot) water use, and undertaking water efficiency initiatives such as retrofitting and product labelling.

Other policy areas: agriculture and cohesion

Question 7 – How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy be used and adapted to the needs of freshwater management?

- 2.20 Water should be an integrating element between sectors, policies and activities. As such, the Blueprint's outcomes should look at interactions with other areas when determining the efficiency, effectiveness and coherence of existing legislation.
- 2.21 The forthcoming Common Agricultural Policy (CAP) reform will be an important opportunity to protect and enhance the natural environment. We consider that Government needs to support the following principles during relevant discussions:
- A continuation of current levels of support for agri-environment schemes, if not an increase. These offer a three-way win:
 - The water sector and its customers benefit because improved land management practices can help to reduce the long term financial and carbon costs associated with cleaning up polluted raw water.
 - The agriculture sector benefits because such schemes help to reduce the need to impose more onerous regulations on agriculture at a later stage.
 - 'UK plc' benefits because the likelihood of meeting European environmental requirements are increased, reducing the risk of infraction proceedings and the significant costs they entail;
 - A revised CAP should incorporate incentives to tackle pollution at source and encourage efficient water use;
 - The revisions should also be compatible with the requirements of EU environmental Directives, supporting the 'polluter pays' principle.

¹² The Building Regulations promote standards for most aspects of a building's construction, including water efficiency. These standards establish that water consumption must not exceed 125 litres per person per day.

¹³ The Code for Sustainable Homes is a voluntary standard for the sustainable design and construction of homes. The Code sets minimum standards for water use, which vary between 80 and 120 litres per person per day, depending on the desired level of sustainability to be achieved by that building.

3. Conclusions

3.1 The current revision of the EU's freshwater policy is a good opportunity to understand (and address) the shortcomings, achievements and future options to achieve sustainable water environment. This will come at a cost to water customers. As such, we call for a phased implementation of measures to ensure that water bills remain at a level that customers find affordable and acceptable.

3.2 CCWater considers that the desired outcome of the Blueprint should be a pragmatic and flexible approach to implementation of environmental policies and standards. We therefore encourage the Commission to promote schemes that are based on sound science and evidence, have been subject to robust cost-benefit analysis and are the most cost effective measures to implement. In short, schemes where there is a demonstrable need, measurable benefits and where costs do not outweigh benefits.

5 September 2011

Consumer Council for Water—Oral evidence (QQ 143-166)

Evidence Session No. 6.

Heard in Public.

Questions 143 - 166

WEDNESDAY 25 JANUARY 2012

Members present

Lord Carter of Coles (Chairman)
The Earl of Arran
Baroness Byford
The Earl of Caithness
Lord Cameron of Dillington
Lord Giddens
Baroness Howarth of Breckland
Lord Lewis of Newnham
Baroness Parminter
Baroness Sharp of Guildford

Examination of Witnesses

Tony Smith, Chief Executive, Consumer Council for Water, **Deryck Hall**, Head of Policy and Research, Consumer Council for Water, and **Dr Ana-Maria Millan**, Policy Manager, Consumer Council for Water

Q143 The Chairman: Welcome, Mr Smith, Mr Hall and Dr Millan. Just a couple of formalities before we start, if I may. You have in front of you a list of interests that have been declared by Committee Members. This is a formal evidence-taking session of the Committee. Full shorthand notes will be taken and they will go on the public record in printed form and on the parliamentary website. We will send you a copy of the transcript and you will be able to revise it in terms of minor errors. The session is on the record. It is being webcast live and will be subsequently available on the parliamentary website. I do not know whether you would like to make any general comments or whether you would like to go straight into the questions but, given we have 45 minutes, unless there is something in particular you would like to draw our attention to, can we go straight to questions?

Tony Smith: Yes, that is fine.

The Chairman: Thank you. If I may then, I will take the first question, which is the question of strategic objectives. In your evidence, while you agree that the goal of the EU

water policy should be to ensure sustainable good-quality water, you also stress the need to take into consideration the economic and social aspects of sustainability, and of course the environmental ones as well. What we would like to know is what you see as the main threats to the environmental quality of water resources in England and Wales. Secondly, under the Water Framework Directive classification, as we know, only 26% of the rivers in England and Wales have good ecological status. The WFD looks for all water bodies to achieve this status by 2015. What we would like to know is your view of the gap between that aim and where we are.

Tony Smith: Thank you. I suppose what we see as the biggest threat in terms of the economic and social sustainability of the environment is the danger that the speed of improvements in the environment has a bill impact on water customers, which they find unacceptable over time. As part of our role, we have done a lot of customer research about customers' willingness to pay for environmental improvements and to adopt water efficiency measures, metering and so on. What we find is that customer satisfaction with the value of water, in particular, is actually softening over time. In most areas it is not yet reaching a critical point, but in some areas where the price of water is high it has reached a critical point, and that is particularly true in the south-west of England. Some water companies also report that every time they go and talk to their customers every five years as part of the price-setting process in water, the willingness of customers to pay is becoming less over time. In the past, customers were willing to make a contribution, which would actually cause their prices to rise, but their willingness to do that is reducing.

Our concern is that if we pace improvements too fast, which have a very rapid and very high impact on customers' bills, customers will become less receptive to that. The legitimacy of the water industry and of the regulated system may diminish, and that would threaten long-term improvements, because customers generally are quite receptive to improving the environment and doing their part to help the environment and help water resources. It is all about the speed with which these things are done; hence the issue of sustainability. It is okay to talk about sustainability in terms of the environmental sustainability, but the system will not be sustainable if customers who are paying for many of these improvements do not over time view that as being legitimate and are not willing to pay that.

Q144 The Chairman: Do you have a sense of the real increase that consumers are prepared to pay?

Tony Smith: Yes.

The Chairman: What would that be?

Tony Smith: So far they have faced more than a 44% increase in real terms since privatisation, and that is the thing that has caused customers' willingness to pay to reduce. The other factor is that in the early days the improvements that were made by the water industry were very visible to water customers; they could see blue flags appearing on the beaches, and they could see things being cleaned up in the rivers. Increasingly, the improvements are less visible to them.

Generally speaking, when companies go and ask their customers about willingness to pay, they are generally happy to pay maybe 1% or 2% over inflation, but not much more than that. As I mentioned earlier, it does vary by region in England and Wales. Whereas that would be the average picture, if you ask customers in the south-west, where bills are very high already, their view is, "I do not want any increase at all; in fact, I want a price reduction because we have already paid for the improvements". The south-west is an indicator of

where we could be if we try to improve things too fast in environmental terms. In the south-west, politically, water is a very high-profile issue with customers, with politicians, and with the media. It is not so true elsewhere and what we need to do, I think, is pace the improvements—the Water Framework Directive and other improvements—collectively in such a way that customers will continue to buy into them. That is where customers are. They want to improve the environment. They want to know that their money is being spent sensibly to do that, but what they do react against is when you get very rapid and sharp price increases.

Q145 Lord Giddens: I was just going to ask a point of information—maybe I missed it, but how do you define “consumer” or “customer”? Does that include businesses and so forth?

Tony Smith: Yes.

Lord Giddens: You obviously have very different interests there.

Tony Smith: Yes, you have.

Q146 Lord Giddens: The consumer can be threatened by the business use of water and so forth. Do you in some sense represent everybody?

Tony Smith: Yes, I was just going to come on to that. We represent all customers. Obviously, the water industry is largely a monopoly, certainly for domestic customers, but we actually represent business customers and domestic customers. You are absolutely right that their interests are slightly different. For example, business customers, particularly larger ones, are quite interested in competition; domestic customers are far less so. To some extent, they do have conflicting concerns. However, I think it is true to say that the issue around value for money, when we do research of either business customers or domestic customers, echoes in both sectors. That issue around speed and visibility of improvements is, I think, true across the various customer segments.

It is also true to say that not all domestic customers and not all business customers are the same. There are different segments among them. Some people are much more receptive to making these improvements and paying for them and some are not. Some who are struggling to pay their bill today are obviously far less receptive. So the issue of affordability is quite an important one for the water industry and for achieving ambitions in future, because it is those customers who are less receptive to environmental improvements and less receptive to having a water meter because it can affect their bill much more dramatically.

Q147 Lord Giddens: Just to pursue briefly, are you not dealing with a lot of opposing interests? For example, the interests of a farmer might be quite different from someone involved in a particular industry and might be quite different from a consumer or someone who is interested in using a river for pleasurable activities. It would seem to be such a diverse group of people who consume water that you surely must study all these divergences and interests, too, and try to piece them together.

Tony Smith: We do. You are right that it is complex in the sense that there are trade-offs to be made between the differing views. That is one of our jobs, to sit down with the water companies and with the regulator, who will be speaking next, to understand those trade-offs, to understand where there are areas of consistency and where there are differences. Generally speaking, the trick of the broader water sector—and by that I mean consumers, customers, water companies, regulators, Government and interest groups—is that, where

those interests coalesce, to try to make these improvements in a way that customers will be willing to pay for.

Q148 Lord Lewis of Newnham: I would like to extend the point that Lord Giddens was just making with you. If I understand it correctly, one of the problems in the south-west—let us take sewerage, for instance—is demand, which once again is something that is very important from the point of view of potential environmental pollution in the sewerage system. This is where one of your major phosphate problems is coming from. It is simply, of course, that the sewerage systems have had to be improved tremendously in this country. In the south-west, you have this peculiarity of a large ingress of population in the summer period over and above the winter period. Who you are talking about, when you talk about “the consumer”, becomes a matter of definition here as to virtually the time of the year. In point of fact, it is the situation of many of the smaller communities in the south-west of imposing on them this tremendous problem over summer visitations and the effect this has on your sewerage system. I do not know how much in the south-west you have tertiary treatment of your sewage, but that seems to me to be something that came in—tertiary treatment of sewage and systems of this nature. You have a rather complicated problem here. Secondly, my worry is simply, of course, that in many instances it is not the actual consumer that is responsible for that pollution. How far do you go in actually attributing the actual source of pollution and collecting monies from sources of pollution, which obviously are potentially in agriculture but, to a certain extent, also occur with the urban communities as well?

Tony Smith: That is an important point. The issue around the south-west is partly the point you made. It is also the point that the south-west obviously has a very large coastline and relatively few people. The burden on them particularly during the 1990s was very high and that is what caused the prices to rise. I think the reasons are understood, but from the customers’ perspective it is viewed as unfair when they compare their price against others.

The other point you make is a very important one. As I said earlier, customers are receptive to playing their part on making environmental improvements but they do want to see other parties playing their part too. If the water industry is contributing to a burden, it is right that it should put that right and that water customers should pay for that. It is also quite important that diffuse pollution, in particular, is resolved for two reasons: one is, that one of the biggest constraints on customers playing their part is a view that they might have that others are not playing their part; the second thing is it would be a bit perverse for customers if they thought they had contributed such a lot through their bills to an improvement, yet the improvement in terms of the overall quality of the environment was not actually achieved. Where the water customers contributed potentially billions of pounds and the environmental standards are not achieved, that would be seen by customers as being really perverse. The Environment Agency reports that the water industry is responsible for roughly 40% of issues around failures by 2015, yet during the first phase of the river-basin management plans I think the water industry paid out something like 80% of the value of the improvements. So, there is a big mismatch between the issues that fall to the water companies and the bill that customers are paying for that.

Q149 Baroness Howarth of Breckland: I was going to ask this question at a different point, but it seems a good one to ask now because you have talked about the view of the different parties. What do consumers think about profit in relation to the water companies? Because if you talk to consumers, that is the issue that they raise, I think, almost more than

any other. Is there transparency from the water companies about how much profit is going to shareholders as against investment? Is there a sense of fairness of that among consumers?

Tony Smith: It varies. When you do customer research, customers do understand that companies have to make a profit in order to reinvest to make these improvements.

Baroness Howarth of Breckland: It depends how much.

Tony Smith: Yes, exactly, that is the point. Sometimes their perception is that the companies and the shareholders are actually benefiting hugely and they are not necessarily benefiting so much. That is why we press the water companies, when they are telling their shareholders what a great job they are doing and what profits they have produced, to also be telling their customers, “This is what we have done with your money, and these are the benefits you are getting”, and the companies who do that well have less of a problem with their customers’ perceptions. Some companies are very, very good at telling their customers what they are getting, in terms of performance improvements, and also what they are spending down their road—things that they can see. The companies who do that tend to get very high levels of customer satisfaction, up in the 80s in terms of percentage points compared with 70% for the industry as a whole. Companies can do this as long as they think in the customer’s terms.

Q150 Baroness Byford: Can I very quickly follow on from that and link to the point made by Lord Giddens? You keep referring to customers. In the reply you have just given to Baroness Howarth, what proportion of that was from business or from farming compared with us as individual customers?

Tony Smith: Sorry, I do not understand the question.

Baroness Byford: You have just told us that customer satisfaction is quite good, but my question to you is: how much of that has come from business customer satisfaction, either from farming or business or whatever it might be, and what proportion has come from individuals like us as individual consumers?

Tony Smith: Yes. We do customer research across different sectors and the concerns vary according to who the segments are. What I am talking about mainly are domestic customers.

Baroness Byford: Do you have any figures on the breakdown? That is what I was asking for.

Tony Smith: Yes, we do. The issues around dissatisfaction for business customers tend to be that the smaller business customers’ views are very similar to domestic customers. What I just described I think would be true of most domestic customers and certainly the smaller business customers. The larger business customers are probably more receptive to the profits because they probably understand that more, but their concerns are slightly different. Their concerns are about the comparisons that they would make in terms of the service they get from a water company versus their energy company, for example. Their concerns are different, I would say.

Q151 The Chairman: Before moving on to Lord Arran’s question, could you brief us just for a minute on the gap issue?

Tony Smith: Yes. There are two points I would make on this. One is that, as I understand it anyway, the objective in the Water Framework Directive is to aim to achieve—rather than to have achieved—the improvements by 2015. I think that is an important point because of,

as I was pointing out earlier, the need to phase and pace the improvement programmes. There are opportunities in the Directive to phase things, I think out to 2021 and 2027, and those opportunities should be taken.

The second issue is the parameters that you have to pass in order to get good status for a watercourse—this issue around “one out, all out”, which I guess you have probably heard about. Our view would be that it should be about the quality of the water rather than the parameters as such. I think there is quite a lot of support about that. We need to be realistic about the gap. We need to fill it but, as I say, we need to pace it appropriately.

Q152 Earl of Arran: On the subject of water scarcity—I live in the West Country where we are not short of water since we have had four months of solid rain, as well you know by now—the European Commission proclaim on high that there is a 40% global gap between water demand and supply by the time 2030 arrives. I have two sets of two questions. Do you share the view of how serious this water scarcity could become? Secondly, we have had evidence from water companies that water transfer between regions is the preferred solution for the transfer of water. Of course, this does bring into question significant energy and financial costs. What would be your preferred approach on those two questions?

Tony Smith: We would be concerned if the safe, reliable supply of water to customers was threatened in any way because, apart from the value-for-money issue, that is the customers’ top priority for any of the things that water companies provide. Obviously, the situation in England and Wales, I presume, let alone Europe, is very different by region. The region you mention is particularly acute in that sense. Our view is that you need a twin-track approach to resolving that problem. Demand-side measures, such as metering and so on, could play a part, but it is quite high risk to pin all your hopes on delivering demand-side measures. So there needs to be a joint approach to developing new resources as well. There are opportunities through the transfer of water—and the facility exists already to do that—to improve the allocation of water to the benefit of all customers on average. We would agree with the regulator and with some of the water companies that there are opportunities to do that. The issue is around overcoming the barriers that are getting in the way of that. We think that that would benefit all customers on average, because it would mean that some of these shortages in some areas could be reduced, that water would be allocated better and, therefore, that the average cost to customers would reduce. I suppose a concern would be that if you start getting into localised pricing as a result of that, it could have a very large effect on some customers in some areas and that would be a concern—again, that goes back to the legitimacy point I was making earlier.

Q153 Earl of Arran: Would you agree with this 40% gap between demand and supply?

Tony Smith: Yes.

Earl of Arran: How is it done? How have they worked that one out, do you think?

Tony Smith: It does depend on the local circumstances and the regulator, who will be speaking in a minute, and also some of the companies have tended to take the various ideas of how you can transfer water and how it would work in their circumstances. What it shows essentially is at the moment there are areas where water is relatively plentiful, or relatively cheap to collect and treat, sitting next door to areas where water is less plentiful and more expensive to collect and treat. At the moment, there is not the transfer between those two regions, which looks odd. There are all sorts of reasons for that in terms of the incentives that the water companies have. What needs to happen is that the incentives to hold that

water will need to be changed so that they are incentivised to transfer that water, and there are ways of doing that.

Q154 Earl of Arran: Thank you. I come to my second set of two questions. How effective do you think demand management can be? I am not quite sure what demand management precisely is. It is a strange phrase that has come from somewhere. What more should be done, and what is the EU's role in this, if any? That is the first question. The second question is: how can future water demand most effectively be considered within the planning system at the catchment level?

Tony Smith: Demand management can play a part, definitely. Water customers are actually again quite receptive to doing their bit. We have done a lot of research on using water wisely, and customers are very receptive to that. Again, there are different groups of customers but there are very few customers who would say, "It is nothing to do with me; I am not prepared to do anything". However, what they do need are really straightforward messages about the things that they can do—practical things that they can do—and help to do that. They need those messages from a range of different organisations. It becomes quite supporting if they hear it from different bodies apart from the water company, such as Government, regulators and people like us, the independent consumer body. They can be a bit distrustful of people like water companies for the reasons we were talking about earlier—the issue around profits and so on. They tend to think that if a water company is encouraging water efficiency it must be because it is beneficial to the water company.

But we have actually had quite a lot of success on this topic. We have been working with the water companies, particularly in the south-east of England and in the east of England where water is most scarce. We track different customers' use over time and what we have seen now is 75% of customers are actually doing things to save water, and that has gone up from 70% only two years ago. There are customer behavioural changes happening there, which are affecting the demand for the product because a number of companies in the south-east are now reporting that, for the first time for many years, their demand is beginning to come down.

On your question about what the EU role can play, I think what we would not want to see is a one-size-fits-all approach across the whole of Europe, including England and Wales. Because even in England and Wales the circumstances are very different. In the north, in Northumbrian territory, they are actually relatively secure in terms of resources because of the Kielder reservoir. In the south-east and east of England, it is much more acute; therefore, you need to adopt a different approach.

We are quite encouraged by the Government's position on this in the recent White Paper that recognises that you need to adopt a different approach in different regions. There can be overarching messages to customers but you need to be more active on the ground in the areas where water is most acute. We think that the EU's role can be to give yet another message about water being a very vital commodity, which rings true with lots of people, but not to impose a very rigid approach to how it is managed country by country. That would be inappropriate.

Q155 Lord Lewis of Newnham: Very quickly, I will take up a further point. Of course, one of the problems in the south-east is the fact that this is an area in which the Government is concentrating on building new housing and things of that nature. I would ask two separate questions on this. First, as far as I understand it, when people are building housing, there is no necessity for them actually to contact the local suppliers of water

because if they build a house it is your responsibility to supply the water to them. This seems to me to be a little bit peculiar, because they ought to be involved in the actual planning operation at some stage or other. The second factor is that the modern design of houses does not include many of the features that you get in other countries for water servicing and safety. What are your views on these points?

Tony Smith: Absolutely. Customers would find it odd if the planning system was encouraging the building of houses where water was scarce. They would find that odd. I think you are right, that that is not necessarily a major issue that is taken into account in choices as to where a large-scale development takes place. In some of the areas where housing is developing, although it is not developing as quickly at the moment because of the economic situation, there are various initiatives by water companies and new entrants into the water sector to improve the water efficiency of homes. That may not be done as actively as it could, but that is one way of reinforcing the messages customers have.

It is also quite important to use those water-efficient techniques in homes in conjunction with customer behaviour change. If you just put in low-water-use facilities, there is evidence that, unless you get the behaviour change as well, customers might come in and just say, “I’m not happy with that”, and start replacing the equipment with equipment that is not water efficient. So you do need to do the two things in conjunction. There needs to be recognition that there is an issue here and that the planning system needs to be consistent with it, and then—as I said before—if you can give customers straightforward messages about how they can help, they will and they do.

Q156 Baroness Parminter: You think the EU’s view in terms of demand management is to act as a megaphone. I think there are some other issues around the EU’s role. If you look in other sectors, particularly the energy sector, you see how consumer behaviour can be changed and the whole approach around carbon foot-printing is very developed. Do you not think there is a role for a common standard and a common approach towards foot-printing? We did ask you about that in our questions, but you did not respond to it. Should Europe be taking a stronger role in devising a common methodology in the process, so that consumers can look at products and identify those that are more water intensive than others?

Tony Smith: If it reinforces the points that we are making about helping customers realise this is an important issue, then I think that would be a beneficial development. I think that I agree. However, if it was viewed as an imposition that was not appropriate to the circumstances on the ground, then I think the reaction would potentially be more negative. I think there is scope because, as I say, the customer segments you see in terms of receptiveness to energy saving not surprisingly match very closely the segments that we see on water saving. It is true to say that the customer’s view about water saving is slightly behind energy, partly for the reasons you said, but I think that things are more developed in the area of energy. Essentially, the customers who are most receptive to saving water are the same people who are receptive to saving energy. The people who are slightly less so are slightly less receptive to saving energy, too. So there is an opportunity to piggyback those two developments. Certainly, most of our research—and I think most of Defra’s research as well—suggests that the majority of customers, not all of them, are very receptive to playing their part. If those sorts of frameworks can help them to do that, then that helps.

The Chairman: Lord Caithness and, Committee Members, we probably have three more questions, so let us try to do them in about five minutes each so as not to keep our witnesses too long.

Q157 Earl of Caithness: I want to talk about the EU Blueprint and the Water Framework Directive. Have you given any evidence to the Commission about their proposals?

Tony Smith: I will hand over to my colleague.

Deryck Hall: Yes, we have supplied a report to the consultants who are working for the Commission on developing the Blueprint. We can provide a copy of that to you if you would like.

Earl of Caithness: That would be helpful. In that report do you specify, in a way that you have not done in the evidence you have given to us, what you really want? What do you not like about the current Water Framework Directive? You have talked about wanting a bit more flexibility. Agreed, any river has to meet certain standards. Do you want those standards altered? Do you want to take out some of those standards? I have no idea what your position is. You talk very generally. Let us get specific. What do you want changed in the current Directive and what do you want in the new Blueprint?

Deryck Hall: In terms of the Water Framework Directive, as Tony Smith has mentioned, the “one out, all out” principle seems to us to be preventing the achievement of good ecological status or good ecological potential. Dr Paul Leinster, who is the chief executive of the Environment Agency, has gone on record in saying that biology trumps chemistry. By that he means that if a river is teeming with life and that life is what would be expected to be in that river, the fact that there is a chemical parameter that is being exceeded should not necessarily suggest that that river should be downgraded to moderate status or below. It should be classed as good ecological status. It has the life there within it. We would support that view. We think there should be greater flexibility around the status or the grading of our water bodies. I think we would move far up from the 26% we have now, beyond the 30% that is expected by 2015 and maybe get towards, although we will never reach, 100% by 2027 because some of our rivers are particularly difficult to restore to good condition.

Q158 Earl of Caithness: What is the point of setting standards if you cannot get 100%?

Deryck Hall: There are within the Directive some caveats around disproportionate cost. If you are going to run a scheme that is going to be so costly that it is going to have major carbon impacts and lead to a major increase in customers’ bills or taxpayer funding or bills from local authorities, what is the point of doing that when, even if you were to do that scheme, it probably still would not reach the good status? Yes, I think you should have standards. You should be aiming for a high degree of achievement, but I think we have to recognise that in some cases water quality in some localities will not be achieved at the levels that the Water Framework Directive would like it to be.

Q159 Earl of Caithness: Do you have a definition of water quality that would be acceptable throughout Europe for all the member states but does not include the specific chemical requirements that are in the existing Water Bill?

Deryck Hall: The answer to that is no.

Earl of Caithness: How do we get to it? If that is what you want, how are you going to get to it?

Deryck Hall: This is a dialogue that we will want to have with the regulators, with the Environment Agency and with Government. I do not think it is really for us to determine what that water quality should be. We are just concerned that the “one out, all out”

principle can lead to a failure on the part of the United Kingdom to meet the Water Framework Directive standards. That seems to be wrong to us, in the sense that there are difficulties in achieving these standards because the standards themselves seem to prevent achievement almost.

Tony Smith: Can I add to that? We are not scientists so I do not think it is for us as a consumer body to specify what the standards should be that demonstrate quality in rivers and other watercourses.

The other point that we would also make, though, is that in making choices about environmental improvements and standards, to some extent the Water Framework Directive and other directives compete with other things that, certainly in the water industry in England and Wales, customers have to pay for. It is not just a Water Framework Directive that customers are paying for. They are also, importantly to them, investing in the existing infrastructure that keeps them getting a safe, reliable water supply and a sewerage system that works. I suppose our concern about directives from Europe is that they have not taken account of the bill impact on customers when those decisions have been made, and that is not an issue where you can look at a directive and say, “Is this going to be cost beneficial?” That may hopefully come out with the right answer, “Yes, it is going to be cost beneficial”.

There is a secondary question, which is: what impact will this have on the bills of customers who are paying for this and how do you trade off that versus the other things that those customers are having to pay for? We mentioned at the start that customers are prepared to pay maybe 1% above RPI, if you are lucky. It is not just the Water Framework Directive and other European directives that are being funded through that process. There is a lot of funding that goes on the other things, too. Our concern is that in future the bill impacts on water customers in England and Wales, and probably elsewhere in Europe, need to be taken into account as you decide which standards you are going to pursue and at what speed are you going to pursue them. Interestingly, I think we pointed out in our evidence that we are pretty much alone in Europe as being a consumer body that looks after water customers. Nowhere else in Europe does that exist, so there is a danger that water customers across Europe are seen as a bit of a soft touch.

Q160 Baroness Sharp of Guildford: The European Commission has identified a number of economic instruments as part of the range of possible measures to use to protect water resources. I wonder whether you could tell us what role you see for economic instruments in future water quality, and whether you agree with the proposed measures that have been set out in the water White Paper to revise the abstraction regime, to ensure that water companies take account of the environmental impact in abstraction.

Tony Smith: Economic instruments have a role to play. As we have seen, the price that customers pay in the bill has quite an effect on their view about their receptiveness to the industry and its regulation. That suggests that you can use economic instruments to reinforce the points that you are trying to make. But we have to be careful about overestimating their role for two reasons. One is the work that we have done on customers and their views about things: they are not necessarily receptive to some of the things that you might think are rational developments, such as certain developments on tariffs. So as regards seasonal tariffs, so-called rising block tariffs, where customers pay differential amounts for more and more water, they tend not to be very responsive to those. A number of companies have carried out trials of the new tariffs and have found customer reaction has been not particularly strong.

The other point is at a more theoretical level. The evidence around the price and demand elasticity of water does not suggest that customers will necessarily react very strongly to economic measures. That is not to say that we should not be looking at those because, as we talked about before, the issue around allocating water and finding different ways of abstracting and the abstraction regime I think is right, but it is whether you are trying to do that at an average level for all customers, so improve things for all customers, or whether you are trying to charge specific customers or specific customer groups on that basis. That is the difference. We would definitely agree with the former. We are less clear that actually tariffs are going to give the required degree of efficacy in terms of saving water.

Baroness Sharp of Guildford: Of course, tariffs do require metering in this sense.

Tony Smith: Yes.

Q161 Baroness Sharp of Guildford: Do you still have a big problem with unpaid debts on water?

Tony Smith: Yes.

Baroness Sharp of Guildford: Am I right in thinking that you are never allowed to cut off any customers?

Tony Smith: Certainly for domestic customers that is true. Although not entirely as a result of the ban on disconnection but partly as a result of that, the amount of debt in the water industry is rising. Now it accounts for about £15 on each customer's bill, which goes back to the importance of addressing the affordability problem because some of those customers actually cannot pay or they are not very good at paying and need help, and some customers are choosing not to pay. If you can help the customers who need the help then, of course, you can be tougher on those who do not. The problem is at the moment identifying who is who, and also there is not yet sufficient help for those customers who cannot afford to pay.

Q162 Baroness Sharp of Guildford: You were saying that customers have resisted tariffs that go higher for those who are bigger consumers of water, and yet actually if we are looking at this issue we want to discourage those who are using drinking water for watering their lawn throughout the summer, and this sort of thing. Therefore, there is quite a case for having a rising tariff.

Tony Smith: There is, although a lot of customers who are actually using lots of water are actually using it for very basic reasons because they have large families. Individually, they are using very little water; it is just collectively in their household they use a lot of water. That is why if you say to those customers, "Reduce your demand", they cannot. They are already using very low amounts of water.

Baroness Sharp of Guildford: Yes, which comes back to what you were saying that there are advantages in being able to differentiate between customers and come down more heavily on those who actually should be able to afford it.

Tony Smith: Yes.

Q163 Baroness Byford: My Lord Chairman, I apologise to the Committee because I have to go at 12 noon. Can I come back on that because, when we took the Water Bill through, one of the big discussions we had was around those who could pay but do not pay and those who could not afford to pay and providing some protection. But it is some time ago. You are

talking about several years. What progress have you made and where do you see it going? It is not a short space of time. My memory is not good, but I would say it was six years ago since that Bill came into being.

Tony Smith: What progress have we made? The beneficial things are that many of the water companies are actually doing quite a lot to help those customers who are in debt. With our help, the Government is now proposing a set of principles for social tariffs. This is where one set of customers help other customers through their bills. That will help in part, but it will not resolve the problem at all. The debt problem has risen, partly because bills have risen, and the affordability proposals in the water White Paper will not go far enough. I think there was an independent review of tariffs done about two years ago, which identified probably a £400 million problem in terms of affordability. The proposals for social tariffs could address maybe £40 million of that problem. That just shows the gap in resolving that affordability problem. It is a problem that still has not gone away.

Q164 Baroness Byford: Forgive me, but it sounds as though it is a problem, which has not been addressed six years down the line. It is not those that cannot afford it that I am so worried about—I think there are ways in which you can do that—but pursuing those, or having any way you can pursue those, who do not pay.

Tony Smith: It is slightly more complex than that. There are some customers who actually could pay but they are just not very good at organising their money. They also need help, too, but they could potentially pay their bill. That is where the water companies can play their part by more actively getting in discussion with those customers earlier, and that is what we encourage them to do. But regarding the tools that the companies have, they do have tools but they clearly do not have the disconnection option, so there is an outstanding question there.

Q165 Lord Cameron of Dillington: I would just like to turn to governance. Clearly, water customers are one of many stakeholders in river basin management. I was wondering whether you could tell me to what extent the current arrangements in England and Wales match up to your wishes for consumer involvement. What specifically should the EU do to give you the governance you want? Will the proposed customer challenge groups be sufficient for engaging the public in water company management in the future?

Tony Smith: We think the customer engagement groups will definitely help because it will enable the water companies, their regulators—by which I mean mainly the Environment Agency, Natural England and the Drinking Water Inspectorate—and local stakeholders, environmental groups et cetera to try to create a plan for the next 25 years for each company, and also, for the next five years within that 25 years, a set of proposals that hopefully address the requirements of the various directives and legislation and also fulfil the customers' desire for a reasonable price increase. That is the objective.

Let us assume that water companies do that with the various stakeholders; the other part then is communicating with those customers what it is they are getting for their money, which is a very, very important part of it. The role of the EU is to lay out useful frameworks and I think it is also to take account—a joining, if you like—of the bottom-up and the top-down. I suppose our one concern about the way the system works in England and Wales is when you start doing these customer challenge groups, as we call them in the water sector, to some extent part of what the companies have to deliver has already been decided. A big chunk of the programme is already built into legislation in England and Wales, so they have no choice in the matter. That means that if they cannot produce a plan that customers will

find acceptable, it tends not to be the directives that give, it tends to be the things that matter to customers that give. It might be leakage investments or sewer-flooding investments; hopefully it is not the maintenance of the system, though it could be. It could extend the maintenance of the system longer than would be healthy. That is where we would like to see a joining, I suppose, of what is coming out of Europe to the bottom-up to try to find a way of making sure that all these improvements are made in a way that customers will accept, and is not squeezing out the things that customers really value and helps their view of the legitimacy of the system.

Q166 Lord Cameron of Dillington: Do you accept that customers are one of many stakeholders, including environmentalists, navigators and all the rest of it?

Tony Smith: Yes.

Lord Cameron of Dillington: Therefore, it is going to be balanced by all those factors.

Tony Smith: Yes, absolutely, I accept that point, but going back to the point about the Water Framework Directive, they have also taken more than 80% of the value of what has been paid for in the last tranche of river basin management plans. They are actually major contributors so far to the Water Framework Directive. So, you are right, they are one of a range of voices, but they are paying the bill so we do need to listen to them and we do need to make sure that their requirements are satisfied.

The Chairman: Thank you very much. That is very helpful and thank you for coming in.

Dr Hadrian Cook, Laurence Smith, Dr Dylan Bright, Alex Inman, Dr David Benson and Professor Andrew Jordan —Written evidence

Dr Hadrian Cook, Laurence Smith, Dr Dylan Bright, Alex Inman, Dr David Benson and Professor Andrew Jordan —Written evidence

[Submission to be found under David Benson](#)

Department for Environment, Food and Rural Affairs (Defra)— Written evidence

Introduction

- (i) In January 2010, the Commission announced it was to develop a Blueprint to safeguard EU waters. Whilst the EU has already developed a fully fledged water policy, the Commission believe that the achievement of its collective aims is far from sure due to a number of old and emerging challenges, namely water abstraction, land drainage, and dams all of which can reduce water quality and increase water scarcity. The Commission therefore believes that a policy response is needed to address these issues and to develop measures.
- (ii) The Blueprint to Safeguard Europe's Water is the intended policy response with the aim to ensure good quality water in sufficient quantities for all legitimate uses. The time horizon of the Blueprint is 2020 since it is closely related to the EU 2020 Strategy and in particular to the planned Resource Efficiency Roadmap. The Blueprint will be the water milestone on that Roadmap.
- (iii) The Blueprint will sum up policy proposals and recommendations based on analysis to ensure the EU policy is fit for purpose to ensure good quality water in sufficient quantities for all legitimate uses. It will synthesise policy recommendations building on three on-going assessments:
 - the assessment of the River Basin Management Plans delivered by the Member States under the Water Framework Directive (WFD);
 - the review of the policy on Water Scarcity and Drought; and
 - the assessment of the vulnerability of water resources to climate change and other man made pressures.
- (iv) The Blueprint is expected to take the shape of a Commission Communication accompanied by its Impact Assessment, by a number of reports covering major strands (Land Use, Economic Incentives, Quantitative water resources use targets, Governance, Knowledge Base, Innovation, Global Dimension) and, possibly, by some legislative proposals, subject to the outcome of the ongoing assessments.
- (v) The UK strongly supports the development of a Blueprint and is keen to ensure that the fitness check process is undertaken properly – it provides an opportunity to thoroughly review existing EU freshwater legislation to ensure it is effective and relevant to addressing future challenges of population growth and impacts from climate change. Crucially, we want to ensure the ‘fitness check’ adequately reviews the current legislative framework and doesn’t just consider the effectiveness of the WFD. Although the issue of water scarcity and drought is important, we don’t believe the case has been made for further EU legislation. The UK also believes that better integration of water objectives into other EU policy areas is needed if we are to effectively implement the WFD.

Response to Questions

Strategic Objectives of EU freshwater policy

- The Commission states that the aim of future policy should be to ensure a **“sustainable use of good quality water in the long term”**. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?
- How adaptable to emerging new challenges is the current policy framework likely to be?

1. We face pressures from climate change, an increased demand from a growing population and changing lifestyles – all of which could see an increase in the demand for water. It is right for future policy to focus on securing sustainable water resources as well as an effective wastewater system to cope with the inevitable increase in demand.
2. In the UK, water resources planning looks ahead 25 years so as to give sufficient foresight to adapt and plan. Given the long lifespan of many assets such as reservoirs, many water companies consider that planning for even further ahead is the only way to deliver the most cost effective and optimal schemes. The main drawback to planning too far in the future, however, is that there is greater uncertainty. Therefore it is suggested that European policy should look ahead to at least 2050 with flexibility to adapt.
3. Autonomy and flexibility is built into the WFD which can be useful for adapting to emerging problems, however, there are some issues where further amplification by the Commission would be useful. For example, the drive for securing new renewable energy sources has implications for water use and water quality and it is important that there is increased coherence between these areas in future policy development.

Adding value

- How and where can the EU add value to the efforts of Member States in freshwater policy including issues relating to financing?
- What aspects of the policy are best dealt with at Member State or regional level?

4. The EU has a key role to play in ensuring that the implementation of freshwater policy is leading to environmentally sustainable solutions.
5. The EU is well placed to facilitate exchange of information between Member States on managing water scarcity and water efficiency initiatives.
6. England’s Rural Development Programme (RDPE) partly funded by the European Agricultural Fund for Rural Development remains a source of funding for agricultural water storage.
7. The Member State or regional level remains the most appropriate level for socio-economic issues of allocating available water to abstractors with the exception of places

where water systems cross national boundaries and hence raise issues of water allocation between Member States.

8. Droughts (notably 2003) and the increasing imbalance between water demands and supplies (water scarcity) across large parts of Europe have prompted various Member States to try to secure further European legislation to address these issues, beyond the WFD. Whilst water scarcity and drought is an issue of increasing importance, we should be wary of assuming that additional EU level action, on top of the WFD, will be the best way to tackle the problems we face. The UK has a robust regulatory framework that enables Government to manage water resources during droughts, including actions to balance the needs of abstractors and the environment and to protect the public water supply.

Future policy

- In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?
- What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

9. The UK wants EU freshwater policy to be effective in terms of delivering the outcomes desired, not least as a contribution to meeting the objectives of the WFD but also Urban Waste Water Treatment and the Nitrates Directive. This would be a crucial input into the development of the Blueprint. Some of the older directives have been in place for 20 years and in this changing world we must ensure they are fit for purpose and in line with our current policy priorities.
10. It is essential that the EU's policies work better together in support of our common objectives. Better integration of water objectives into other policy areas is needed if we are to effectively implement the WFD. We therefore welcome the role that agri-environment schemes, under Pillar 2 of the CAP, can play in delivering these objectives, but also the provision of ecosystem services that are to be addressed through the development of the Blueprint.
11. All droughts differ and there needs to be flexibility to react to the specific circumstances of a drought and the impacts it causes. In 2007, the Commission produced its communication on water scarcity and drought, which sets out policies to address the issues. We believe this is sufficient. We have responded to various annual questionnaires since 2007 on steps taken in the UK, and the Commission has produced annual reports as a result.
12. Equally, the Natural Environment White Paper (11 June 2011) announced that changes were needed to the water abstraction regime because the current regime was not efficient at protecting the environment and meeting our needs for water particularly given the challenges of climate change and increasing demand for water due to population growth. The Government committed to reform the abstraction regime to

provide clearer signals to abstractors to make the necessary investments to meet water needs and protect ecosystem function.

13. We agree with the importance of promoting awareness of water footprinting as a way of raising understanding about the “hidden” impact that products can have on water availability down the supply chain. If we consider the UK’s ‘water footprint’ as a whole, for example, 62% comes from the products that we import e.g. water used to grow crops for food and clothing overseas¹⁴. So our consumption of food and clothing in the UK heavily relies on good management of water resources and a secure supply of water in other countries.
14. In addition, we would support the assessment of the water footprint of products. Water footprinting can be a useful tool for businesses to better understand its water impact down their supply chain, and help to identify and manage any risks to its water resources. Operating in water scarce regions can present a significant physical, reputational, or financial risk to a business – so better understanding what these risks are and how to manage them is important.
15. If companies were to then label products with the ‘water footprint’ – this would rely on a robust and consistent assessment methodology to ensure any claims were a fair and accurate portrayal of the true impact. The methodology for water footprinting, however, is insufficiently mature at the present time to support labelling. The International Standards Organisation (ISO) is currently developing an international standard for water footprinting. This standard is building on current approaches to measure water impact beyond simply a volumetric measure (e.g. considering water stress, water quality etc), but is not expected to be published until at least 2013.
16. As the impact of a ‘water footprint’ entirely depends on the local environment, variations in water availability according to season and ecology can make it difficult to represent an accurate water footprint that remains relevant overtime. Product labelling, therefore, would also require frequent and very localised assessments of water use, potentially being very onerous to businesses.
17. So instead of product labelling, we would promote ‘water footprinting’ as a tool to allow businesses to identify ‘hotspots’ in relation to their water use as a first step to subsequently reduce and manage their supply.

Research and innovation

- How can the EU’s future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?

18. The EU’s future research programme looks set to significantly help to deliver and shape EU approaches to sustainable freshwater management. DG Environment’s plan for supporting studies and assessments for the Blueprint to safeguard Europe’s Waters and other complementary EU research programmes reveals bold, outline plans for comprehensive and far sighted research, designed to cover all aspects of the Blueprint.

¹⁴ Chapagain, A. K. and S. Orr (2008) UK Water Footprint: The impact of the UK’s food and fibre consumption on global water resources, Volume I, WWF-UK, Godalming, UK. http://www.wwf.org.uk/filelibrary/pdf/water_footprint_uk.pdf

Particularly challenging areas include: practical methods for ecosystem service assessments, better integration of water resource assessments, climate change impacts on the water environment, development of a common integrated land use and hydrological modelling platform, and accounting for embedded water.

19. The UK is currently determining how to engage in this research both in terms of shaping it and its role in joint delivery and knowledge exchange.

Other policy areas: agriculture and cohesion

- How should other EU policy areas notably the Common Agricultural Policy and cohesion policy be used and adapted to the needs of sustainable freshwater management?

20. As mentioned above, it is essential that the EU's policies work better together in support of our common objectives. Better integration of water objectives into other policy areas is needed if we are to effectively implement the WFD, Europe should seek to develop a low carbon, resource efficient, climate resilient economy.

21. Successive reforms of the CAP have set a direction of travel towards greater market orientation and agricultural competitiveness and a greater focus on the delivery of public benefits in return for CAP expenditure. The UK wants to see the acceleration of this process, promoting a stronger role for the industry in the effective delivery of public goods particularly by implementing land management uses and practises that mitigate against climate change and protect vital natural resources such as water.

22. A smaller overall CAP, with a greater proportion of funds directed through Pillar 2 is consistent with achieving our objectives for adapting to the impacts of climate change with the CAP. With national and EU budgets under pressure we should focus on the principle that public money should be used for the provision of public benefits, particularly environmental ones. Adapting to climate impacts, such as those on freshwater supplies, is not the sole objective of any specific Pillar 2 current measure(s), but has become a new and integral challenge for CAP as part of the Healthcheck in 2008. However, many current measures do provide adaptation benefit, e.g., options under agri-environment schemes that protect natural resources (e.g. fresh water), and "competitiveness" measures that promote better resource efficiency.

23. In terms of cohesion funding, sustainable water management already falls within the remit of cohesion policy and is eligible for funding from the Cohesion Fund (for large infrastructure projects) and the European Regional Development Fund when a Member State chooses the appropriate programme priorities. For example, the 2007-2013 Structural Funds priority theme list includes management and distribution of water (drinking water), water treatment (waste water), integrated prevention and pollution control, and mitigation and adaptation to climate change, under all of which freshwater management projects could be undertaken.

24. Member states should have the flexibility necessary to invest EU structural funds in sustainable freshwater management where this is in keeping with their own domestic investment priorities and helps to deliver the Europe 2020 goals. The UK believes that

Member States should continue to self-determine how to implement a strategy for sustainable growth.

25. Many infrastructure projects across Europe will impact on or rely upon water supplies. Under current Structural and Cohesion Fund Regulations, funding could be available for major infrastructure projects through the Cohesion Fund, or through the European Regional Development Fund. The Commission is expected to produce its proposals for new Regulations for cohesion funding for 2014-20 later this year, and this is expected to include a proposal for a 'Connecting Europe Facility' to support major infrastructure projects. As part of the assessment of the economic viability of this type of project, Member States' Managing Authorities should ensure that climate resilience (including the potential changes in freshwater supplies) is considered where appropriate. This will help to maximise the positive impact on economic growth and minimise the negative impact on the environment.

19 September 2011

**Department for Environment, Food and Rural Affairs—Oral evidence
(QQ 279-307)**

Evidence Session No. 11.

Heard in Public.

Questions 279 - 307

WEDNESDAY 7 MARCH 2012

Members present

Lord Cameron of Dillington (Chairman)
Earl of Arran
Earl of Caithness
Lord Giddens
Baroness Howarth of Breckland
Lord Lewis of Newnham
Baroness Sharp of Guildford

Examination of Witnesses

Richard Benyon MP, Parliamentary Under-Secretary of State, Natural Environment and Fisheries; **Chris Ryder**, Deputy Director, Water Availability and Quality Programme; and **Gabrielle Edwards**, Deputy Director, Water Availability and Quality Programme, Department for Environment, Food and Rural Affairs.

Q279 The Chairman: Good morning, Minister. Thank you very much for coming to see us. Apologies from our Chairman, Lord Carter—I am afraid that you have the B team today. Thank you also very much for agreeing to give us a bit more time than was originally planned. I know that you know all the formalities, but I think that for the sake of procedural form I have to go through them all: you have a list of interests that have been declared by Committee Members; this is a formal evidence-taking session, which will be on the public record and the parliamentary website; and you will be sent a transcript, which you can revise, and the session is on the record and being webcast live—although I am almost certain that there is no one out there listening. Put it this way, we say that every time and there is never a flood of e-mails saying, “Hang on a minute, we’re listening”. Could I ask you to start by introducing your team? That might be helpful.

Richard Benyon: Absolutely. Thank you very much, Lord Cameron. I have Chris Ryder and Gabrielle Edwards, who are both deputy directors from the water programme at Defra, and both were instrumental in the production of the water White Paper.

Q280 The Chairman: Good, thank you very much. Do you have any introductory remarks that you want to make, or shall I go straight into the first question?

Richard Benyon: I am keen to work to your agenda, save to say that this element of the water White Paper was a real priority for me and for us. We think it is a really important piece of work, which will see great benefits to river environments in years to come.

Q281 The Chairman: Thank you. Perhaps I could ask the first question, which is really about the water environment. The Secretary of State is on record as saying in the White Paper, “The privatisation of the water industry has been a success story”, which I would agree with to some extent, but she almost goes on to admit that the quantity or quality of the water environment has not been. I wonder whether you could say what you see as the main challenges to be addressed to safeguard the water environment. Bearing in mind that we have not only a short-term problem in the south-east over water shortages but almost certainly a long-term problem there as well, should the Government be injecting more urgency into securing future water supplies?

Richard Benyon: Water privatisation was a great success in terms of its ability to unlock investment, to see a coherent, stable basis for investment by water companies in resources that we really need, and to improve the resilience of our water networks. On the health of our rivers, however, I do not think that we should be at all complacent. Around 26% of rivers are what are referred to as fully functioning ecosystems, and there is a desperate need to improve this situation. This is quite a big issue at the moment because of your accurate description of what is going on in the south and east, and in certain other parts of England. We have to use this to try to change people’s awareness and their behaviour. There is an urgency to what we need to do.

Prior to this winter, and prior even to last winter, I have been absolutely convinced that we need to do a lot more on abstraction. I come from a part of the country that is deeply affected by drought. One of the WWF “rivers on the edge” flows through my constituency and it is dry in large proportion now, so these are serious worries. Moving forward, we can address a lot of the problems facing rivers by addressing abstraction and water quality issues through pollution. We have set forward a plan, which I think will work and I am very excited about. I wish we could be in a position this summer to start to see some of these benefits, but I fear that the impending drought will make that more difficult.

Q282 The Chairman: There was an article in the paper the other day about the Secretary of State meeting the water companies, obviously mostly about water shortages. Did anything emerge from that?

Richard Benyon: We had a drought summit last week, which was the third drought summit we have held. It sought to make sure that government, and indeed all the players in this, are doing everything they can. The good news that came out of it was that there seems to be general acceptance across abstractors—that is, water companies, agriculture and others—that they are working well with the Environment Agency. The Environment Agency is being fleet of foot to try to make sure that where there is water, it is being used properly; that where consents are required, they are issued speedily; and that action is taken where needed by farmers sharing the use of water. On these sorts of things, the Environment Agency is working extremely very well.

I am really impressed with the approach of Water UK—the overall body for water companies—to greater connectivity. There is lots in the White Paper about that, but they are already doing some of this. They are also sharing information, so that water can

ultimately move from areas that have it to those that do not. I am always told, relatively anecdotally, that you can actually move water from Kielder to East Anglia using various water systems and different parts and pieces of infrastructure. An awful lot of connectivity exists, but we wanted to achieve having it on a more coherent and strategic basis. That is what we set out in the White Paper and why we want Ofwat, in the next price reviews, encouraging greater use of connectivity and bulk trading of water, which will see water moving to areas that need it.

Q283 Lord Giddens: Thanks very much for coming to talk to us. Can I just probe a little more on the success of privatisation? When you say it has been a success story, what comparison are you using—the past in the UK or in other countries? The performance of some other countries seems pretty high compared to the UK's. The UK has a very unusual system for water compared to most other EU countries, so I wondered what your criteria were. It would also seem that we will need more planning in the future because of the lack of integration of regional systems and the disparity between what is needed within different regions. That would seem to imply a moving away from a straightforward privatisation model.

Richard Benyon: Without wanting to stray on to politics, I just do not think that £90 billion-plus would have been accessed from a state-owned water industry. The water boards, as they then were, would have had to have queued up outside the Chancellor's office with the health service, pensions, the Armed Forces and everything. There is no way that we could have geared state funding of the levels of infrastructure improvements that we have achieved. The fact that no one in the mainstream political parties is now seriously talking about renationalising the water industry is a sort of given.

Can we do better in the future? Can we do better deals for the consumer and for water quality and the kind of things we are talking about here? I am sure that we can. There are three regulators of what are in effect monopoly industries: the Environment Agency, the Drinking Water Inspectorate and Ofwat, and we are constantly looking at it. Through our strategic policy statement for Ofwat, which we will publish in the future, for example, we are encouraging upstream management—to make arrangements with land managers to improve water quality, and to reward them for doing it. These are the kinds of things that we can see being really pushed in the future: private sector companies working with state regulators and with other actors in the whole business.

There is a really good opportunity now to attack the problems that we face: the very severe challenges of climate change, pollution and over-abstraction. I live in the here and now, and prefer not to dwell in my job too much on history. I am constantly told by the fishing industry, "If only Mr Heath had or had not done something". I always say, in a voice of exasperation, "I would not necessarily have started from here". However, this is where we are and these are the challenges we face, and this is where my department is really keen to move forward.

Q284 Lord Giddens: But would it therefore be fair to say that your criterion is what might have happened otherwise in the UK, rather than a comparison with other countries?

Richard Benyon: To be perfectly honest, Lord Giddens, I have not dwelt at particular length on where the water industry might have been if certain things had or had not happened. We are where we are, and there seems to be a collective political will across Parliament that we do not want to alter the structure of the water industry. There are things we can do on

greater competition and other matters, but on what we do on the structure and basic framework of the industry, and how it is regulated, we are sticking with what we have got.

Q285 Earl of Caithness: The Environment Agency, in its evidence to us, said that in urban catchment in particular it had not seen a proportionate or feasible pathway to achieve 100% compliance with good quality in all waters by 2027. Five little questions flow from that. What will our rate of compliance be by 2027? What do you think of the WFD targets? Why do you think the EU Directive has set targets that are impossible to meet at a proportionate cost? What would the costs be, and what would we need to do to make 100% by 2027? Finally, if the European Commission wants to alter the priority substances list, which it says it does, are you convinced that it is based on best science, and what will the cost to England and Wales be to implement that?

Richard Benyon: I might need to recap on some of those questions as we go through. The overarching philosophy—I do not want to be too high-blown about this—behind the Water Framework Directive is that we must comply with it because we have a legal requirement to do so, but that is so boring. That is so unambitious—so “processy”. We want to be able to comply with the Water Framework Directive because we want to. We want to ensure that our rivers are in a good condition—rivers that are a crucial element of a community’s sense of place and worth, and so vital for wider ecosystems beyond the narrow margins of a watercourse. There is the whole valley and catchment, and this is something that we feel very strongly about.

Will we comply to a 100% level? No, we will not. To comply with the provisions to 100% — I am looking to my officials to step in when I get this wrong—would require us to take some really quite impossible measures, but I will try to give you a clear indication as to how we will comply. The key objective within the Water Framework Directive is to aim to achieve good environmental status in water bodies by certain points. Our next measurable point is 2015; the next cycle is 2015 to 2021; the final cycle is 2021 to 2027. Importantly, there are big differences within the United Kingdom. The challenges and pressures within the Scottish river basin district, as you may well be aware, are completely different from what happens in, say, East Anglia. The Water Framework Directive is a framework for all to operate within.

Good environmental status is a description of a healthy ecosystem, but not a pristine one. If one element is below par it is sensible, as the Directive says, to take action to improve it. There is this concept of “one out, all out”: that unless you are complying across every feature, you are not complying across any. That is an important point. Your next question related to what changes—is that right?

Q286 Earl of Caithness: What will be the cost of complying? If England and Wales were to comply with the Water Framework Directive by 2027, what would the cost be and what would we need to do to meet that?

Chris Ryder: The question, as precisely put, is probably unanswerable because achieving 100% good status will not happen. The Directive is expressed in terms of aiming to achieve that status. The default objective is to do that by 2015; then there are provisions about disproportionate cost and technical feasibility, which mean in various ways that you can set lesser objectives or take longer to do it. The net effect of all that is our being asked to do something that is inherently quite sensible. It is ambitious in its declared aims but quite proportionate in saying that you can modify those, essentially according to practicality and cost. By that, I suppose we mean that the benefits need to exceed the costs.

Where we are going to get to is a little unclear, because there are so many things under investigation to determine what the measures are that need to be done. If you wanted a cost not of getting to 100% but of what it will be practicable to achieve, even that, to quite a high degree, needs to emerge from work still being done. But the impact assessment we did at the start of the first cycle said, rather tentatively, that by projecting forward and taking account of where we thought we could foresee the benefits outweighing the costs of what might emerge as needing to be done, we would probably get to something like 75% good status by 2027.

Q287 Earl of Caithness: What is the timing of the work that you have in hand?

Chris Ryder: The investigations that the Environment Agency is doing to reduce the uncertainties that were evident in the first cycle of river plans should be finished by the end of this year. They are going to clarify, where it was not clear, the exact status of particular water bodies. I hope that they will also elucidate much more what measures are needed in particular places, so that by the time we get to the second cycle of river basin plans, which those will inform and which will start in 2015, we should have a much better idea of the scale of what can be achieved.

Q288 Earl of Caithness: Minister, are you happy with the “one out, all out” rule, or would you like that to be changed in the Blueprint that the European Commission is going to bring forward? We have had quite a lot of criticism about that, so perhaps the bigger question is: are you happy with an aspirational directive rather than a specific directive?

Richard Benyon: I can understand why an aspirational objective is treated with suspicion by some groups, because it allows a sort of cop-out. I would have preferred to be operating to an achievable end. If that achievable end is to say that we will be 75% compliant, it may be an answer in itself. I would not want anyone to confuse the strange way in which some of these directives emerge and are imposed with any lack of ambition, because there is a keen ambition. I would like the opportunity at some point to come on to talk about our catchment-based approach, and how we think that is more effective than the river basin management plans which have been put in place, although those are really important.

Q289 Lord Lewis of Newnham: I am a little bit confused. You talk about attaining 75%, but who makes this judgment? Does anyone look at it from a general European point of view? It is all very well the UK saying, “This river is now 75%”, but someone else could say, “But by our standards it's not; it's only 50%” or something of that nature. There is the matter of relativity. I fully appreciate the remarks that you made about flexibility, but in many instances that moves us from an objective assessment to a subjective one. It strikes me that some of these things are basically unattainable. Take, for instance, a point that we have discussed on previous occasions: the phosphate problem. That is not going to go away in a short period of time, and it involves a tremendous amount of expenditure. Therefore, why bother? You are never going to get to 100% because the phosphate problem is going to be with you for many years.

Richard Benyon: There are other pollutants or factors, as well as phosphates, that are a result of historic activity. It will be hard to measure how well we are doing with those, and it will take a long time to deal with them. There is a subjective element but there is also a legal requirement to comply with the Directive. We are conscious that if we do not then the Commission can impose sanctions on us, and I am keen to avoid that. Chris, do you want to talk about the specific point about phosphates?

Chris Ryder: Just tracking back, there was a point about who assesses or decides the percentages that we are talking about. It is probably worth explaining that what is often called our level of ambition—reaching 32% at good status, by 2015, is not really an ambition that we declared but reflects what we found we expected to achieve when we worked out what measures should be put in place and would work. That is the level to which the work that we plan to do will take us. But a number of other things are being achieved alongside that, including the obligation not to let water bodies deteriorate from one status to another. There is a large amount of work in place to achieve that, which is quite challenging when new development is happening and new things are being put in place. A lot of things are being achieved that bring the kinds of benefits that come from environmental improvement by way of water bodies that are going to be improved through the actions being taken in many respects, but not necessarily reaching good status. On the question whether across the Community we are working to the same standards, there is quite a lot of work done in Brussels on a process seductively called intercalibration, which is about trying to ensure that the boundaries set by member states between the different status classes are consistent across the EU.

Richard Benyon: It is worth saying where we are in terms of comparables. We are ahead of other countries in that we have coherent plans in place, and we are in the middle order of batsmen in terms of results. Would that be right?

Chris Ryder: I think that that is about right from what we know across the Community. The other big question was about phosphates. My colleagues in the Environment Agency need to understand where phosphate failures in water bodies are leading to biological and ecological consequences so that there are ways to concentrate the action taking place in order to make a difference. For example, in East Anglia, where there has been a lot of work done by the Environment Agency and the NFU, it is possible to look much more deeply into the reasons for phosphate pollution and start to understand ways of addressing it. So it is a big problem but there are ways of addressing the important parts of it and trying to understand it better.

Q290 Baroness Howarth of Breckland: Minister, you keep saying to us that we need to meet the legal framework, which we all understand, but the Directive is under review at the moment. I wonder how you, as Government, saw yourselves influencing this. This Committee, looking at the whole issue of water, hopes to make helpful recommendations. I hope that, in the course of this morning, we have an opportunity to hear your excitement and ambition so that we can reflect it in our report, which will come to the Government to give you an opportunity to respond. I just hope that this morning we get some sense of what you would like to see Europe asking us in the UK to do much more precisely. We have seen that we are very different to many other countries across Europe, although we have some similarities. How do we get that reflected in the Water Framework Directive so that we can achieve what is best for our environment and rivers?

Richard Benyon: I will try to articulate that. I think that we are engaged to make sure that the Water Framework Directive comprehends those vagaries. We want the Commission and other countries to understand that we take it very seriously; we want to get somewhere and achieve something here. That is why we have really localised our activities, to try to reflect the point that you make about the United Kingdom being different and having different problems in different areas. That is why we thought that, in order to comply, the river basin management plans were too broad to be effective. They are good documents that were produced by extremely able people who understood the problems, but they tended not to be workable documents.

That is why, just over a year ago, we with the Environment Agency announced the catchment approach. We want the Commission to understand how it can be effective on the ground. It really comes down to the Government not having all the answers and finding out the problems with a river almost on a reach-by-reach basis, and using key organisations to assist us with that. That is what we are developing with our catchment-based approach. There are a certain number of rivers where the Environment Agency is hosting the catchment approach, others where they are supporting other organisations in those catchment and others where there is still work to do. We think that that is an exciting new approach and, taking your point, we really want the Commission to understand that this is an effective way forward.

Q291 Lord Giddens: My question follows up on the one I asked you before about practice across the EU. There is a Common Implementation Strategy. What is your view of implementation of the WFD generally across the EU? Are there examples of best and worst practice that you would look to? Secondly, what can we learn, if anything, for WFD implementation in this country from the experience of other countries? Is there a particular state that you would say has made a pretty good stab of it compared with others? We know that some have performed rather poorly so far and are in fact being sanctioned for their performance.

Richard Benyon: Overall, implementation of the WFD across the EU is, as you say, fairly mixed. About one-third of member states have achieved the key milestone of publishing their first set of river basin management plans by December 2009, and we were one of them. Nearly all member states have now published their first set of plans, which, in a sense, set the real foundations for implementing the Directive in adopting a river basin planning approach to managing the water environment. In terms of what that means for achieving the key objectives of water bodies to have a good status by 2015, as Chris has said there is still a lot of analysis to be done, but we look forward to seeing the Commission's formal report to the Parliament, due by the end of the year, which will give its view on implementation.

As for your second question, Lord Giddens, about implementation and lessons learnt—

Lord Giddens: It is also about what we can learn from other countries, as we are supposed to be doing a comparative study across the EU.

Richard Benyon: The Common Implementation Strategy came about partly in recognition of the implementation issues that people have come across in implementing older water directives and because of an ambition in the Commission and member states to get better at sharing information and supporting each other. Some of us are more expert than others. The CIS enables a transition of knowledge and information across the EU. You ask which the really virtuous countries are and which are not. I indicated that we are reasonably well placed with the processing element—that is, we have plans—and we are in the middle order in terms of the agricultural effects on water courses in the medium term. Ultimately, we believe that participating in the process should lead to less infringement proceedings against member states, which is better for everyone all round.

Q292 Lord Giddens: I was asking whether you thought that there are some countries and some practices that we could especially learn from.

Richard Benyon: Again, it comes down to comparing different factors. We have a relatively high population here. We are relatively intensively farmed compared with some other countries, so some other countries have an easier job in complying. Some of them have less developed agriculture industries and some of the historical activities that are impacting on

water quality now didn't take place there. Others have had more serious problems. I do not know whether either of my colleagues has a handle on which countries are the shining examples of virtue. We might not share with you in such a public forum the ones we believe to be the total villains.

Q293 Lord Giddens: If I can clarify, I did not mean that. I meant: what practices have come to light in this comparative exercise that we could learn from with regard, for example, to the overall ecological status of water in whatever area? We surely have to try to learn from best practice, wherever it is carried out.

Richard Benyon: That is what the rather clunkily termed Common Implementation Strategy seeks to achieve. That will reach report-back at the end of this year, when we will be in a better position to answer that question. Do we have any information at this stage?

Chris Ryder: There are two halves to this question. The Common Implementation Strategy is certainly a valuable exercise because it enables member states that have expertise in monitoring and interpreting scientific results, which certainly includes us on certain aspects, to take a lead in getting sensible approaches adopted to implementation. It is better to find a common way to develop an approach that works them to pursue lots of independent ones or somehow fall short because the right leadership was not given.

As far as catchment management is concerned, there are a lot of examples from across the world that we can learn from about how to do it. There are a lot of examples even in the UK, where catchments have been managed an integrated way.

Q294 Lord Giddens: Where? Can you say?

Chris Ryder: The Tweed is one good example. We are doing a lot of learning about what measures, particularly in relation to agricultural diffuse pollution, will work in particular places. We have a demonstration catchment project to test things out on the very local scale to find what works to prime the process. One of the working groups in the Common Implementation Strategy addresses agriculture and brings together member states in a way in which administrations can talk about both issues that need to be addressed and the ways to address them, such as targeting agri-environment payments and mobilising paid ecosystem services. A lot of learning is going on and we need to continue to learn to ensure that the approach to which we are committed at the catchment level really will work.

Q295 The Chairman: Can I just ask you about the catchment level? You say that you prefer a catchment management-level application of a plan to a river basement management plan because it is smaller and more detailed perhaps. In an ideal world, how would you see the Commission allowing that to happen? Would it be a sort of subsection of a river basin management plan, or would you want the Commission to ask every member state to plan on a catchment-level basis? How would you see the Commission encouraging that? Would you want it to encourage that?

Richard Benyon: I hope that the Commission, through this process, would accept that its role is to define the outcomes that we all want to achieve, and then leave it for member states to apply it in the way that best suits their geology, their voluntary sector and stakeholder groupings, as they require. We are blessed with having deeply passionate people, and you will all have come across them—whether they are in the wildlife trusts, anglers or rivers trusts. These are people who can be, or are being, a real game-changer in how we deal with these problems. I want the Commission just to see that what we are doing is essentially right and that we are achieving that, but ultimately to say, “Get on with it,

if that suits you”. I fully concede that this may not be the right thing for a southern Mediterranean state.

Q296 Earl of Arran: Minister, just touching briefly on the subject of relationships between your department, the Environment Agency and Ofwat—all with their fingers in the pie of water; and other organisations, too—it seems to be a recipe for chaos and confusion. Who sets the policies and priorities? Who is really in the lead on all this? In your opinion, is this structure really fit for purpose and fit for actual achievement?

Richard Benyon: I am not going to fiddle with the structure. I think it is the right structure. I think you are right that there has been a fairly confused policy landscape in the past. That is what this White Paper is all about. It is the Government saying, “We have a very clear view about water and how it should be managed. This is where we should be operating—promoting policy, legislating where necessary, assisting where we should in government, and recognising that the three regulators have a clearly defined role”. Just as it would set all kinds of hares running if the Government were to start interfering too much in the operation of one or more of the regulators, it would be equally wrong for them to start dictating policy. In terms of what we are trying to achieve here, the most important relationship is with the Environment Agency. It is a regulator but it is also a delivery arm of government. In that answer I am supporting your view that it may at times be confusing for people, but I think that it works. The Environment Agency is well led; it has a clear view about what the Government are trying to achieve and, despite the constraints of the spending round, it has produced a clear way forward on freshwater issues. So I am confident that it can deliver exactly what we want. The relationship between it being both a regulator and a delivery arm of government can be a virtuous one if there is a clear view, at the leadership level of both the agency and in government, about what we are trying to achieve.

Q297 Earl of Arran: Thank you for that. You mentioned the Environment Agency and I understand that in 15 of its pilots it is playing a more facilitating role. Is it actually capable of going about such a large culture shift? I think you are saying that it is capable of that in such a short timescale—but if it is not, what happens then? What are the alternatives? Let us be pessimistic for a second.

Richard Benyon: If we are failing, the opportunities open to government are: try and find some more money; but we are not going to do that this side of the end of this spending review, and I suspect that there will not be a huge amount after that; and there can be the very clear financial win of avoiding infraction fines, at the very least, and the wider economic benefits that we know come from having a better environment. Secondly, we can change the way we do things; we can change the priorities by stopping the agency and the Government doing other things, throwing the kitchen sink—if you like—at this problem, and ramping up the resources. I am convinced that this approach will work. Would I like more resources? Would I like to have twice the number of people working on this issue in the Environment Agency? In an ideal world, of course I would. I think that we can do it. I think that the Agency has the resources and has the clear direction. It is not the sole player and we sometimes have to move away from the institutionalised view that only the Government or their agencies can deliver this. Using other organisations is what is fundamentally important about the catchment approach. I am on record as saying that one of the blows we have suffered is the demise of FWAG—the Farming and Wildlife Advisory Group—in which many of us have been involved for many years. It was a key player in this. Someone from FWAG would be walking up the river with someone from the river trust and someone from the Environment Agency, and when a problem was identified the FWAG representative would

be the ideal person to go and talk to, say, a farmer and say, “Look. I think there’s a problem here. I think your cropping plan, if it was tweaked in this way and if you were to put this buffer along this watercourse, could resolve this problem”. It is about having a trusted intermediary, who is not the regulator but an effective and informed part of the team and who can make that change much more effectively than someone who comes from, in its broadest sense, government.

Q298 The Chairman: I would agree with that. “I’m from the Environment Agency and I am here to help”, has never been a very acceptable phrase in the farming world.

Richard Benyon: One of the really good things about the Environment Agency is the development of a concept of, “Yes, if—”; and all credit to Lord Smith and his chief executive on the way they have spread this culture. All of us, as MPs, get complaints about what government organisations do from time to time, but I think that this organisation is really positive in what it is trying to achieve here, and that will be absolutely key to its success.

Q299 Lord Lewis of Newnham: Could we turn to the Commission’s Blueprint. The Commission announced in 2010 that it was developing a Blueprint to safeguard EU water—that is, good-quality water in sufficient quantity for all legitimate uses. In your written evidence, you support the Blueprint, but you say that you, “want to ensure the ‘fitness check’ adequately reviews the current legislative framework and doesn’t just consider the effectiveness of the WFD”. What concerns you about the current legislative framework? Do you consider that the WFD is fully effective? What about the treatment of priority substances under the WFD? This concerns us as we have been looking at the position over priority substances, which in many instances dominate the criteria that you will use to assess water quality and things of that nature. Finally, we were presented with the suggestion, or fact, that the flooding situation has now been taken out from the environmental aspect and put into another division of the EU. We are slightly concerned about what is happening over flooding, and who is in control of it, and dealing with it as a whole.

Richard Benyon: On the first point, leading into your last point, all these things are linked. On the spectrum of dealing with water when it is too abundant, or the opposite, it is vital that these things are all linked. In government, it is under one department. The Environment Agency deals with flooding and drought. There is a coherence here, and we want to make sure that it is understood in Brussels. You asked some specific questions and I shall refer to notes because some of them are complex. You asked about our concerns. Our chief concern relates to the urban waste water treatment directive and the nitrates directive. The urban waste water treatment directive tends to be emission-focused, when perhaps there could be more emphasis on environmental outcomes. Our prime concern about nitrates is the prescription of the level in the directive, which means that we are not entirely free to deliver the objectives in the most appropriate and efficient way possible, and the cost-benefit analysis of key measures cannot be taken into account. That is of particular concern to some interested parties. We made those points to the Commission and other member states through the process known as the fitness check, but unfortunately it does not have much traction. The primary reasons for this are that the Commission believes that the existing framework has not been in place long enough to deliver the objectives that they were originally put in place for; in part this is compounded by the number of infringement proceedings that they are still processing for legislation that has been in place for 20 years. In addition, some of the older member states are reluctant to change the existing framework because of the investments that they have made. That is understandable but does not help when considering the effectiveness of the legislation. The Water Framework Directive is 10

years old, so it is relatively speaking too early to assess whether it is fully effective. When it came into place, it took a long time to get an understanding across countries, including ours, of what we are actually talking about. There is that understanding now and that we will see an acceleration of it being more effective, but it took some time to get an understanding and the requirements that the Commission sought to achieve. You asked about the treatment of priority substances. The intention of dealing with priority substances under the Directive is to protect surface water from harmful concentrations of chemicals that have been identified as posing a particular risk to the aquatic environment. The environmental quality standards for these priority substances are set by the environmental quality standards directive. Failure to achieve a standard in a water body means that the water body cannot achieve good status under the WFD, so it is really important that we understand that. The Committee is probably aware that the Commissioner recently published a new proposal, with a requirement to do that every four years. We have expressed significant concerns within the proposal. Some of the substances and standards proposed are likely to require significant further investment in waste water treatment or widescale application of exemptions within the WFD, the latter of which undermines the overall objectives of what we are trying to achieve. We think that we are on the right way forward here, but a sudden imposition of new standards could have quite an impact on what we are trying to achieve. In terms of the overall intention from the architects of the Directive, let us get on with what we are doing, which we think will be effective, rather than coming in and imposing other standards in a highly technical discipline half way through us trying to implement the original Directive.

Lord Lewis of Newnham: Thank you very much. That is very useful.

Q300 Baroness Howarth of Breckland: One issue raised by a number of witnesses was how to get to the pharmaceutical and other pollutants at the front end rather than looking at it when they get into the river. How are your department and others working to ensure that those pollutants do not get into the rivers in the first place and calculate how much it costs to clear it up? That is a question that we have not got to, which is rather important for your strategy.

Richard Benyon: There is a lot being done in talking to industry. I have also been talking to MEPs about this with regard to certain legislative directions. What weapons do we have against this? First, we have increased regulation, transposing what comes from the EU in a highly regulated way. Secondly, there is agreement by consultation. Linked to this is the concept that the polluter pays. Who is the polluter here? That is an intellectual point that needs teasing out. Is the polluter just the company making a product that we all use, or is it us as consumers, who use it in our daily lives and flush it down the sink or drain? Who ends up paying for that? Too often it is the consumer, because the water company has to spend a lot of money cleaning up that water, which is charged out in our water bills. There is some interesting intellectual debate in working out who the polluter here is, and getting a clear understanding of the impact that they are having and how we get to them. It is a moving issue.

Q301 Earl of Caithness: Just to follow up Lord Lewis's question, are you satisfied that the scientific base for the categorisation of priority substances, and the revision that the European Commission proposes, is sound?

Richard Benyon: Chris may have more facts than me on this, but it is something that we have to challenge. In everything that I deal with in Defra, where an assertion is made from what is sometimes quite a remote position from what is happening on the ground, we have to be able to challenge and have an open conversation, whether it is with the Commission in

this case or another part of government in another case, to make sure that what we are doing is both proportionate and value for money. We could spend everything that we are spending on trying to implement this Directive. With everything that we are doing through our discussions with Ofwat about what it should be saying to water companies for the next price review period, we could focus all those resources on a particularly narrow strand to follow a particular view about certain deemed pollutants. The perfect would become the enemy of the good. What we think we are achieving here is a holistic view of what the Directive is seeking to achieve and what we want for our environment, and we should be allowed to do that. Is there anything, Chris, on the science that you could add in response to Lord Caithness?

Chris Ryder: I do not think so on the spot. The real issue is that the Commission has jumped straight for the proposition that we put in place treatments that would really be quite expensive if you had to meet the standards that are set for things in quite common usage. The extra substances involve an anti-inflammatory drug or oral contraceptives, so they are ubiquitous. There are serious issues over the extent of the assessment that has been done, and the costs that you would have to incur in meeting these standards through putting treatment in place. No thought has really been given to the possibility of applying controls further up the line on the usage and disposal of things.

Q302 Baroness Sharp of Guildford: Can I take us on to the issue of integration of EU policies with other policies? In your evidence, you say that the better integration of water objectives into other EU policy areas is needed if we are effectively to implement the WFD. You talk about the CAP and cohesion funding in particular. You have now seen the October 2011 CAP reform proposals. How far do you feel that our concerns about water policy are sufficiently integrated within them? What are your views on ideas about paying land managers for a wider range of ecosystem services than those such as clean water, biodiversity and landscape? We had some evidence from the Westcountry Rivers Trust about what is happening around the Tamar, which we found quite convincing. At the moment, the water company is paying the farmers to deliver services. In some ways it is the opposite of “the polluter pays”, because the farmer is the polluter but is being paid for services that the water company is providing. It is an interesting example, but is possibly the opposite way around. What do you think needs to be done in order to ensure that cohesion funds work better in support of water objectives?

Richard Benyon: Your middle point about farmers and whether the polluter is actually paying was an interesting one. You could argue it from the other end and say that the cleaner is receiving payment by changing their perhaps long-established farming practice. There may have been a certain stocking rate of hefted cattle or sheep on that bit of upland for generations. We are asking them to make a change in order to get a different environmental benefit. That is what has happened with United Utilities and its SCaMP project, and what you were perhaps referring to when you talked about West Country and what South West Water is doing with farmers on Dartmoor, as well as many other examples that came about really from the previous price review process.

Gabrielle Edwards: They funded a lot of investigations under the last price review.

Richard Benyon: We want to see that moving forward. One of the things that we have to be absolutely clear about is that when you build a piece of concrete and steel to have an effect on water quality, you can measure the water going into it and the water going out of it and can have a very clear view of the success of that asset. With upstream solutions it is harder to define whether they are a success or a failure. Some of them will undoubtedly be

less successful than others. As a regulator we have to take a view on whether this is a direction of travel we want to go in, and I am absolutely convinced that it is. It joins up everything that we are talking about today. We have to be more accepting of the fact that there will be success and failure, and that harder to measure. But our understanding of what works and what does not is improving all the time. This is a very exciting way forward.

In terms of CAP, water policy concerns have been integrated partly into CAP reform proposals. Improving water management is included as one of the priority areas under the rural development regulations. There is a proposal for the Water Framework Directive to be included within cross-compliance and the ecological focus area under the greening proposals, which would provide benefits for water quality. It is the effectiveness of each of these mechanisms that concerns me. Whether they will depend upon the final outcome of the negotiations and how they are implemented is absolutely crucial. I do not lead on CAP issues—that is Jim Paice and, obviously, Caroline Spelman—but we are making sure that these issues are fully understood and integrated into the UK's position. Once the final allocations are agreed within Europe, we will have to be mindful of the need to integrate what we are asking of farmers to help them to deliver multiple environmental benefits. Water will be part of that; biodiversity, climate change adaptation and all these issues will be vital to support what we want to create, which is a sustainable farming industry, and the wider rural economy issues, which are so fundamental to that.

We talked a bit about paying land managers for wider ecosystems services issues; I ask my colleagues to chip in if they think that I am missing anything. Payment for ecosystem services is a direction of travel that we are very keen on. We are very keen to push it both in the way I have described with other water companies, and also through our agricultural policies and our agri-environment programmes. What emerges for the agri-environment is really important. We have managed to achieve an 83% increase over this spending review period on higher level stewardship, which we really want to continue. We know that this has huge benefits not only in the area of water quality but across the environment. Whether we will be able to continue to support this public benefit, which we know HLS delivers, depends on getting that right and on an understanding in the Commission about the profile of British agriculture and what good can be done if farmers are incentivised in the right way. With the CAP being such a huge proportion of what taxpayers and people in my constituency are paying for the EU, they want a public benefit out of it. This is an opportunity that I am not convinced is shared entirely as it should be.

Q303 Baroness Sharp of Guildford: Do you see any conflict between the need to move towards more intensive sustainable agricultural production, which we know we need to move to for food security, and meeting these Water Framework Directive objectives?

Richard Benyon: To some people, sustainable intensification sounds like an oxymoron, but it is not if it is done correctly, regulated and, more importantly, incentivised in the right way. This is a subject in itself. I have had conversations at agricultural colleges about training the next generation of farmers and land managers to understand that this is as important for how they develop their businesses as production was when I was an agriculture student. If we are to continue to receive public funds, there has to be a better or more obvious way of delivering public benefit. That is the direction of travel.

As the chief scientist said, it is very important to achieve sustainable intensification in a world in which there will be many more hungry people. The next two decades will be a very good time to be in the food production business and to be a farmer if they can get this right and understand that balance. I was in Suffolk at the height of last year's drought and saw a very

efficient grower producing lots of onions and field-scale vegetables next door to an area of natural habitat. There was a huge body of water, which was alive with different species, from which he was extracting for his irrigation system. It was a beautifully integrated system, which brought home to me what we are talking about here. It is happening. There is real expertise out there, but I am sure that more can be done.

Can we quickly say something about cohesion funds and how they might work better?

The Chairman: We do not have a lot of time, but perhaps you could write to us on cohesion funds if you have anything to add.

Q304 Baroness Howarth of Breckland: You have just answered the first half of my question, which was about the huge challenge that you face. I come from Norfolk.

Richard Benyon: That project was not very far from you then.

Baroness Howarth of Breckland: For every project that you see, there are a large number of areas where there are still difficulties. Defra has to get that information across somehow. The other issue, which was raised by Lord Lewis but not answered, is flood management and how it is joined to river basin planning. Could you say something about flood strategies, how they are being developed with local partnerships and the involvement of local authorities? Given the way planning moves forward, it is often quite difficult to establish who is responsible for the management of flooding when local authorities can develop building plans without much reference to the flood problems. I want to link that to the next set of questions about the challenges that we face in public awareness. I see these two things as being together, but maybe we could start with the flood issues.

Richard Benyon: Certainly. We got a bit of criticism from the Public Accounts Committee about how we are structuring our flood responsibilities. I am not a particularly sensitive soul but I was piqued by the criticism. We were implementing the recommendations of Sir Michael Pitt's inquiry and excellent report following the 2007 floods. He said that greater understanding of, and responsibility for, what is required and the management of flood risk were needed locally.

In their dying days, the previous Government rightly took that forward in the Flood and Water Management Act. We are implementing it because it is right and good and the way forward. If you believe that government is best delivered from a Minister's desk, it is not the way forward, but if, like me, you believe that if you can give local authorities the expertise and capacity to understand this, it is very successful. It integrates all the things that we are talking about today—water management, the local Environment Agency and other actors that we have talked about—in assessing risk. Yes, the money still comes largely from the Government. We are spending £2.17 billion on flood assets over the next three years. However, that local involvement is key.

Most flooding still comes from rivers, so it is about managing those rivers effectively. This has resulted in the Government looking at various pieces of legislation. For example, the Reservoirs Act 1975 is a real barrier to producing flood defences because of the guidance, which gives a very clear view of the threshold, so we are reviewing that.

These have come from local situations that have been brought back to us. It is about that relationship between the Government and local government, their being the lead local flood authorities and trying to make policies to go forward.

One very important point is that the new national planning policy framework, which has raised a lot of debate in its draft form, will be published. Those concerned about PPS25, the

part about flooding, will be satisfied that it will still protect; there will still be a presumption against building on flood plains and in areas of flood risk.

Q305 The Chairman: When will that be published?

Richard Benyon: Later this month.

Q306 Baroness Howarth of Breckland: Going back to what you were saying about awareness, we have heard from witnesses that change really has taken place. As you described, people have become responsible for their own water, with interest groups and stakeholders coming together to increase protection. Would you say a little more about what you think makes a difference, and whether what the EU is doing actually encourages a local approach that seems to be effective? Also, are there other levers when it comes to value for money? If people value things that have a significant cost attached to them, does it make sense to plan for water and sewerage services to remain relatively cheap, which is something you say in your White Paper? Do you see water metering as a way to accelerate behavioural change? What other levers would ensure that the public respond appropriately to the need to preserve and improve water?

Richard Benyon: In all our thinking on complying with the waste water directive and the Water Framework Directive, we are of course mindful of what Europe says and does because ultimately these directives came from there and we want to comply with them. In other respects, I have to say that the European Union has not been at the forefront of my mind, because these are domestic issues that we have managed with varying degrees of success for a great many years, and I think they should remain so. What we do to encourage behavioural change is an area that really interests me and one that we are looking at. I am one of those shallow politicians who wants to be re-elected so I do not go out and say that water and sewerage should be more expensive, as some do. We have to recognise that an increasing percentage of households are now spending more than 5 per cent of their income on water charges. We are currently taking a piece of legislation through Parliament to rectify a long-felt unfairness that will transfer £50 per household back to households in the south-west. There is much that can be done.

It was our feeling that metering is not the only game in town when it comes to changing behaviour. However, metering is important and we are seeing a rise in the percentage of households that are metered. We are watching closely Southern Water's universal metering programme. We have noticed in the south-west, where water charges are higher, that 80% of households do have a meter. There is still a belief among a lot of people that all this is going to cost them more, and sometimes that is well justified, but I think that the water companies can be encouraged to secure a greater degree of metering and with it—this is what particularly impressed me about the Southern Water programme—going into low-income households and explaining how you can change your behaviour, perhaps by just changing the fittings on your shower or how you wash up. You can get exactly the same amount of washing up done using less water. That comes so much better from Southern Water, or in its case an intermediary—it uses the CAB or other organisations—than a Minister saying in times of drought, “You've all got to share a bath”, or whatever. It is really important that we look at the triggers for behavioural change. We do not believe that there is a simple, one-size-fits-all formula. We must work with organisations that are interfacing with customers. They tend to be the water companies, but there are others as well. Through the Green Deal, for example, we are doing work on hot water, but that is a relationship and one that we want to use in future years to try and trigger behavioural change. It is so important to look at both ends of the pipe. We must look at demand and

supply and we have tried to get the balance right. We have been criticised by some who feel that we should have made a clear commitment to total metering by next week, or within a few years, but they were always going to be disappointed because while we can see the virtue of it, we want to carry people with us and get them to understand that there is no one-size-fits-all solution.

Q307 The Chairman: Thank you very much. You have already given us four minutes more than you agreed, so perhaps I may ask one further question about diffuse pollution and the role of urban diffuse pollution, with reference to the problems there and how local authorities might be able to deal with it, but perhaps I could ask you to answer that in writing, if that is all right.

Richard Benyon: Certainly.

The Chairman: Thank you for coming to talk to us. It has been a very interesting session.

Department for Environment, Food and Rural Affairs— Supplementary written evidence

Urban Areas – diffuse pollution

- **Do you foresee a role for local authorities in helping with these issues, since at present they are hardly involved in water management aspects of the WFD?**

Local Authorities have a significant role to play in tackling diffuse urban pollution and many already do work in this area. We are developing a strategy to tackle the key sources of non-agricultural diffuse pollution this strategy aims to facilitate the most appropriately placed stakeholders, including Local Authorities, to deliver the measures required. For instance, this could include local authorities tackling pressures such as misconnections, road run off or the installation of sustainable drainage systems (SuDS) through planning and regeneration.

In addition, Defra is working with CLG with a view to ensuring that the National Planning Policy Framework makes appropriate reference to the role of local authorities in WFD implementation and other aspects of environmental protection.

Ministerial guidance¹⁵ identifies the importance of partnership working to deliver WFD objectives and that the Environment Agency (EA) should work in partnership with a wide range of organisations and individuals, including Local Authorities, to achieve WFD objectives, including through:

- promoting and encouraging awareness of the impacts that activities and policies of other public bodies can have on the water environment;
- working with other public bodies to develop good links between river basin management planning and other relevant plans and strategies, including Local Development Frameworks, strategies and plans; and
- promoting and encouraging the inclusion of WFD considerations in public bodies' plans, policies, guidance, appraisal systems and casework decisions.

Local Authorities are important partners for the EA and play key roles in contributing to the delivery of the WFD objectives - through their own activities, such as planning policy, development management, drainage and flood risk management functions, managing green space, operating buildings and estates, as well as working with other public bodies, businesses and local communities. We know that Local Authorities are already undertaking valuable work which includes:

- development of planning policies relating to watercourses, water quality, water resources, sustainable drainage and blue-green infrastructure;
- development of plans for green and blue infrastructure relating to strategic development sites and within Infrastructure Delivery Plans;
- consideration of water issues when determining planning applications;
- consideration of water quality and broader WFD issues within Local Authority drainage and flood risk management roles;

¹⁵ River Basin Management Guidance, Defra 2006

- design and management of Local Authority owned sites and premises to reduce risk of water pollution, enhance water efficiency and use of sustainable drainage systems;
 - highways maintenance operations to reduce risk of water pollution; and
 - working with local communities and stakeholders to raise awareness of local water issues and improvement priorities.
- **What priority does Defra place on urban diffuse pollution? Are other departments - such as DCLG, DfT and DECC - involved in addressing these?**

Diffuse pollution from urban sources is a significant pressure and therefore priority for Defra. As described above, we are working with the most appropriate sectors to facilitate this. We have an active engagement with OGDs principally DCLG, DfT and their delivery body the Highways Agency.

- **Defra have recently produced the national standards for sustainable drainage systems - what more can be done to retrofit urban areas with technologies that reduce the flows into conventional drainage systems? If “soft engineering options” such as these were to be preferred, wouldn’t this allow the public to better engaged in the water cycle, as opposed to large-scale infrastructure projects?**

The Government wants to encourage greater use of sustainable drainage systems (SuDS) to manage surface water. The SuDS approach, which can be used in rural and well as urban areas, has multiple benefits including improving water quality, reducing the risk of flooding, freeing up capacity in sewers as well as providing ecosystem services and helping us to adapt to climate change.

The Flood and Water Management Act 2010 contains provisions to increase the uptake of sustainable drainage systems (SuDS) in new developments and redevelopments in England and Wales. It establishes a SuDS Approving Body (SAB) in county or unitary local authorities. It gives the SAB responsibility for approving drainage systems, before construction can begin, in accordance with new National SuDS Standards and for adopting and maintaining those SuDS which serve more than one property. It also amends the automatic right to connect surface water to the public sewer making it conditional on the SAB approving the drainage plans. The consultation on the package of measures to implement the SuDS provisions in the Act, including draft SuDS National Standards, ended on 13 March. We have worked hard during the consultation period to ensure that we listen to views and that all who wish to are able to have their say in the design of the policy processes.

The Government recognises that there are big benefits to be gained from retrofitting SuDS in existing developments. As set out in the Water White Paper, we will include this in our programme of work on behaviour changes around water.

15 March 2012

English Golf Union—Written evidence

Inquiry into EU Freshwater Policy

This response is submitted by the English Golf Union (EGU), with the support of the Golf Union of Wales (GUW), and Cranfield Institute for Water Science, Cranfield University. The English Golf Union (EGU) and the Golf Union of Wales represent the 2,200 affiliated golf clubs and are the governing bodies of amateur golf for England and Wales.

The EGU/GUW welcome the opportunity to provide evidence into the House of Lords Inquiry into EU Freshwater Policy. A brief overview of the importance of water for golf in England and Wales, and our responses to selected issues is given below.

The value and importance of water for golf in UK

Golf courses are very important rural businesses and employers. A recent survey in 267 golf clubs in South East England in 2007 showed that a typical golf club with an 18-hole course employs 18.5 full time equivalent staff in the clubhouse, pro-shop and for course management. It is estimated that, on average, each club contributes over £1m to the local economy. Golf courses provide important recreational opportunities for the local community, helping to meet government health objectives. Most are open to the general public to play, and golf is a sport where different generations of the family unit can compete together. They also provide important environmental and ecological benefits, being recognised by Natural England as wildlife corridors from urban to rural areas.

About half the 2,200 courses in England and Wales are dependent on mains water supply. The majority only irrigate the important fine turf areas (greens and tees) which cover 1-2 ha on a typical 18-hole course. Even in a very dry summer, irrigation water use on a typical 18-hole course is on average 4500 m³ (Knox *et al.*, 2007). The systems used on golf courses are engineered to save water and maximise efficiency, by for example, using permanent pressurised pipe work and irrigating at night. Many golf courses are actively pursuing agronomic practices aimed at promoting grass species, which are better able to cope with dry conditions, and strive to use less water not more, to promote healthy swards and reduce the environmental risks associated with nitrate leaching. Nevertheless even these more drought tolerant grass species need sufficient moisture to replace evaporation/transpiration losses.

In a dry summer in England, most golf courses irrigating greens and tees use approximately 600 m³ per week at peak demand. It is important to stress that these volumes are very small in comparison to other sectors (e.g. field scale agriculture) and yet deliver significant social and economic benefits.

In defining future freshwater policies it is important to recognise the value and importance of water to golf (and indeed the wider sportsturf industry) and not to categorise it as being 'non essential' use (such as garden watering or car washing etc) particularly during drought conditions. Recent research (e.g. Rodriguez-Diaz *et al.*, 2007) has highlighted the very significant financial returns (Euro per m³ applied) for irrigation water use in golf compared to other sectors (e.g. irrigated agriculture). In their study, Rodriguez-Diaz *et al.* (2007) reported direct benefits of around 9 Euro per m³; water use values that were typically three times higher than even the most profitable agricultural crops (e.g. strawberries) grown in Spain which were reported to generate benefits of around 3 Euro per m³. This serves to demonstrate the importance and value of water to golf; it also supports significant

employment in rural areas (the numbers of FTE staff per irrigated hectare are significantly higher than any other land based industry).

Feedback on the Call for Evidence

We recognise the high importance of managing and allocating water resources in a fair and environmentally sustainable manner – however, we do question your opening statement that “Water is a finite resource”. Hydrologically, this is not true – in many Member States water is of course under intense and growing pressure, and the additional burdens of population growth and climate change will only exacerbate current pressures on water availability (supplies) and demand (abstractions). However, water is, unlike other resources, a renewable resource, and its availability is therefore not finite. It is re-used in many catchments and river basins as a matter of course; discharged water from sewage treatment plants serve to maintain the environmental flows of many rivers in England during summer months. It is therefore important to use the right terminology from the outset and to understand the hydrological context of the current water resources situation before embarking on policy changes to improve the management and allocation of freshwater supplies.

1. Strategic objectives of EU freshwater policy

The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. We agree that this is a sensible policy objective but its interpretation needs very careful consideration, in particular the definition of terms such as ‘sustainable’ ‘good quality’ and ‘long-term’. These need to be qualified as different stakeholders will have different perceptions/expectations of what constitutes ‘sustainable’ and ‘good quality’. It is also important to engage all relevant sectors in this dialogue, not just those which constitute the largest uses (e.g. public water supply) of those with solely environmental interests. Agricultural uses and the leisure sector are very important industries and water users in rural areas and their businesses are equally dependent on sustainable (and affordable) water supplies.

It is important for the Commission to be aware of the different time scales under which different externalities (e.g. climate change) might impose their impacts on freshwater, the magnitudes of impact, and their consequent risks on the water environment. These all vary spatially and temporally and will be affected by important major drivers such as population growth, migration, climate change and hydrological extreme events. Policies will need to be developed that cater for the adaptive capacity of the institutions responsible for water management and their water users (public water supply, agriculture, navigation, leisure etc).

2. How adaptable to emerging new challenges is the current policy framework likely to be?

The resilience of the current policy framework is likely to be seriously challenged by some of these emerging risks. But it will depend on how the various risks have been assessed/quantified, and what their expected relative impact on freshwater supplies is likely to be. The current framework will need to be more flexible than it currently is to cope with these shocks.

3. Adding value

We have no specific comments relating to this issue

4/5. Future policy

In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

It should recognise that there are significant uncertainties in the future climate, and its impact on the reliabilities of water supply and demand. The value of water (net benefits derived) should be more explicit within each sector and their use linked more closely to objectives to improve water efficiency. Water efficiency measures should be supported, but the Commission should note that this will derive up demand in some sectors (e.g. agriculture) where improvements in technology will lead to 'better use' and not necessarily 'less' use. The focus should be on reducing environmental damage rather than reducing legitimate abstractions that deliver economic benefits

What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

The EU should promote and support initiatives that increase the public awareness of the future risks to water supply, the opportunities for reducing water wastage and minimising environmentally damaging abstractions. The importance of water in our daily life, the amount needed for food production and the amounts we need for sustainable economies are not well understood or disseminated across the general public. Greater education of the importance of 'water for people' 'water for food', 'water for the environment' and 'water for industry' would be a sensible approach to adopt. Much greater emphasis on water in primary education would also help to engender an understanding of the importance of water, and its long term sustainability.

We do not endorse the concept of promoting 'water footprinting' for product labelling in its current form, as it fails to explicitly incorporate the environmental water stress associated with the point of water abstraction. For example, a high water footprint for a product is not necessarily 'bad' if it is produced in a region where water resources are plentiful; conversely, a high footprint for a product from a catchment that is highly stressed will have a much greater environmental impact. At present, water footprint labelling would not distinguish the sensitivity of the water source. The public are not sufficiently well informed of the notion of water footprinting to really make informed decisions. Water footprinting would put entirely legitimate businesses at risk because of ill informed public perceptions that a large footprint is 'bad'. The public would also confuse the concept with carbon footprinting.

6 Research and innovation

How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?

By seeking much greater engagement with local industries, stakeholders and particularly SMEs. Better integration between different themes in water management would also be beneficial. Supporting research in water issues of relevance to other sectors (e.g. leisure/sportsturf) which traditionally have been ignored from mainstream research funding. To assist the undertaking of tailored research programmes to deal with future irrigation product development / design techniques in these sectors (leisure / sports turf).

7. Other policy areas: agriculture and cohesion

How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

No specific comments from the golf sector.

7 September 2011

Environment Agency (EA)—Oral evidence (QQ 233-256)

Evidence Session No. 10.

Heard in Public.

Questions 233 - 256

WEDNESDAY 15 FEBRUARY 2012

Members present:

Lord Carter of Coles (Chairman)
Earl of Arran
Baroness Byford
Earl of Caithness
Baroness Howarth of Breckland
Lord Lewis of Newnham
Baroness Parminter
Baroness Sharp of Guildford

Examination of Witnesses

Rt Hon the Lord Smith of Finsbury, Chairman, **Ian Barker**, Head of Land and Water, and **David Baxter**, Head of Catchment Management and Water Framework Directive, Environment Agency

Q233 The Chairman: Lord Smith, Mr Barker, Mr Baxter, you are very welcome. If I may, I would like to just deal with the formalities before we go to the questions. You have a list of interests that have been declared by Committee Members. This is a formal evidence-taking session of the Committee. Full shorthand notes, of course, will be taken. They will go on the public record in printed form and on the parliamentary website. We will send you a copy of the transcript and you will be able to revise it in terms of minor errors. The session is on the record; it is being webcast live and will be subsequently available on the parliamentary website.

You are indeed very welcome. I will start with the first question, which is—we are rather curious—why was it so difficult to get you to come to see us?

Lord Smith of Finsbury: First of all, Chairman, my apologies for the fact that I am croaking a bit, which may mean that I rely on my two colleagues rather more than I might otherwise do. I was not aware that it was difficult to persuade us to come. We were delighted to be able to come. There may have been an issue over dates, but there was certainly no reluctance on our part to come and have a discussion with yourselves.

Q234 The Chairman: Perhaps we could press you on that. I wonder if you could inquire with your colleagues and perhaps drop us a note, because that was not our understanding of that at all.

Lord Smith of Finsbury: I will certainly make inquiries, but the moment that I heard you were keen to see us I said, “Yes, we must come and talk”.

The Chairman: Also, we received no written evidence, which in an inquiry like this is slightly unusual.

Lord Smith of Finsbury: In terms of written evidence, I think we wanted to be guided very much by Defra, which is our lead supervising department, and if that meant that we did not submit what might have been helpful then I can only apologise.

Q235 Baroness Howarth of Breckland: You are a non-departmental public body with executive responsibilities.

Lord Smith of Finsbury: We are indeed an NDPB but in matters relating to policy where the Government has a clear view and intention and programme for implementation—and in terms of the Water Framework Directive, of course, it is the Government that is ultimately responsible—we very much want to dovetail what we are saying with what Defra might be wanting to put in front of you.

Q236 Lord Lewis of Newnham: Could I just raise a question on that, my Lord Chairman? It was at a previous discussion that we discovered that, in fact, when any implementation or even discussion of directives was occurring in Brussels Defra was the group that went along to it, but we also discovered that very often it never even consulted the Environment Agency about the actual discussions that were going on. Since at the end of the day my belief is it is the Environment Agency that is going to implement what is happening in the directives, it concerns us quite considerably that we are in a situation where, in fact, the people who were going to have to do the job were not there to advise the people who were trying to implement what was to be done. I understood that there was a sort of memorandum of understanding between the two. Has that position altered at all, your relationship, between Brussels and the two groups?

Lord Smith of Finsbury: Whenever Defra would go to Brussels for discussions on any directives and their implementation, we would be very fully involved in the discussions leading up to that. Ian, you would be probably the key person who was doing that.

Ian Barker: Indeed, on a number of occasions I have accompanied Defra colleagues. The working relationship is such that we give them very significant advice before and after those conversations and also, with Defra’s blessing, represent the UK on a number of European working groups.

Q237 Lord Lewis of Newnham: I am delighted, thank you. First of all, may I also say welcome to you? I have spent a little time reading through quite a lot of your publications on implementation of the directive, which I must say I found extremely useful and very informative, but your website states that the Water Framework Directive “gives us an opportunity to plan and deliver a better water environment, focussing on ecology”. I think it is fair to say that the big change that has occurred in this area of water policy has been a change from chemical to ecological standards as a whole. The water bodies have to achieve what is called “good status” by 2015. I think this is an aim rather than something that they must completely do, but to get to good water status they must have both good ecological status and good chemical status. This depends upon a rather large number of variables. It

used to be about five chemical variables but I believe the total number is now up in the 30s as potential variables that you are going to have to go to. But the really important point is that for compliance you must pass all. If you just have one parameter that fails to meet the good status standard then the whole lot has fallen away.

First of all, as far as the chemical side is concerned, my understanding is you only have two situations you have to answer: it is either yes or no as far as the chemical standards are concerned, and that is because you have a figure that is given to you. As far as the ecological standards are concerned, I think you have as many as four possible classifications you can put them in and, with no disrespect to my biological friends, there is a certain element of subjectivity that must be involved in assignment to those various statements. Is this sensible? Should you not have a much greater flexibility in dealing with this particular type of problem?

Lord Smith of Finsbury: There is no doubt whatsoever that the tests that the directive place on us are very demanding. At the moment, in terms of good ecological status, I think it is 27% of England's water bodies that meet good ecological status. In order to drive that percentage up, it is going to involve a Herculean effort. Are we ever likely to achieve 100% of all our water bodies in good ecological status? Given that we are a very crowded island with a lot of industry, a lot of agriculture, a lot of urban areas, I suspect not. Is it important that we have that ambition in front of us in order to make us do whatever we possibly can to improve the condition of our catchments? Yes, I think it is important that we have that ambition in front of us.

I will ask Ian and David to say a little bit more about the precise parameters and how we perform and measure against them.

David Baxter: There are two parts to it. One is what is good status actually telling us? Well, it is a big integrated measure, is it not, really? It is telling us whether we have a healthy, functioning catchment. So it is a complex beast to measure. There is the issue we talked about earlier, which is the issue of communication. Getting to good status overall is going to take action to deal with a number of problems. We might be making progress on these underlying problems but not actually changing the headline number of good status. So what we found between the results we reported at the end of 2011 and 2010 is that, roughly, the same number of water bodies met good status, but underneath that the individual elements—around 1,400 separate quality elements—improved in status class. So big progress is being made but that did not change the headline measure. From that respect good status is a blunt instrument and we do need to look underneath it and communicate—and we will do this—on other indicators showing progress, not least to give people the encouragement that they need to have, because otherwise it can feel like an impossible task.

Moving on to the issue of the different boundaries and the different classes within the biological element, there are up to four separate parts of the biology we will look at, such as the plant life, the fish, the invertebrates and the diatoms—the small algae-type things. Typically in most water bodies, we will only choose to monitor one of those biological elements. We will choose to monitor the biological element that is most sensitive to the pressures in that water body. So it is not automatic: there are some waters where we monitor everything; and there are surveillance waters that give us a lot of quality assurance and back-up for a number of reasons. But first of all we only generally focus on one of the major biological elements that are sensitive to the pressures there.

Then looking at the boundaries, obviously the directive describes conservative reference conditions: high status, which is water that has not suffered any influence of the effects of man; good, which is a marginal deviation from those conditions; moderate, which is a slight

deviation; poor, which is a major deviation; and bad, which is a drastic deviation. We spend a lot of time understanding what the biology looks like in those conditions, and we have loads and loads of monitoring data to back it up then to understand what the boundaries are between the different classes.

We then go another step and work across Europe to do this process called intercalibration, because obviously we are in different biogeographical zones so we have different biologies. But the process of intercalibration involves groups, countries and waters that have similar biogeographies. We then look at the different techniques and tools that we have used, and there is this process of ensuring, through scientific study and peer review, that the boundaries we all individually choose, using our own individual tools, are calibrated so that we feel that the boundaries between good and high, between good and moderate and lower down, are equivalent. So that intercalibration process, which continues—it has been going on for six or seven years—has been vital in giving us an assurance that we have some understanding and comparability in those different stages.

Q238 Earl of Arran: On the WFD and climate change, in your publication *The Case for Change* you spell out the uncertainties over water availability in the future but make only passing mention of the directive. I have two questions: firstly, how serious a risk is future water scarcity, in this country and across the EU; and, secondly, how does, or should, the WFD deal with the impact of water scarcity on water quality?

Lord Smith of Finsbury: In terms of the first question, I cannot answer for the rest of the EU. What I can say, however, is that our expectation is that as climate change begins to have an increasing impact, the levels of flow in many of our rivers, especially during the summer months, will fall fairly dramatically. In 30 to 40 years' time, estimates are that levels of flow in parts of the east and south of England will be 50% down on what they are now. That, of course, has a huge impact, both on the availability of water for human consumption and for use for industry and agriculture and on the ecology of the river systems. We need to prepare for that. I suppose the basic point is it will make the Water Framework Directive ambitions much more difficult to achieve because if you have a lower flow in your river, the impact of the foreign material—the pollutants and everything that goes into the river—is going to be much more drastic. We have a hard enough task as it is at the moment to achieve some of the objectives of the Water Framework Directive. That task is going to get much more challenging. I do not know whether Ian Barker wants to add anything.

Ian Barker: I have a few observations. There is a current perception that England and Wales are a wet nation. Nothing can be further from the truth, particularly in a time like this when we are suffering from drought. Across much of south-east England there is less water per person than in many Mediterranean countries and by most international definitions parts of the south and east are as water-stressed as many Mediterranean countries. We are already starting from a relatively weak baseline in terms of water scarcity, and this is one reason why we see some of the issues that we do with overabstraction of water and lack of availability of water today in many of our catchments.

As Lord Smith has outlined, our analysis in terms of the potential impact of climate change is showing a significant variability but generally the likelihood of significantly fewer water resources in the future by the 2050s than we have today. The work that we have done has not only considered the impact of climate change on water availability but looked at different scenarios of demand to understand whether there will be sufficient water available for agriculture, industry, power generation and the wider economy. It is clear that under all

scenarios we are likely to run into significant water shortages if we try and maintain the same level of environmental protection as we do today.

I think there is a very difficult question for us all to face up to, which is to recognise that the environment itself will change over time with reduced flows and increasing water temperatures. We will need to ensure, and the Government has made very clear in its White Paper, that we continue to protect the environment but as we do so we take account of changing environmental needs, and we also consider how we meet the needs of society and the economy in doing so. That will require a much more adaptive and flexible approach to water allocation than we have at the moment. Again, the commitment in the water White Paper is to do exactly that by the 2020s, to have a system that takes much greater account of water availability rather than one that is embedded in fixed water rights.

Q239 Earl of Arran: Of course, climate change is entirely speculative but you have to deal with that speculation, do you not?

Ian Barker: One of the fundamentals of good water management is understanding uncertainty and risk. We would not take the view that climate change is speculative. We are persuaded by the evidence, and the analysis we have done in terms of different emissions scenarios does make clear that there would be significant impacts on water availability—a greater or lesser impact depending upon the climate change scenario. The important thing is that we understand the range of different potential futures in terms of water availability as well as demand for water in order to plan properly. In forecasting for secure supplies, for example, assuming an extrapolation based on current demand or some single forecast has been time and again shown to be a route to failure and catastrophe in terms of water planning, so we need an envelope of uncertainty within which to plan.

Lord Smith of Finsbury: One of the things about climate change is that we know from the science now quite a lot about what climate change is likely to bring. What we do not know, however, is precisely when and precisely what the physical impacts are going to be and that is why planning for a range of possible scenarios and a range of possible timescales is very important when we are looking at something as vital as continuing water supplies.

Q240 Earl of Arran: That rather comes on to my last point, which to some extent was already asked, about how should we prepare for the uncertainties of climate change?

Lord Smith of Finsbury: By planning for a range of options, I think is the answer, and making sure that in the worst-case scenarios we do know what we would do if that is what actually happens on the ground.

Q241 Earl of Arran: Let me make just one final point. Among the witnesses that we have had so far there has been very little mention of desalination. Is that one of the things that you are currently considering? Is that sort of the last resort? I know it is very expensive.

Lord Smith of Finsbury: There is, of course, some desalination already happening. Thames Water has a desalination plant. It is one of the options that would assist with the provision of drinking water. It is expensive and it is very carbon intensive to carry out desalination. What it does not particularly help you with is the level of flows in rivers, and that will remain a problem that there is no quick fix for.

Q242 Baroness Howarth of Breckland: If I may just go back, what is not speculation is that last year East Anglia came very close to losing its crops because of the early drought. The threat is that next year there will not be enough water to get East Anglia through

almost to the spring, so we already have that reality. I wonder if you are being ambitious enough in the short term to meet some of the problems that are clearly with us now, while having your strategic plan for the future, and as part of that working closely with other agencies. The Environment Agency clearly has its brief, but its brief depends on its interrelationship with a number of other agencies.

Lord Smith of Finsbury: That is absolutely true. In relation to the prospect of potentially serious drought in the coming year, groundwater levels are still very low. Even though reservoirs and rivers are looking a little bit better now than they were two months ago, there is very little groundwater. In East Anglia, Bedfordshire, Huntingdonshire, Cambridgeshire, Lincolnshire, there are serious potential issues, especially in terms of the supply of water for agriculture. We are already working very closely with the water companies and with the agricultural community through the NFU, the CLA and others, in order to see what can be done to plan how we can cope and provide the necessary water for agriculture during the course of the coming year. Ian, you have been at the heart of many of these discussions.

Ian Barker: Indeed. As my chairman says, we are working very closely with the agricultural community. There is quite a lot that farmers can do to help themselves in terms of sharing water and we have seen abstractor groups of farmers who have got together to pool their abstraction licences—if they are not irrigating potatoes this coming year, then they let one of their neighbours use their water—and that has gone some way towards alleviating the situation. Also, where farmers have winter storage, which many of them do, it has been a real challenge this winter to top up their winter storage because river flows have been so low. Where we have been able to do so, we have relaxed some of the conditions on those licences to allow them to pump, where we believe that it is safe to do so without damaging the environment, to allow them to top up their reservoirs opportunistically during the winter. We are also intending to allow them to top up their reservoirs opportunistically during the summer, assuming we get some rainfall events that bring river flows up, to flex their abstraction licences in that way.

I think behind your question is a fair point, which is that we have been talking about a longer-term strategic issue with regards to water availability, whether it is for drinking water or energy or agriculture, but there is a real and immediate problem. I think to some extent that is within the hands of farmers in terms of thinking about winter storage but that is a very expensive option. I think there are also questions around the reason why farmers irrigate. It is partly for yield and it is partly for quality, and where they have contracts with supermarkets, the insistence of those supermarkets that potatoes and carrots look perfect and unblemished, I think there is a wider education in terms of society's acceptance of vegetables that do not appear to fit the norm.

The Chairman: Thank you. I am very conscious we have four more questions and 30 minutes.

Q243 Baroness Byford: I will be very quick, but I want to follow on with one or two of the comments that have been made. We were told earlier that a third of our water is wasted. Does the Environment Agency have a direct responsibility with regard to that, particularly with regard to leaks? Lord Smith, you also talked about the relationship you have with the water companies. Let us stay with the UK at the minute and then we will go wider to the EU—this is an EU report that we will produce. At the moment, there is plenty of water in parts of the country, and obviously for those of us in the other parts of the country it is a shortage. Does the Environment Agency get involved in discussions as to whether water

might be shipped—I do not necessarily mean by boat, but moved around the country—in a different way? Also, when in future levels are going to be 50% lower, according to the figures you have given today, what is going to be done about it? If the Environment Agency is not involved in that, where does that buck stop?

Lord Smith of Finsbury: We are absolutely involved in those discussions with the water companies and also of course with Ofwat, which has a regulatory responsibility and, through the price-review mechanism, can make sure that the water companies put in place programmes of work in order to ensure that they both tackle leaks and help themselves through the ability to share water. One of the very important things for the future is that different water companies should be able to share and trade water among themselves in order that the drier parts of the country can be assisted by the wetter parts of the country. They are beginning to look at this as part of the way forward, but I think there is still a long way to go. Ian?

Ian Barker: Picking up the leakage question first, I do not recognise the figure that a third of water is lost through leaks. That was the case perhaps 15 years or so ago. Water companies have worked hard to bring leakage down now to between 20% and 25%, which is still a very high figure.

Q244 Baroness Byford: Yes, forgive me. I think the figure quoted was that a third of the water is wasted, not used, as opposed to it being all leaked. Forgive me if I just clarify that.

Ian Barker: Certainly in terms of water efficiency, there is great scope for people in industry to be much more water efficient and that is good for their bottom line. Increasingly, we are seeing water companies engaging better with their industrial customers to help them reduce their water consumption. Leakage does remain an issue and we are concerned that companies continue to innovate to drive leakage down, because the economics increasingly mean that we cannot afford to continue to allow so much water to be lost in that way.

Every water company develops a 25-year water resources management plan, which looks at its available resources and its demand and projects that demand over the 25-year period. As part of that, a company should be looking at the most cost-effective and sustainable option for meeting demand over the 25-year period, and that would include demand management and also new resource development. What we have found in the last two sets of water resource management plans, particularly in the south-east of England where water supply is relatively fragmented among seven or eight companies, is that companies were looking very much within their own boundaries. We have taken a step back and challenged those plans in our advice to Ministers to suggest that companies needed to look beyond their company boundaries in terms of sharing resources and to think more about the whole of the south-east in terms of resource availability and demand.

We chair a Water Resources in the South East Group, which is aimed at pulling together all the companies to get them, in their next set of plans, to think about strategic solutions for the whole of the south-east. That would include greater connectivity within water companies, where there is still a great deal more to do to make better use of the water that the companies already have, but also connectivity between companies, and that could be bulk transfers of raw water or of treated water. At the moment, there should be sufficient water in the south-east for the foreseeable future. The need for larger-scale, longer-term transfers is probably some way off, recognising that water is heavy stuff and takes a lot of energy to move around.

Q245 Baroness Byford: Yes, indeed it does. Thank you for that. Lord Smith, I think you slightly inferred earlier that you did not think the water companies were moving fast enough. When we took evidence from them, I think perhaps one or two of us might have felt that there was not an acknowledgement of the urgency of the situation and there was a lack of action. Does the Environment Agency have a role to push that forward, or is that back to Government and Defra?

Lord Smith of Finsbury: We do have a role in terms of urging and advising. Ultimately, it will be for Ministers to provide the legislative framework and it will be up to Ofwat, through the price mechanism, to exercise the regulatory levers. However, we are working very closely with Government and with Ofwat on this. In its recent consultation, Ofwat has proposed moving away from being very heavily focused on capital expenditure and resources held by water companies to what it calls the potential for a new totex—a total expenditure—view of water companies. In our view, that would be a very welcome development because it would encourage water companies to adopt innovative solutions and to think of new ways of helping to bear down on demand, to store resources and to spread resources more widely.

Q246 Baroness Byford: Can I just very quickly ask Mr Baxter? You said earlier that you were looking at like-minded countries with regard to water and water planning. What countries have you had across the EU negotiations on that particular side?

David Baxter: First of all, there are quite a lot of things we can learn from one another within the UK.

Baroness Byford: Yes, but forgive me, we are an EU Committee.

David Baxter: Beyond the UK, most of our work has been with the German Länder and the German Federal Government. From that, we have generally brought together conferences to talk about specific issues, such as how we assess disproportionate cost and how we actually go about classification. We have been having working groups, generally between ourselves and the Germans but inviting other countries to take part. Those are kind of the formal get-togethers, if you like. On top of that, as I mentioned, we have working groups that are facilitated by Europe about approaches to priority services, how we monitor, how we classify and, indeed, how we deal with agricultural measures. So there are lots of sort of formal EC groups that we take part in alongside Defra, and then there are these sort of more informal groups sharing lessons learned, where principally we have worked with the Germans.

Q247 Baroness Byford: Maybe there are other countries that have good examples of better use and better ecological status that could be developed in the future. Clearly, the relationship is predominantly with one country at the moment.

David Baxter: That is just the working relationships. We do still obviously refer to information that is shared through the water directors in Europe, so we do learn from that and see what is going on. That was the only specific example I had about actual working groups.

Lord Smith of Finsbury: It is also worth mentioning that the heads of all the European environmental protection agencies meet every six months. My chief executive takes part in those meetings. They discuss a whole range of issues, regulatory and in terms of implementation of directives. This is, of course, one of the subjects that forms part of those discussions.

Baroness Byford: Lord Smith, I think it would be enormously helpful to the Committee if we could have a short A4 paper on the various topics you have covered, say, in the last two years. Thank you very much.

Q248 The Chairman: Thank you. I have just one question. Who has the lowest leakage rate in Europe and, Mr Barker, what would you think would be a good leakage rate?

Ian Barker: The Dutch have a very low level of leakage, partly because it is so flat so, of course, pressures are lower than they are in some of the hilly bits of Britain, and also because of the way in which they lay their water mains. It is misleading to talk about leakage in percentage terms, but in Holland it is below 10%. It is also quite good in many German cities as well.

Q249 Baroness Parminter: Future implementation of the Water Framework Directive might mean moving away from a top-down approach to a more bottom-up, eco catchment-based approach, and that means of course different roles would be required. You need not just people who can monitor and enforce, but people who can give advice and who can build up relationships with stakeholders over long periods of time and get outcomes that do not necessarily respond to traditional management KPIs of large bureaucratic organisations. I have two questions. Can the Environment Agency deliver that approach? Secondly, what examples can you give this Committee of culture change programmes or resource redeployment that shows that you are already responding to that changing brief?

Lord Smith of Finsbury: We absolutely can and already do take that approach, and indeed in relation to the implementation of the Water Framework Directive we have established a catchment-based approach to this. We have 10 pilot catchment areas where we, the Environment Agency, take the lead but draw in a range of other players, including some from the statutory sector like Natural England and local authorities but also organisations like the rivers trusts, the National Trust, the local farming communities and so on, in order to establish a common approach very much from the bottom up. What we have also done in another 15 catchments is encouraged others to take the lead with us as one player alongside them. David, you are in the midst of making sure all of this happens.

David Baxter: Yes. I think it is the game in town for the Environment Agency at the moment. We have always had a catchment basis in our thinking of how we deal with water management, but I think in some respects in the first cycle of the river basin management plans we were very focused on perhaps getting the river basin district level right and complying with the directive. We were rightly challenged, I think, that we did not perhaps present information and engage with potential solutions as actively as people were expecting. That is certainly what we are changing right now, and that is why not only in the catchments where we are hosting these pilots, new ways of engaging, but also across the whole organisation we are looking at the concept of catchment-based teams having a lead for each catchment.

I know we have the skills. Among other things, we have the skills from our local authorities for risk management relationships. We know how to work collaboratively—we can learn from that and can get going—but skills are one thing and capacity is another. To get the right level of engagement and keep our promises to keep engaging with local people takes a lot of time and effort. We have to get the balance right. That is not just to say, “We’ll go as far as we can and then stop”.

The way we are looking at it is we will go as far as we can and we will bring other parties in, particularly third sector groups like rivers trusts, wildlife trusts and groundwork trust—lots

of trusts, really—to help us build the capacity because I think that is what it needs. It needs capacity outside of the Environment Agency to use the information and frameworks that we can provide but people with local commitment, who understand the people and can take the information and build a willingness to do more. That is exactly what we are trying to do with the catchment-based approach, starting with these pilots. As I said, there are 25 that are core, which we are trying to evaluate and learn lessons from between now and the end of December. That does not stop in December and nor is it confined to those 25. It is spreading outwards and we are encouraging others to lead. There are another 55 organisations that have expressed interest in other catchments to come forward and help host and build that engagement, and that is hugely a part of our future way of delivering.

Q250 Baroness Howarth of Breckland: I think this is difficult but in terms of the complexity of that kind of cultural objective, how do you measure outcomes? It is easy in other bits of the Environment Agency to measure chemical or biological parameters, but you are getting into quite difficult measurement. When you talk about it being resource-intensive, how do you know you are getting value for the input?

David Baxter: The reason they were calling this phase of catchment engagement a pilot is because we have quite a formal evaluation framework around it, which has been done by some independent consultants to ask those questions. We are recording how much effort we are putting in and we are looking at the outcomes. There is an evaluation going on for that. In terms of measuring the success, you are quite right. If we are looking at trying to deliver an improved ecology, ecology takes time to respond.

We are also finding that, if we go into partnerships where the only objective of the partnership is “We only want to talk to you if you can help us reach good status”, that is not the best way to collaborate. So what we are finding is that as we work in these partnerships, we are helping each other coming to talk about, “What is the shared objective? What is it that we can all contribute to?” We are always measuring what is happening to good status. That is part of our remit for monitoring but also, within the pilots, we are agreeing in that group how we should measure success as a group, not just what the Environment Agency should impose. In the core of that I think is this concept of ecosystem services valuation. I think it is part of the language that we can use to say, “Actually, we can all look to do some good and we can put a value on it, one way or another”. I think that is also part of this journey we are on, saying, “Okay, this range of good things we are doing might give added value in that term”.

For example, we worked in east London with Barking and Dagenham Council and other partners as well on the Mayesbrook, where we helped restore a stretch of river. I think the project spent around about £3 million to £4 million. The ecosystem service valuation suggested that from increased regeneration, increased quality and well-being, increased social cohesion and increased angling opportunity, you got a return of £27 million. That is a seven to one return. That is the kind of language we need to think about, not just good status. We need to think about why it matters to get to good status. It matters because you will get a healthy society.

Q251 Baroness Sharp of Guildford: Picking up this whole process of ecosystems approaches and so forth, I would like to ask you particularly about the development of work with local authorities here. Very often, there must be competing priorities, on things like access and amenity value land for development and so forth. How does the Environment Agency see the partnership developing with local authorities when there are such competing priorities, and what work is the agency doing to encourage local authorities’ interest in

developing these Water Framework Directive-related matters? Do you see the land use planning system playing a role here in terms of mapping out ecosystem services? We had, not very long ago, some evidence from Dr Dylan Bright of the Westcountry Rivers Trust telling us about the work that he was doing in the upper Tamar. What do you see as being the most important lessons that have been learned from that work?

Lord Smith of Finsbury: Can I just make a general comment before asking David to say something on the Tamar? I think it is fair to say that local authority engagement with the Water Framework Directive and its ambitions varies quite dramatically among different local authorities. Where we are engaged in a catchment, we will very much take a keen interest in encouraging the local authority to be a full partner in that. There will always be a range of objectives for any body of water. Sometimes it is about flood prevention; sometimes it is about ensuring a good water supply for a variety of different uses; sometimes it is about ensuring the ecological quality of the water; and sometimes it is about ensuring there are recreation opportunities along the waterside. Rather than talking in terms of competing priorities, I would rather see this as something where we need to balance the priorities. At the heart of it is making sure that the ecology is sound because everything else depends on that. Ensuring that that message is heard and assisted with by local authorities is a very important part of the work that we do. David, do you want to respond?

David Baxter: Let me just build a little on the local authorities issue before moving on to the Tamar. Clearly, we do have relationships, and I think the key one we have with local authorities is around flood risk. I think our aim there is with the Flood Risk Regulations, implementing the Floods Directive, which is looking for catchment-based approaches to flood risk. That then starts to help us have a dialogue with local communities as well as local authorities about what else is going on in the catchment and about what else matters. I think we have a place to build from that and, as I said earlier, it is about making it relevant to what people want out of their community and what local authorities are trying to do around development.

Particularly with things like local enterprise partnerships, we are working with them in looking at green infrastructure, so that we say not just, “You must make sure your development doesn’t cause deterioration” but also, “Look at the opportunities you have here”. In places like Bristol and Bath, where the whole basis of their economic growth is around creativity, they understand that creative industries demand high-quality environments so they are putting the river at the focal point of their redevelopment, not turning their back on it but facing it and saying, “We have to do something about this, because this creates a community and an environment that will promote growth”. That is where the message is. We have to try to work with local authorities and get those connections seen.

With the Tamar, I think we saw quite a lot of good news stories. The most fundamental thing about the Tamar is that, for ecosystem services, you can value all you like but unless you can create a market for someone to pay for the services then you have a problem. What we have in the Tamar is a fantastic example of where a rivers trust has acted as an ethical broker between a water company and the farmers to create that market. We have a lot of support from Ofwat to support South West Water in doing that. I think that lesson is fundamental for the next review of prices from Ofwat and something where we certainly will be saying, “This can work. It is not just about looking at the bad guys and trying to resolve conflict. You can actually have win-win solutions”. That was the biggest lesson from the Tamar. If you have a broker, you can map the services, and it did a fantastic job of showing that ultimately it is only about 6% or 7% of the land that is in high conflict in terms of agriculture. If you have farm payments targeted at dealing with that conflict, and paying for

the service provided rather than income forgone, having an agri-environmental scheme that is about the environment and not just biodiversity, then you will get a heck of a lot more out of the CAP.

Q252 Baroness Howarth of Breckland: You are a regulator and, hearing about all that very interesting partnership outreach work, I recall that one of the suggestions we had from one of our witnesses was that you were being distracted from your core role by your wish to act, if you like, as an outreach organisation. I wondered if you would say a little bit about how you see your pure regulatory role integrating with the work that you have just described, which obviously seems to have some value. More generally, how can enforcement at farm level be improved at the catchment level to deliver the directive and what challenges do urban areas pose as against rural areas?

Lord Smith of Finsbury: We have to be both a regulator and an outreach organisation. There are times when a straightforward regulatory approach, “You must stop putting this particular pollutant into this particular watercourse in this particular way”, has to be necessary. There will be many other times—and this will be particularly the case with diffuse pollution from agricultural practice—where providing encouragement and advice, working with and helping to do a lot of the outreach-type activity to assist the agricultural community to act in a way that does not place such pressure on surrounding watercourses will be a much better approach than trying to simply wave a regulatory stick. Making sure that we are using the right approach in the right circumstances is something that we need always to be focused on, “What is the outcome we want to achieve? How can we most rapidly and readily get to that outcome? What sort of approach is going to get us there?” That is the fundamental test that we always need to apply.

Q253 Baroness Howarth of Breckland: Do you find there is a conflict sometimes between those two roles? Clearly, you have to have key indicators that tell you as a regulator whether or not you are meeting whatever targets you will have set yourself as an organisation but, as we were talking about with Mr Baxter earlier, sometimes you have other ways of engaging that might have a faster, better outcome. Indeed, you have just said that yourself. How do you balance these two things at local level?

Lord Smith of Finsbury: We try and make a judgment, based on experience and also based on what we know about the circumstances of the individual company or bit of land or farmer or whatever, and we try to make the right sort of judgment. We have people on the ground who are very sharp. They know that, if absolutely necessary, they are going to have to turn into being a regulator pure and simple, but if there are better ways of achieving the environmental objective, we encourage them to use them.

Q254 Lord Lewis of Newnham: I think it is fair to say that the Water Framework Directive has been set up in such a way that, for instance in the area of sampling and in the area generally of monitoring, it stipulates the frequency, the actual substances you are supposed be looking for and the conditions under which you are working. Has this altered in any significant way the attitudes of the Environment Agency towards the whole concept of monitoring? I believe you have now introduced self-monitoring as a concept. I do not believe this was something that was done previously. How successful is this likely to be? I am always a little bit worried about the gamekeeper-poacher relationship when you get to self-monitoring in these sorts of areas. On the basic technology of monitoring and things like the frequency, how far do you know this is being carried out throughout Europe in a uniform

way? You talked about your meetings with European colleagues. Is this one of the topics you discuss at a meeting of that particular nature?

Lord Smith of Finsbury: We do have 17% of all the monitoring points in Europe here in the UK. Ian?

Ian Barker: As Lord Smith says, for quite a small nation, we have a significant proportion of the number of monitoring points across Europe and an even more significant proportion of the number of water bodies. The distinction between environmental monitoring and regulatory monitoring—the self-monitoring to which you refer, Lord Lewis—is around water companies where we moved from the position of us monitoring and analysing their effluent quality to allowing them to do just that. I recognise your concern that this might lead them into temptation perhaps, but the reality is that drinking water quality is monitored entirely by the water companies and the Drinking Water Inspectorate relies upon the quality of that analysis. It has checks and balances in place around the procedures, both in terms of sampling and of the analytical procedures that the companies employ, and then has taken action on the basis of that. With that comfort, we moved to self-monitoring of water company discharges and we have found that they have lived up to what they do with drinking water standards. We have prosecuted them on the results of their self-monitoring. So, it works. They do it very cost-effectively, so I think in that sense it is a good regulatory move on our part.

Lord Smith of Finsbury: David, did you want to add to that?

David Baxter: I just wanted to bring both those previous questions together. There is one area where we have worked with farmers to monitor the effects of what is coming off their fields. It was not regulatory monitoring; really it was educational monitoring. This is where it is important the Environment Agency can have this dialogue—we do not necessarily give advice on everything, but we need to be able to engage and talk about the issues as well as regulate just in the hard sense.

What we did with the farmers is that we encouraged them to adopt different practices to manure management and we gave the farmers the kit to measure what was coming off their fields and into the water. For them, to see the difference in results with their own eyes, using their own kit, is just the most effective way to encourage them to do the right thing with manure management—much better than if we had taken the samples and said, “We have taken these samples off your two fields and done this study and modelled it”. When they have been engaged with this process and looked at what has happened and seen it with their own eyes, the change in behaviour is more long-lasting and more immediate. That is one of the ways where we have to use regulation in the sense of an engagement tool as well.

Bringing that on a little bit further, we use walkovers, and we talk to farmers before we are going to do the walkover. If we are then looking to partner with the third sector we say, “We are going to do these walkovers. Would you like to talk to farmers before we do the walkover?” The farmers know in those situations what we are turning up to do, they know who to go to for advice and they know what the responses are. Getting those approaches together is where we are going.

Q255 Baroness Sharp of Guildford: You will know that there is a lot of push within the Common Agricultural Policy towards greening measures, and there is the Pillar 2 that is deliberately being used to encourage farmers to pick up good environmental practice and so forth. How far are you working with Defra in terms of using the moneys available under Pillar 2 to develop this sort of approach?

Lord Smith of Finsbury: We are working very closely with Defra. Ian?

Ian Barker: I am very mindful of the negotiations on CAP reform that are going on at the moment. With that in mind, we have been advising Defra on how, if we took the results of all our monitoring and understanding of the water environment and of the impact of the agricultural community in particular, we could translate that into some simple straightforward messages under a reformed CAP that could help farmers to understand, if they are carrying out a particular sort of activity—say, livestock farming on a particular soil type or where there is a topography with a river of a particular level of sensitivity flowing through their land—given the parameters involved, what they would need to do to achieve basic compliance where that was necessary; and also, for particular sensitivities in terms of the aquatic environment, what they would need in terms of a more targeted effort to reach a higher standard. We have been exploring that approach with Defra, Natural England, the NFU and others in terms of supporting some of the conversations that are taking place within Europe by Defra.

The Chairman: That is a good place, I think, to stop. Just before saying thank you, I think Lord Caithness has a question, which perhaps we could deal with in a written answer.

Q256 Earl of Caithness: Yes. I think, if I could say so, the answers you have given have raised more questions than elucidation as far as I am concerned. I am afraid I have a huge number of questions I need to ask you about the EU directive and your work. There seems to be much less co-ordination in dealing with water than I had believed to date, but I will have to get a letter to you on this.

Lord Smith of Finsbury: We will certainly be very keen to respond as fully as we possibly can. I would be disappointed if a lack of co-ordination was the impression that the Committee was left with, because we are in the process of co-ordinating very closely with all the other bodies, be it Defra or Ofwat or the water companies or the agricultural community, all of whom are key players in ensuring that the Water Framework Directive is implemented. If we were just doing it on our own, it would be an infinitely more difficult task. Making sure that we are co-ordinating well with all the other key players in this is the only way in which we will get success.

The Chairman: Lord Smith, thank you very much. Mr Barker, Mr Baxter, thank you also. That has been most helpful, thank you.

Environment Agency—Supplementary written evidence

Thank you for the opportunity to give oral evidence a fortnight ago. You requested some supplementary briefing which we have addressed in the briefings enclosed. This includes:

- A summary of the role of the Environment Agency with regard to water management in England and Wales and our relationship with other statutory agencies (including joint management in Scotland);
- an overview of the Water Framework Directive, including issues around diffuse pollution in urban areas;
- an explanation of how the benefits of the ecosystems approach are valued, including shared learning from other Member States.

You also sought an explanation of why we did not submit written evidence.

The Environment Agency is an active contributor to Select Committee inquiries and has given evidence directly to nine inquiries in the current session. We have also informed the evidence submitted by the Department of Environment, Food & Rural Affairs (Defra) and other Departments for various inquiries. I am disappointed that you did not receive the evidence you wished from us for this inquiry.

During the Summer, we discussed with the Committee giving evidence. We were concerned that we might be drawn into commenting on government and European policy. The Government has made it clear that it, properly, develops policy at the national and European Union level, and we didn't want to disrupt that role in any way.

We can and do support the Government policy process from the evidence we gather on the ground through implementation. I realise that we could have submitted a memorandum reflecting that evidence, and I accept that we should have been more proactive in offering this to yourselves. We are reviewing our processes to ensure that we do so in future.

Once the Committee formally requested our oral evidence, we responded swiftly and engaged fully with your inquiry, as we have done with this request for supplementary evidence.

Water Management: The role of the Environment Agency

"... in relation to institutional arrangements, the committee would like to see a statement of the role of the Agency with regard to water management in England and Wales, and of its relationship with other statutory agencies such as Natural England, and Ofwat; as well as its view on the adequacy of these arrangements to delivering effective protection of the water environment. The committee would also like further evidence from the Agency about what the strategy for protection of the water environment in England and Wales is, how the strategy is prepared, and who the main agents are for its implementation."

The Environment Agency is a regulator, operator and advisor on the environment in England and Wales. Our role is to manage water quality and water resources, for the benefit of society and the economy whilst protecting and improving the water environment. We are also responsible for the management of flood risk.

We have a long history of working in partnership with other Arms Length Bodies (ALBs). One of the conditions of 'substantial reform' required by the government's ALB Review was that the Environment Agency should develop and deliver a programme of joint working with other ALBs in the Defra Network and, in particular, with Natural England and the Forestry Commission. The main aims of improving the way we work together are to:

- achieve more outcomes for people and the environment;
- provide better customer service; and
- improve efficiency and value for money.

The priorities for joint working were set out by the Secretary of State and a programme of work has been developed accordingly. Many of these are relevant to improving the way we work together on water management issues.

A Memorandum of Understanding between the Environment Agency, Natural England and the Forestry Commission provides the framework for working together. This has been recently refreshed. The programme is overseen through regular joint meetings of the executive teams of the three organisations. A joint Board sub-group has also been set up to provide guidance and scrutiny on joint working initiatives.

The joint working programme includes a range of work streams that have a bearing on the protection of the water environment. These include:

- delivering more integrated approaches to catchment management;
- reducing the risks of flooding;
- providing more effective advice and guidance to farmers;
- providing a 'single voice' approach to working with local government;
- reducing administration and bureaucracy in licensing and permitting;

Environment Agency—Supplementary written evidence

- providing more joined-up delivery in the marine environment;
- developing joint environmental monitoring and evidence programmes;
- providing information and advice on climate change; and
- meeting the government's expectations on its Natural Environment White Paper.

We work closely with Defra on how legislation and government policy is translated into practice. The Water White Paper has provided an overarching strategic framework for our various strands of work relating to water management. It has reinforced the catchment approach which we are taking for our engagement, monitoring and action to achieve the outcomes of the Water Framework Directive. The early stages of our work in the pilot catchments have demonstrated an enthusiasm from third sector and other organisations to achieve an improved water environment.

We have a close and productive working relationship with Ofwat and the Drinking Water Inspectorate to ensure a complementary and integrated regulatory approach to the water industry. The Grey Review proposed that the three regulators should prepare a statement of how they would work together and this is close to finalisation.

Working with Scotland

"The committee would also like information about liaison with Scotland over management of joint river basins."

At a UK level our working arrangements are mediated through UKTAG. We work with other UK environment and nature conservation agencies, including Scottish Environment Protection Agency (SEPA) and Scottish Natural Heritage to come up with common frameworks for standards and classifications required under the Directive.

When the Water Framework Directive was transposed into UK legislation, separate provision was made for the Solway Tweed River Basin District (RBD) because it straddles the English–Scottish border. Under the Solway Tweed Regulations, the Environment Agency and SEPA were given a number of new duties and responsibilities.

In the Solway Tweed RBD, our two organisations work jointly to deliver a coordinated approach to river basin planning in the District. In particular, we act together on:

- river basin characterisation;
- a monitoring programme;
- a Statement of Steps and Consultation Measures;
- identifying significant water management issues;

- producing environmental objectives for each water body and a summary Programme of Measures to be applied to achieve those objectives;
- creating a draft River Basin Management Plan; and then
- creating a River Basin Management Plan.

We have produced a framework document (attached) to help us and our partners manage water effectively across the borders of the River Basin District. It demonstrates our commitment to joint working and will provide confidence that the RBMP will meet the obligations of the Water Framework Directive and the Regulations applying to the Solway Tweed RBD.

We have jointly produced this Framework by actively involving and listening to the views of others. It reflects responses to related public consultations and contributions made at two seminars held in Carlisle and Kelso during 2004.

The Water Framework Directive: the Environment Agency's perspective

"...in relation to EU policy more specifically, the committee would like to see a statement of the Environment Agency's view of what changes it would wish to see in the Water Framework Directive (WFD), including the extent of need for more co-ordination with the other water directives"

We are firm advocates of the aims of the Directive and welcome its incredible ambition. The Directive has highlighted the need for action to tackle longer term problems – morphology, diffuse pollution, chemicals – whose impacts will be exacerbated by climate change and a growing population.

We believe that good status is a useful indicator of long-term sustainability in a catchment. However, because it can be failed in so many ways, and because the public will find some aspects of it difficult to value, we believe a more public-facing set of interim indicators and values are required. A clearer statement on the use of ecosystems services valuation would be helpful. This will give a more consistent means of engaging with people across Europe on the benefits of moving towards good.

Linked to the above point we believe that Europe should give clearer guidance on reporting progress towards good so that we can account for ubiquitous problems that might ultimately only be solved by pan-European action at a source control level. The potential wide ranging failures that will arise from new Priority Substances proposals will be a case in point. If we end up only reporting the headlines of good status, we mask progress underneath and potentially create a sense of an impossible task that will discourage community engagement and action at a local level.

The Directive creates a valuable framework for integrated water management, restoration of natural function, public involvement, proportionate responses and a debate on the value of water to society. The impacts of climate change could be better handled. We would welcome a debate on the long-term validity of targets based on “near-natural”, which is the basis of good status, when the climate and hence the basis of natural itself is changing.

The concepts of proportionality and phased approaches, connected to actual outcomes and impacts, which the Directive champions could usefully be applied across the whole of European water legislation. The obvious example being the Nitrates Directive which is very prescriptive in its requirements.

The European Commission's Blueprint

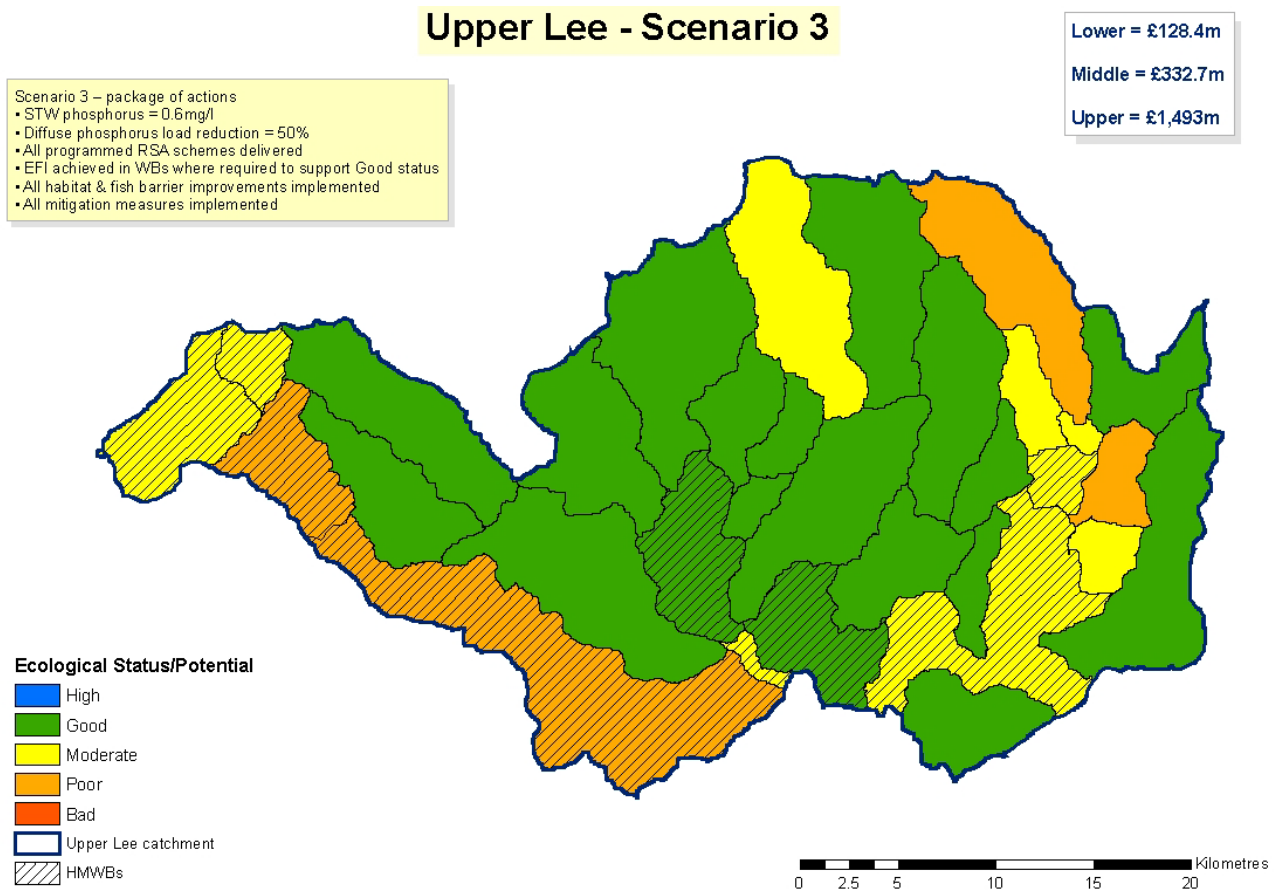
"...what the Environment Agency would wish to see in the European Commission's Blueprint."

The key issues within the European Commission's Blueprint relate to implementation of the WFD. We would like to see clearer, pragmatic guidance and more exchanges between Member States on practical implementation. We have responded elsewhere to highlight where we are working across Europe on this. We would also support rationalisation of monitoring and reporting requirements to deliver a more efficient process.

Meeting the requirements of WFD

"The committee would welcome comment from the Agency on whether there are requirements in the WFD which cannot realistically be met by heavily urbanised countries such as England and Wales and, if so, whether there is a robust justification for these requirements."

In urban catchments in particular, we have not yet seen a proportionate or feasible pathway to achieve 100% compliance with good in all waters by 2027. Work we have done in the Upper Lee indicate that even with significant effort, at the edges of technical feasibility, with expenditure in the range of £300m, fewer than two-thirds of the 32 water bodies in this urban catchment would achieve good ecological status.



Planned progress in the first cycle in England and Wales is similar to Germany and The Netherlands. The key factors driving differences across Europe are population density and agricultural intensity.

Even within the UK we see marked differences in the ambition between River Basins in Scotland and those in Eastern England. These are connected to both population density, agricultural production intensity and the differing response times that can be expected from a river in fast flowing hard geologies as opposed to a slow flowing lowland river.

The Directive allows for proportionate and feasible responses so it does not require 100% good everywhere. So, the requirement to aim to achieve good ecological status, in the full context of the Directive, can be delivered. Defra’s Impact Assessment on the Directive in 2007 concluded that, based on assumptions at the time, benefits would only outweigh costs in scenarios where around 75% of waters achieved good by 2027. What is feasible through aiming to achieve good status by 2027 needs to be seen in that context.

As noted above, Europe has a working group on agricultural measures. We believe Europe should consider strategies, akin to this focus on agriculture, that deal with the long term challenges posed by densely populated landscapes which are heavily managed, but not necessarily heavily modified.

Figure 1: Achievement of good status and population density

Member State (MS)	Good Status 2009	Good Status 2015	Change in Good Status	Area of Member State (km ²)	Population of Member State ³	Population density of MS (pe/km ²)
Bulgaria	37%	88%	+51%	110 994	7.5 M	68
Czech Rep	12%	14%	+2%	78 866	10.4 M	132
Estonia	55%	75%	+20%	45 227	1.3 M	29
France	40%	67%	+27%	543 965	62.3 M	115
Germany	22%	29%	+7%	357 027	82.2 M	230
Ireland	44%	81%	+37%	70 182	4.5 M	64
Netherlands	4%	20%	+16%	41 864	16.6 M	397
UK	24%	37%	+13%	242 514	61.6 M	254

Tackling diffuse pollution

"In this context, the committee would also like to receive more information about action being taken by the Agency with regard to diffuse pollution from urban sources."

The vast majority of people in England and Wales live in towns and cities and this combined with commercial activities places disproportionate pressure on the water environment in and around urban areas. There is little doubt that tackling water pollution originating from urban or 'built' environments presents a significant challenge. In some cases it may prove to be disproportionately costly to achieve 'good' (or better) ecological status in urban waters.

However, point sources tend to be tightly regulated via environmental permits issued to industrial operators and to water companies, whereas diffuse sources are often hard to identify and difficult to regulate in a traditional way. Great improvements have been made in reducing the impacts of point source pollution through direct regulation of industrial discharges and through investment by water companies. Diffuse pollution remains a major contributory factor to urban water bodies failing WFD standards.

Tackling water pollution in urban areas is more challenging because of the wide variety of sources, the complex nature of property ownership and the need to establish who is responsible for tackling ongoing pollution issues and hence with whom we need to work to find solutions. There is an ever greater need to work with others to find cost-effective solutions, find alternative sources of funding and support voluntary initiatives to tackle problems at the local level. Some of the biggest opportunities to make sustainable improvements to urban water quality come through working with local authorities, communities and developers on urban regeneration projects, a topical example being the River Lee through its association with the London Olympics.

A further point to consider is that there are far fewer such controls in the urban environment. For instance, it is often difficult to provide proof of pollution, required for legal interventions. For this reason it may be more effective to consider applying general rules concerning abuse of the surface drainage system (for example). This would apply legal control closer to the source of the pollution which in itself this would not solve the entire

problem, but it would allow the possibility to take targeted enforcement action in problem areas.

At the strategic level we are working closely with Defra in support of the Water White Paper commitment to develop a strategy to tackle urban diffuse pollution. In preparing the ground for this we have identified that the four largest impacts on quality of waters in urban environments are from:

- run-off from roads and other hard surfaces;
- foul to surface water misconnected drainage;
- run-off from trading estate/industrial estates;
- in-situ contaminated sediments washed into water courses over many years and that continue to release pollution or are 'reactivated' by physical or chemical changes in the watercourse.

There are also numerous other pollution sources that may be more or less significant at the local level. We are running a study involving a range of key stakeholders to look at the costs and benefits of retrofitting SuDS (Sustainable Drainage Systems) to existing surface water systems. As well as helping to manage surface water run-off in a more sustainable way these types of schemes can also deliver benefits for water quality. However, we need to understand more about the costs and benefits of these approaches in order to increase take-up.

We are already undertaking a number of practical initiatives aimed at tackling urban pollution. We are expanding a project working with the Highways Agency, Highway Authorities and industry to identify and tackle surface water outfalls that are adversely affecting water quality. We run successful compliance campaigns to prevent dangerous chemicals contained in consumer goods from finding their way into the environment. Recent examples of this are polyaromatic hydrocarbons in imported vehicle tyres and nonylphenol in imported clothing. We are looking to extend this approach since we believe that tackling pollution close to source can often be the most effective solution.

At a local level we carry out:

- pollution prevention campaigns targeted at issues such as oil storage and disposal e.g. the OilCare campaign;
- drainage misconnections programmes such as the Torbay project to improve bathing water quality;
- initiatives, targeting trading estates, promoting best practice such as the Site Right manual;
- community-based work through the Yellow Fish programme which involves schools and community groups educating neighbours on what not to put in the surface water system.

In conclusion, many of our urban rivers have significant and long-term problems some of which may prove to be more or less intractable. But we are far from the point where we are prepared to 'write them off'. With better evidence and advice, prioritised source control and more effective local interventions based around community involvement, urban watercourses could be improved significantly.

An ecosystem approach to catchment management

"...the committee would like further evidence from the Agency about how the benefits of the ecosystems approach will be valued, and by whom, and also who will pay those values; and also some comment on the response of the European Commission to these efforts."

Following the publication last summer of the Natural Environment White Paper, the practicalities of valuing ecosystems to inform policy and delivery decisions is still at an early stage. The valuation would apply to the entirety of the natural environment being considered, rather than just the biodiversity element. Demonstration projects are starting to provide information about different approaches and we are working with Defra, ALBs and academics to build up our knowledge base.

There is increasing interest in Europe to this approach and the European Commission is starting to look into it. A small number of Environment Agency staff attended an EU workshop last September on paying for ecosystem services. We understand that Defra are considering what further steps might be taken to increase understanding as part of the development of the second cycle river basin planning guidance.

Learning from other Member States

"More generally, the committee would like further evidence from the Agency about what it has learnt from other Member States to help towards these efforts."

We have developed our understanding of how other EU Members States have implemented an ecosystem approach through the following:

- Extensive support to the Common Implementation Strategy Working Groups (and development of implementation guidance documents), monitoring, standard for priority substances, groundwaters, hydromorphology etc.
- Continuing involvement in the Commission facilitated Intercalibration Exercise (ECOSTAT). This compares biological boundaries for high and good status across all water bodies. Biological elements used for comparison include phytoplankton, macrophytes, invertebrates and fish.
- We have worked in collaboration with others on a variety of research initiatives, looking at technical issues with respect to WFD implementation, organised through DG Research Framework Programmes, for instance AQEM, STAR, RESTORE, REFORM, REBBECA.

Environment Agency—Supplementary written evidence

- Development of biological monitoring standards methods - working through British Standards Institute (BSi) with European Standards Organisation (CEN) and the International Standards Organisation (ISO).
- Working with the Water Science Policy Interface activity (promoted through DG Research) and the French organisation (ONEMA). The most recent workshop session included a keynote session given by Dr Mark Everard on the use of the ecosystem approach and ecosystem services.
- Working with the Republic of Ireland - who are active members of the UK Technical Advisory Group (UKTAG) on Water Framework Directive
- Regular workshops on a variety of issues with environmental organisations, e.g. German Lander Organisations, ONEMA.
- Working with other international and cross-Europe groups, including SETAC.

Our Chief Executive hosts a regular meeting with other European Environment Agencies where a range of implementation topics around European Directives, including WFD, are discussed.

29 February 2012

Environment Agency—Further supplementary written evidence

This briefing contains:

- further information on the Upper Lee catchment, including different scenarios for improving ecological status;
- ‘good status’ figures for England, Scotland, Wales and Northern Ireland, respectively;
- an explanation of France’s projected increase in ‘good status’.

Upper Lee

“The note gives the example of work done in the Upper Lee. Could you explain why the Upper Lee was chosen for this exemplification; could you also spell out what are Scenarios 1 and 2 for the Upper Lee (only Scenario 3 is presented); and could you explain the relationship between the figure of about £300m for expenditure quoted in the text and the figures quoted in the box inset in the illustration, notably the ‘Upper’ figure of £1,493m.”

We chose the Upper Lee because it highlights the difficulties of reaching good ecological status in a heavily urban environment. More importantly, we have a long history of engaging, monitoring and evaluating problems and solutions within this catchment. It is an example of where we have good understanding of potential solutions to water quality issues (and associated costs). So this catchment provides a good case study for evaluation.

Scenario 3 contains the most comprehensive and ambitious set of actions towards achieving good ecological status. We provided this to the Committee to illustrate that even with considerable effort, at great cost, we would not achieve good ecological status in some areas. Scenario 1 contains a more realistic set of actions that we would consider to be achievable in the current climate. Scenario 2 increases the ambition of Scenario 1 by adding to the quantity and scope of the suggested actions. Scenario 3 adds again to these actions.

Scenario 1 is characterised by the implementation of a package of ‘achievable’ actions (costing up to £89m):

- sewage Treatment Works (STW) kept to 1mg/l phosphorous;
- 10% reduction in diffuse phosphorous;
- implementation of all programmed Restoring Sustainable Abstraction (RSA) schemes where required;
- habitat and fish barrier improvements in water bodies where required;
- implementation of mitigation measures in highest priority water bodies.

Scenario 2 stretches our ambition (costing up to £983m). Builds on actions already implemented in Scenario 1, including, but not limited to:

- Sewage Treatment Works (STW) kept to 0.6mg/l phosphorous;
- 20% reduction in diffuse phosphorous;
- Environmental Flow Indicators achieved in water bodies with habitat and fish barrier improvements;
- additional habitat and fish barrier improvements;
- mitigation measures for additional high priority water bodies.

Scenario 3 further stretches our ambition (costing up to £1493m). Builds on actions already implemented in Scenario 2, including, but not limited to:

- 50% reduction in diffuse phosphorous;
- all necessary mitigation measures and habitat and fish barrier improvements.

Some of the measures suggested in Scenarios 2 and 3 could be unfeasible, e.g. tightening all Sewage Treatment Works consents to a phosphate standard of 0.6mg/l (the tightest general standard in use is 1.0mg/l). However, there may be new, alternative solutions developed in future which would make these scenarios more realistic.

The variation in costs for each scenario arises from our uncertainty over the exact engineering solution required to achieve the goals of each scenario, e.g. restoring flows, reducing diffuse pollution by 50% etc. In Scenario 3, £300m is our median estimate of cost, while the £1,493m represents our upper estimate.

Population density figures across UK River Basins

“The note also includes a Figure 1, on achievement of good status and population density. Could you say what is the source of Figure 1; could you break down the UK figure, as between England and Wales, Scotland, and Northern Ireland...?”

We produced Figure 1 using data readily available from the European Water Information System (WISE). Table 1 (overleaf) shows data for England, Scotland, Wales and Northern Ireland.

The European Commission also recently commissioned WS Atkins to produce a detailed analysis of status and ambitions between 2009-2027 in each river basin in each member state, using the same data source. The results of this analysis are also attached with this document.

France data

“...and could you offer comment on the reasons why France plans to increase its good status from 40% to 67% from 2009 to 2015, while the UK will only go from 24% to 37%.”

Some of the French data may be skewed by uncertainty. Some 30% of their water bodies had uncertain chemical status. By 2015, the French expect the majority of these waters to turn out to have good chemical status, and where this coincides with existing good ecological status then overall status will then be classed as good.

Interim results reported in December 2011 highlighted the lack of progress in one of the most pristine French River Basins (Rhone-Mediterranean and Corsican River Basin), with 50% of rivers still at less than good status. (<http://www.midilibre.fr/2011/12/07/50-des-cours-d-eaux-en-mauvais-etat-ecologique,426986.php>)

Table 1. Achievement of good status and population density for river basin districts in the UK

River Basin District	Good Status 2009	Good Status 2015	Change in Good Status	Area of RBD (km ²)	Population of RBD	Population density of RBD (pe/km ²)
Anglian	18%	19%	+1%	27 890	5.2 M	186
Dee	28%	38%	+10%	2 251	0.5 M	222
Humber	18%	19%	+1%	26 109	10.8 M	414
Northumbria	43%	49%	+6%	9 029	2.5 M	277
North West	30%	33%	+3%	13 140	6.6 M	502
Severn	29%	34%	+5%	21 590	5.3 M	245
Solway Tweed	45%	52%	+7%	17 500	0.45	26
South East	19%	23%	+4%	10 000	3.1 M	310
South West	33%	42%	+9%	21 000	3 M	143
Thames	23%	25%	+2%	16 133	13 M	806
Western Wales	29%	36%	+7%	16 653	1.3 M	78
Northern Ireland (rivers only; % good status relates to water bodies in Northern Ireland only, not IE)						
North Western	30.1%	69.9%	+39.8%	4900 (NI) 7400 (IE)	0.5 M total	41
Neagh Bann	14.9%	48.2%	+33.3%	6000 (NI) 2000 (IE)	0.5 M total	63
North Eastern	13.5%	47.7%	+34.2%	3000	0.7 M	233
Scotland (rivers only)	56%	63%	+7%	113 920	4.8 M	42

15 March 2012

European Commission—Written evidence

Strategic objectives of EU freshwater policy

1. *The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?*

The overarching objective of the Blueprint to Safeguard Europe's Water Resources (planned for 2012) is to ensure good quality water in sufficient quantities for all authorised uses in the EU by 2020. For analytical purposes, we have taken 2050 as long term horizon. The baseline will include a sensitivity analysis based on socio-economic and climate scenarios relying on EU research projects such as FP6 SCENES and ENSEMBLES. A first attempt to combine such scenarios is ongoing in the context of DG ENV funded ClimWatAdapt project whose results will be made available before the end of the year.

2. *How adaptable to emerging new challenges is the current policy framework likely to be?*

The main EU legal instrument on water – the Water Framework Directive (WFD) – is a flexible instrument whose implementation can be adjusted to new challenges because of its framework character with a 6 years cycle for the development and update of River Basin Management Plans.

The question of how EU water policy should respond to potential impacts of global change and climate variability is the core of the analysis of the Blueprint. As mentioned in the background document (section 1.3.), options for adaptation strategies and measures at sectoral and cross-sectoral level will be identified; their ecological, social and economic costs and benefits will be assessed and no-regret measures will be identified. The assessment will pay great attention to cost-effective adaptation of land use and land management measures that strengthen the resilience of water and environmental resources.

Adding value

3. *How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?*

EU freshwater policy has brought about a significant change in Member States water management by introducing a fully fledged river basin management approach with the adoption of the WFD in 2000. It is this Directive that has prompted a step change in water management throughout the EU and provided the Member States with a clear policy objective, a timeline and the main tool for its achievement, i.e. the River Basin Management Plan. Most of the European territory lies in transboundary catchments. In this regard, the added value of EU policy is particularly apparent as it fosters the adoption of consistent approaches and of transboundary cooperation between the Member States that share the same river basins. Member States have been cooperating

for more than 10 years in the framework of the Common Implementation Strategy for the WFD, a process that has brought together periodically water experts to share experience and agree guidance documents for the implementation of the WFD. This forum is highly appreciated and is generally considered as a good example of European cooperation.

While the WFD is at the core of EU freshwater policy, other related directives on Urban Waste Water Treatment, Drinking Water, Priority Substances and Nitrates have all contributed to the improvement of water status throughout the Union. In this respect, the availability of EU structural funds, particularly but not only for new Member States, has played an essential role in the development of urban waste water treatment plans and in the improvement of the quality of drinking water.

As there are big geographic, hydrological, climatic and economic differences between the Member States, the EU water policy is a flexible framework that let the Member States choose the measures they deem appropriate to achieve the objectives agreed at EU level.

The currently conducted Fitness Check of EU water policy is exploring the relevance, coherence, effectiveness and efficiency of the EU freshwater policy. This includes an assessment of the added value of action at EU level. The impact assessment of the policy options for the Blueprint will also pay specific attention to the proportionality and subsidiarity principles.

Future policy

4. In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

The EC will be able to provide a reply to this question as a result of the thorough analysis being undertaken in the context of the preparation of the Blueprint. As explained in section 2 of the background document, developments for EU freshwater policy may be envisaged in the following 7 areas:

- The role of land-use in relation to extreme events and water resources management
- Economic incentives for a more efficient water resources management
- Water efficiency targets and measures to protect water resources
- Governance system stemming from EU water policy
- Knowledge Base for water policy making
- Innovation in the area of water resource management
- Global Dimension of EU water policy

5. What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

As a result of the current the review of the EU Water Scarcity & Droughts policy, the Commission will present in the Blueprint policy options to foster the implementation of the most promising measures to improve water efficiency and address water scarcity and droughts (see section 2.3. of the background document). The Blueprint should provide indicative water efficiency targets at EU level taking into account the great variety of situations across economic sectors and geographic areas. It will also aim at fostering the development of targets for water efficiency (and quality improvement) in the Member States at sectoral and river basin level. The application of certification schemes (e.g. water footprint) is definitely part of the instruments investigated at sectoral level and so is the development of measures on water efficiency in buildings.

Research and innovation

6. *How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?*

As mentioned in the background document (section 2.6), the focus of the Blueprint in this area will be the identification of the main financial, technological, organisational and sociologic barriers to innovation in the area of water resource management, and ways to overcome them. It will rely on and integrate the output of a Water Innovation Partnership.

Other policy areas: agriculture and cohesion

7. *How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?*

The Blueprint will identify means to foster the **integration** of water and other policies, by **improving water resource efficiency** (improving natural water retention in soil and ecosystems, increasing water re-use and recycling, reducing water consumption/pollution at the source) and by **managing trade-offs** through a better understanding of the **costs and benefits** of both economic activities and water resources management.

In the framework of its preparation of legislative proposals for the CAP reform and the new Cohesion Policy the Commission is currently discussing ways to ensure an enhanced integration of EU freshwater policy objectives into the CAP and Cohesion policies.

ANNEX: A BLUEPRINT TO SAFEGUARD EUROPE'S WATERS

BACKGROUND DOCUMENT

The Blueprint to safeguard EU waters was announced by Commissioner Potočnik in his oral hearing before the European Parliament in January 2010. President Barroso endorsed the idea in a press release on the occasion of World Water Day on 22 March 2010¹⁶

DG ENV has launched a large number of studies and reports that are to provide a solid knowledge base for the Blueprint. The latter is expected to take the shape of a Commission Communication accompanied by its Impact Assessment, by a number of reports covering the major strands of the Blueprint and, possibly, by some legislative proposals in the areas of buildings and groundwater, subject to the outcome of the ongoing assessments.

I. POLICY CONTEXT

The EU has already developed for some time a fully fledged water policy that has gradually shifted from addressing mainly health concerns (e.g. quality of drinking water) to the environmental impacts of major water using sectors (Nitrates for agriculture, Industrial Pollution Prevention and control for industry and Urban Waste Water for households).

Since 2000, with the adoption of the Water Framework Directive, water policy has made another step-change taking an integrated approach to water management on the basis of the concept of river basin management aimed at achieving good status of all EU waters by 2015. The 2007 Floods Directive and 2008 Marine Strategy Framework Directive provide further legislative building blocks in the integrated approach to water management.

However, the achievement of EU water policy goals is still challenging due to, inter alia, a number of old and emerging water management issues. According to the EEA, *"Many European river basins and waters have been altered by such human activities as water abstraction, land drainage, and dams. These often lead to major adverse ecological effects and leave limited space for natural habitats. Because of these problems and poor water quality the aim of the Water Framework Directive to achieve good status by 2015 may not be met."*¹⁷

The EEA also points out that the problem is not only related to water quality but also to quantitative issues: *"Water scarcity and droughts have severe consequences for many economic sectors. Over-abstraction is causing low river flows, lowered groundwater levels and the drying-up of wetlands, with detrimental impacts on freshwater ecosystems. Climate change is projected to increase water shortages, particularly in the Mediterranean region. Over the past ten years Europe has suffered more than 175 major floods, causing deaths, the displacement of people and large economic losses. Climate change is projected to increase the intensity and frequency of floods"*.¹⁸

It is therefore clear that a policy response is needed at European level to address the implementation issues related to the current EU policy framework (e.g. the Water Framework and Floods Directives) and to develop measures to tackle in particular water availability and water quantity problems.

¹⁶ IP/10/336

¹⁷ EEA 2010 State of the Environment Report (SOER), Water, key messages.

¹⁸ *Ibidem*

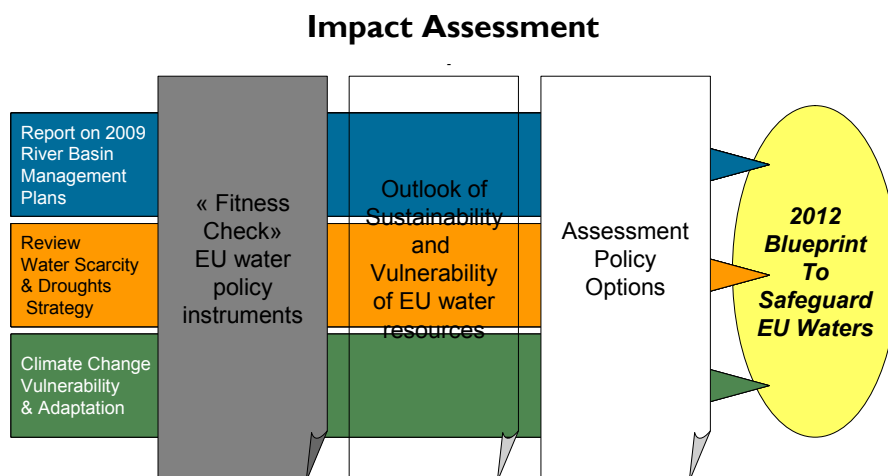
The Blueprint to Safeguard Europe's Water will be the policy response to those challenges with the aim **to ensure good quality water in sufficient quantities for all authorised uses**. The time horizon of the Blueprint is 2020 since it is closely related to the EU 2020 Strategy and in particular to the forthcoming Resource Efficiency Roadmap. The Blueprint will be the water milestone on that Roadmap. However, the analysis underpinning the Blueprint will in fact cover a longer time span up to 2050.

The Blueprint will:

- Assess the implementation and achievements of the current policy while identifying gaps and shortcomings;
- Look forward to the evolving vulnerability of the water environment to identify measures and tools that may be needed in several EU policy areas in order to ensure the sustainable use of good quality water in the EU in the long term.

The Blueprint will put forward policy recommendations building on three on-going assessments: 1) the **assessment of the River Basin Management Plans** delivered by the Member States under the Water Framework Directive, 2) the **review of the policy on Water Scarcity and Drought** and 3) the assessment of the **vulnerability of water resources to climate change** and other man made pressures.

The definition of policy options will also take into account the result of the "**Fitness Check**" of freshwater policy, currently conducted as part of European Commission's smart regulation policy.



I.1 The review of the implementation of the WFD

The analysis of the River Basin Management Plans (RBMPs) will provide information on how Member States have changed their water management since the adoption of the Water Framework Directive (WFD), how the principles and technical elements of the WFD have been incorporated into the legal, administrative and implementation practice in Member States.

The analysis of the RBMPs should also be able to provide a comparative picture of what Member States are doing to tackle the main threats and challenges for water: diffuse pollution from agriculture; hydro-morphological alterations/degradation; chemical pollution; eutrophication; urban waste water; over-abstraction; water scarcity and droughts; climate

change adaptation; etc. It will assess the level of commitment to the measures (e.g. legal obligation v. voluntary nature, financial resources earmarked), and compare the overall level of ambition of Member States' action with a view to identify areas where reinforced or additional action is needed.

1.2 The review of the Water Scarcity and Droughts policy

The review will identify and assess the **adequacy of existing measures** to prevent, manage or mitigate water scarcity & drought situations in the Member States (at national, regional or local level) and carry out an **ex-post evaluation** of the water scarcity & droughts policy at EU level, including the policy options identified in the 2007 Communication

It will identify gaps, suggest – when gaps exist - **new measures or a mix of measures** to deal with water scarcity and droughts issues in the EU and carry out an assessment of the environmental, economic and social impacts of the proposed measures.

1.3 Vulnerability and adaptation of water resources to climate change

The assessment will provide an understanding of the **vulnerability of ecosystems**, infrastructure for economic activity and society at large to changes in water quantity and quality under different **climate and socioeconomic scenarios**. On that basis, options for adaptation strategies and measures at sectoral and cross-sectoral level will be identified; their ecological, social and economic costs and benefits will be assessed and **no-regret measures** will be identified.

The assessment will pay great attention to cost-effective adaptation of land use and land management measures that strengthen the resilience of water and environmental resources, *inter alia* through increases in water retention by soil and ecosystems. This will be part of the **green infrastructure** component of EU adaptation strategy (due by 2013).

1.4 Fitness Check

A preliminary study¹⁹ has explored the relevance, coherence, effectiveness and efficiency of the EU freshwater policy. These preliminary findings will now be the basis for a public consultation and a discussion with stakeholders. A 2nd stakeholder workshop will take place in January 2012. The Commission will publish a final report, early 2012, summarising the findings of the evaluation, in-depth assessments, stakeholder and public consultation.

1.5 Impact Assessment

The **Impact Assessment (IA)** of the Blueprint will bring together the output of the above mentioned assessments, by conducting several cross-cutting strands of analysis, covering gaps and making the link with other studies and research projects²⁰. It will focus on the identification of the key challenges for water resources management, with a high regional and sectoral level of detail, and the identification and assessment of a set of policy options. The Impact Assessment will pay specific attention to subsidiarity aspects and to the cost of the proposed measures and their relation with the financial perspectives.

The **State of EU Water** assessment, to be published by the **EEA** at the same time as the Blueprint, will be a relevant source of information for the Blueprint and its Impact Assessment.

¹⁹ http://ec.europa.eu/environment/water/blueprint/pdf/safeguard_fitness_freshwater.pdf

²⁰ See information on on-going contracts and calls for tender supporting the Blueprint on <http://ec.europa.eu/environment/water/blueprint2012.htm>

2. A NARRATIVE FOR THE BLUEPRINT

The Blueprint will sum up policy proposals and recommendations based on the extensive ongoing analysis to ensure that EU policy is fit to ensure good quality water in sufficient quantities for all authorised uses. This will include measures to maximize compliance with WFD objectives, to tackle Water Scarcity and Droughts (WSD) and to build a robust policy framework to address more frequent and extreme weather events and the potential impacts of global changes.

The Impact Assessment of the Blueprint will lead to the definition of a **policy baseline** and **specific objectives for water resources availability and use**. This will take on board geographical and economic disparities across the EU, and the constraints of restoring and preserving the water cycle and the good ecological and chemical status of all river basins. Based on these objectives, and taking into account the uncertainty on climate and socio-economic drivers, the Impact Assessment will identify and assess the costs and impacts of a set of **strategic measures** for safeguarding EU water resources.

A crosscutting theme of the Blueprint will be the link between safeguarding water resources and addressing emerging challenges at global and EU scale such as food, energy and industrial production; mobility, health and services provision. The Blueprint will therefore identify means to foster the **integration** of water and other policies, by **improving water resource efficiency** (improving natural water retention in soil and ecosystems, increasing water re-use and recycling, reducing water consumption/pollution at the source) and by **managing trade-offs** through a better understanding of the **costs and benefits** of both economic activities and water resources management.

To support this process, the Blueprint will also present a **conceptual model** to be applied to the whole EU, on the basis of available data, representing the **complex interaction of measures and their impact on water availability /demand**. The model will seek the **maximization of net social benefits** from the use of water by economic sectors (including welfare impacts for water users, valuation of key ecosystem services provision, valuation of external costs from degradation of ecological and chemical status and energy consumption triggered by water abstraction and return).

Examples of the key questions to which the model should provide an answer are: what kind of improvement in water efficiency is needed in the medium and long term? Should we expect more emphasis on “end of pipe” water saving or on structural change in urbanisation, production and final water uses? What are the key socio-cultural and legislative barriers that prevent the implementation of economically optimal solutions? Etc.

Policy options enabling the implementation of the most promising measures will be analysed. The Impact Assessment of the Blueprint will pay specific attention to subsidiarity aspects and to the cost of the proposed measures and their relation with the new financial perspectives. Operational objectives and policy options are being identified in **the 7 key areas listed below**:

1. **Land Use**
2. **Economic Incentives**
3. **Quantitative water resources use targets**
4. **Governance**
5. **Knowledge Base**

6. Innovation

7. Global Dimension

2.1 Develop the role of land-use in relation to extreme events and water resources management

Land Use (LU) change is one of the main drivers of the degradation of water resources and vulnerability to extreme events. Multi-purpose **natural water retention measures**, a component of **Green Infrastructure**, are under-exploited. They could provide cost-efficient responses to extreme events while offering additional benefits in relation to other environmental, climate and socio-economic objectives.

Therefore, the Blueprint objective in this area is to develop a positive role for land-use in relation to extreme events and water resources management. This can bring about a **reduction of runoff rates** and the **provision of ecosystem services**: water provision, regulation and purification.

Policy options will emerge from the on going study on natural water retention measures. **Factsheets** are being developed to analyse the most relevant measures that could be widely implemented at EU level (from reforestation to floodplain restoration, including soil management, sustainable urban drainage systems, etc). The Blueprint will identify the policy instruments that can accelerate the implementation of those measures, i.e:

- Guidelines for River basin, flood/droughts risk management plans
- A methodological framework for the wider application of **payments for ecosystem services**
- **Integration into territorial management instruments**: CAP, Structural Funds, local planning, etc. (e.g. protection/compensation of farmers for keeping floodplains, measures for riparian areas going beyond buffer strips obligations).

2.2 Economic incentives for a more efficient water resources management

The focus will be on the assessment of the implementation of the cost-recovery principle, enshrined in the WFD and highlighted in WSD strategy, in particular in the agriculture sector. The consequences of the current lack of internalisation of external costs will be shown. The Blueprint will develop a **consistent approach for the internalisation of costs from water use and water pollution**. The analysis will also aim at estimating the right balance between market instruments and public funding to finance the recovery of environmental and resource costs, and the development of a robust methodology to estimate such costs .

The objective of the Blueprint will be to foster the implementation of **fair and efficient water pricing system**, complementing regulatory instruments.

The options to be developed include:

- More concrete criteria for pricing, taxation, removal of harmful subsidies, etc.
- Setup of **water allocation schemes** (including tradable permits) in water scarce areas.
- Payment for ecosystem services (see above)
- Certification schemes (see below)

2.3 Water efficiency targets and measures to protect water resources

The Water Framework Directive already provides a strong policy tool to address in particular water quality issues. However, EU policy is less developed on water quantity aspects. The Blueprint will show the potential for preservation of water resources, putting strong emphasis on the economic perspective and indicating how the **allocation of water resources** could evolve in the medium and longer term, minimizing social costs and maximizing social benefits.

Technical water savings potentials for different sectors in Europe are known. However, at present, the size of the gap in Europe in 2020 or 2050 between water demand and water availability and the economic savings potentials are still unknown. The on-going ClimWatAdapt project is building indicators of the water gap in Europe in 2020 and 2050 between water demand and water availability, combining climate change and socio-economic scenarios. The Blueprint will build on this information basis to define the margin to improve water efficiency in the EU.

In this respect, the **Water and Ecosystem accounts**, currently developed by the Commission and the EEA, will provide a useful level of sectoral and geographical detail to understand how much water flows in and out of the river basins. This is the basic essential information which is largely missing today to optimize water uses **at river basin level** and look at alternatives, in particular considering material and virtual flows of water between catchments while **integrating the water quality** perspective.

On that basis, the Blueprint will provide **indicative water efficiency targets at EU level** taking into account the great **variety of situations across economic sectors and geographic areas**. It will also aim at fostering the development of **targets** for water efficiency (and quality improvement) in the MS **at sectoral and river basin level** while providing a conceptual framework for robust decision making against uncertainty (e.g. climate change)

The options to be analysed will look at different methodologies for **setting targets at catchment level** (building on water accounts developed by the EEA) and for their inclusion in the WFD implementation process.

The Blueprint will also consider the application of **certification schemes** (e.g. water footprint) at sectoral level, and the development of a recommendation or a directive on water efficiency in buildings.

2.4 Governance of water policy

The key conclusions of the **Fitness Check** (FC) will be taken up in the Blueprint in order to improve the effectiveness, efficiency, coherence and relevance of the different EU water policy instruments. The FC will also provide a set of specific objectives for **improving the governance system stemming from EU water policy**. On that basis, and building on the RBMPs assessments, options to be developed will aim at:

- Supporting an **administrative setup** (at both national and trans-boundary level) that better serves the objectives of water policy, in particular the implementation on the ground (e.g. enhancing the role of River Basin Authorities).
- Improve the **effectiveness of the implementation** (e.g. reporting requirements) while providing the reactive capacity needed to face emerging challenges (e.g. climate change adaptation)

2.5 Knowledge Base

The Fitness Check and a knowledge mapping performed in the context of the impact assessment will lead to concrete policy options to improve the quality of the **knowledge base for water policy making**. These options include:

- Stronger focus of statistical activity on the quantification of pressures on water resources, providing high sectoral, geographical and seasonal level of details;
- Increased use of satellite and land GMES observations for the monitoring of status and impacts;
- Fully-fledged Water Information System for Europe (WISE) providing policy-relevant indicators of sustainability/vulnerability of water resources and information on policy responses;
- Roadmap for water research under the next Framework Programme.

2.6 Innovation

The focus in this area will be the identification of the main financial, technological, organisational and sociologic **barriers to innovation** in the area of water resource management, and on how to **overcome** them. It will rely on and integrate the output of the water innovation partnership.

The options will focus on disseminating (e.g. to the agricultural sector and to SMEs) and integrating the gradual output of the partnership - including the identification of technologies and practices tested on demonstration sites that could be applied more widely - into DG ENV policy development and implementation cycle, as appropriate, and to ensure the implementation of the Partnership's actions to be performed by the Commission.

2.7 Global Dimension

The main focus of the Blueprint is the EU and the neighbouring countries with which it shares transboundary river basins.

The Blueprint will also recognise the global aspects of water policy and reiterate the commitment of the EU to the achievement of the Millennium Development Goals (MDGs) on access to drinking water and sanitation and take into account relevant outcomes of the Rio+20 Conference (May 2012).

In addition to the need to satisfy basic human needs related to water, another major global problem concerns water availability. As recent studies show, "Competing demands for scarce water resources may lead to an estimated 40% supply shortage by 2030".²¹

The Blueprint will suggest that the EU contribute to addressing this problem by supporting **integrated water management in developing countries** (e.g. via the EU Water Initiative).

In this respect, the Blueprint will also address the issue of the **virtual flow of water** embedded in traded agricultural and industrial products. Both virtual water importers and exporters share the responsibility of not depleting water resources in the exporting countries. Mismanagement and wastage of water in water scarce countries could have very negative consequences on local development and even be the cause of migration flows. Therefore, the development of sustainable water management in the exporting countries, e.g. by increasing water efficiency and improving the choice of crops and other products, seems the most promising option.

²¹ Charting our Water Future, McKinsey 2010.

3. CALENDAR & MILESTONES

The target date for adoption of the Blueprint is mid-November 2012. Taking into account Commission internal procedures, this means that the draft Impact Assessment should be ready early June 2012 for discussion at the Impact Assessment Board.

A number of meetings, workshops and public consultations is planned to enable a thorough discussion on the problem description, objectives and policy options to be included in the Blueprint. The most relevant milestones are:

- 14 Sept 2011 PL presidency; Conference on water pricing and agriculture
- October -December 2011: Public consultation on Fitness Check
- January 2012 2nd Stakeholder meeting for the Fitness Check
- 1st semester 2012: DK presidency - Groundwater conference (tbc)
- March 2012: 6th World Water Forum (Marseille) and World Water Day
- March-May 2012 - Public consultation on draft objectives and policy options for the Blueprint.
- May-June 2012: 3rd EU Water Conference, back-to-back with the Green Week
- July 2012: CY presidency: Informal council discussing inputs to Blueprint(tbc)
- November-December 2012: CY presidency High-level conference for the launch of the Blueprint, back-to-back with Water Directors meeting

12 September 2011

European Commission—Oral evidence (QQ 257-278)

Evidence Session No. 10.

Heard in Public.

Questions 257 - 278

WEDNESDAY 29 FEBRUARY 2012

Members present

Baroness Sharp of Guildford (Chairman)

Earl of Arran

Baroness Byford

Earl of Caithness

Lord Cameron of Dillington

Lord Giddens

Baroness Howarth of Breckland

Baroness Parminter

Examination of witnesses

Gustaaf Borchardt, Director, Directorate D—Water, Marine Environment and Chemicals, DG Environment and **Peter Gammeltoft**, Head of Unit, ENV.D.1—Protection of Water Resources, DG Environment, European Commission

Q257 The Chairman: Good morning, Mr Borchardt and Mr Gammeltoft. We are very grateful indeed to you for giving up your time this morning to talk to us, and we are particularly sorry that it has taken us so long to fix up seeing you and that the earlier arrangements did not work out. As you know, many of us came to your presentation, Mr Gammeltoft, at SOAS in London in January. We benefited a great deal from that and we shall be asking you some questions based on some of the things that you said then.

You have in front of you a list of the interests that have been declared by Members of the Committee. You also know that this is a formal evidence-taking session of the Committee and that a full shorthand note is taken. It will be put on the public record in printed form and on the parliamentary website, but before that takes place you will be sent a copy of the transcript and will be able to revise it in terms of any minor errors that you see in it. I should also tell you that this session is on the record. It is being webcast live and will subsequently be available on the parliamentary website.

I do not know whether either of you wants to start with a statement of any sort or whether we just go straight into questions.

Gustaaf Borchardt: Thank you, Lord Chairman, for the introduction and for saying how you want to organise this. If you will allow us, we thought it would be good to give you a

very short introductory statement because many things are happening in this dossier. If you will allow us, we will do that.

The Chairman: Indeed, we would be delighted for you to do so. If you would like to start with that, we will go into questions afterwards.

Gustaaf Borchardt: Thank you very much. We just want to update you in the sense that of course we have read your questions. You have listened to my colleague Peter Gammeltoft, and you know that in this Year of Water, as our commissioner has called 2012, we are preparing the Blueprint, but at the same time we are working on a fitness check on the water policy and on the innovation partnership. These three circuits are coming together in the Blueprint, which will be published in November. They are being developed at the moment. We have had some stakeholder meetings. It is important for us to discuss these important questions with stakeholders. We have done that for the fitness test, and we have had two stakeholder meetings for the innovation partnership, where there was overwhelming interest from stakeholders. Perhaps Peter Gammeltoft can say something about the fitness test and the stakeholders so that you are fully informed about where we are and how we will move forward from that point.

Peter Gammeltoft: I shall say just a few words about where we are now. First, as Mr Borchardt said, the Blueprint will be based on several elements, one of which is the fitness test. We also have an analysis of the long-term pressures on water in the 2050 timeframe that will take in the cumulative effects of all pressures on water: climate change, global megatrends, land use change, demographic change et cetera. Together with the review of Water Framework Directive implementation, an analysis of the river basin management plans adopted by member states, a review of the follow-up policy on water scarcity and droughts agreed in 2007 and an analysis of the vulnerability of water resources will all fit into the Blueprint. Therefore, what we have now is not the full picture.

What has come out of the fitness check? We are almost at the end of the road for the fitness check. We expect to publish a document on it in April. The public consultation is closed. We had the final stakeholder meeting in February, where the message was quite clearly that a lot of progress has been made in improving water quality over the past 10 or 20 years as a result of the implementation of legislation, but it also highlighted that there are problems in many places in meeting the deadlines in the Water Framework Directive. It highlighted that stakeholders consider that the Water Framework Directive is the right instrument to deal with this and provides the right balance, but some have said that they need more time. In addition, our attention has been drawn to a number of issues, in particular, the need for better integration with other policies, such as agricultural policy, transport policy, energy policy and so on. These things came out of the views of stakeholders. They will be subjected to further analysis together with the outcome of the other elements I mentioned.

As Mr Borchardt said, we have had several consultations on the innovation partnership. We had the final consultation in early February with 250 participants from all over the EU. I am happy to say that there was a very positive view of the idea and of the contribution that an innovation partnership could bring not only to the implementation of water policy but to the development of commercialised solutions and European business and jobs in the area of water solutions.

So that is where we are now. We are moving ahead with the Blueprint. In March, we expect to publish a public consultation on policy options for the Blueprint—we are not yet quite there. We will have a major stakeholder conference on 24 and 25 May in Brussels with 400

people, which will also provide us with inputs on policy options for the Blueprint. I do not know whether you have heard that each year we have something here called “Green Week”. The main theme of Green Week this year will be water. In parallel with Green Week, we will have the major stakeholder conference where we will have member states, business organisations, agricultural organisations, NGOs, the community et cetera. From there, we will move on with the Blueprint, which should come out in November.

Q258 The Chairman: Thank you very much indeed. That is very useful background for our questions. Our first question is about priorities. We know that the three main objectives of the Blueprint will be improving implementation, fostering the integration of water and other policies and seeking completion of the current framework. Are the objectives to be pursued in that order or are you going to be pursuing all three objectives together? Going on from that, in April 2011, the European Commission took Belgium, Denmark, Greece and Portugal to court over their failure to submit river basin management plans. What is the current state of implementation of the Water Framework Directive across the EU? Are member states having difficulty with implementation? Perhaps some of the feedback you had at the stakeholder meetings was that they needed more time. What will be the implications for the Water Framework Directive?

Peter Gammeltoft: Let us start with the objectives. I would like to say very clearly that our point of departure is that we are dealing with a mixture of issues. We have some issues of bad implementation—that is quite clear—but it has come out of the fitness check that we have issues of lack of integration. Another issue that has come out of the fitness check that I did not mention before is that there are issues, particularly quantitative water management issues, that are not particularly well covered by the Water Framework Directive, but stakeholders did not think that this is the right time for new legislation. They want us to stick to the Water Framework Directive.

Our point of departure is that what can be fixed through better implementation should be fixed through better implementation rather than through grand new schemes. Also, the problems that we identified that can be fixed through better policy coherence and better integration with other policies should give priority to that way of dealing with them because policy inconsistencies and incoherence are also inefficiencies in all senses of the word.

We will come to a residuum that we cannot deal with efficiently in that way, and that will be the scope for new measures. We will then have to look at the form that such measures would take. The take we have from the fitness check is clearly that, at least in the stakeholder community, there is not much appetite for new legislation, but we will have to see in the Blueprint to what extent we can fix things without new legislation and to what extent new legislation is necessary.

Do you want to continue with this, or should I answer on the state of implementation?

The Chairman: That would be helpful because implementation is a big issue.

Peter Gammeltoft: You mentioned four countries. At a certain stage, there were five countries, but there are now four countries left that have not adopted all their river basin management plans. They are Belgium, Spain, Portugal and Greece. Court proceedings have been opened for all four states, and they are under way. There are many reasons for these delays. At this stage, we know that Belgium, Portugal and Greece expect to adopt their river basin management plans in the current year. We have read in the press that the Minister in the new Spanish Government has stated that he is aiming at adopting the Spanish river basin management plans in 2013. Of course, all these will be late.

From our understanding, there is no common denominator underlying these delays. In some countries, there are difficulties that we would clearly label political. In others that are particularly hard struck by the financial crisis, there may also be financial or economic reasons for currently having other priorities, but there is very clearly a mixture of reasons.

Q259 The Chairman: In terms of the results of the fitness test, how far are you finding that member states are being hit by the current state of their economies? Is this creating problems, particularly in terms of finding the money for capital works, many of which are necessary?

Peter Gammeltoft: We have not had feedback in the fitness check that, as a result of the crisis, there were particular difficulties. The feedback we have had is that there is finance available for investment in these states. There has been more of a sense that it has been an issue of getting priority for these investments in the environment vis-à-vis other investments. This not particularly linked to the economic crisis; this issue is older than the economic crisis.

Q260 Earl of Arran: Good morning. Multilevel governance may well be appropriate for an integrated approach to environmental management, but long-established, top-down structures for water governance, both in the UK and elsewhere in the EU, may contribute to problems in implementing the WFD. Do you agree that governance is critical to such implementation? If so, should the EU have a role in promoting governance systems that are appropriate for easier implementation, perhaps taking into account more flexibility and less rigidity?

Peter Gammeltoft: Thank you for that question. It is a very good question. Governance is critical for good implementation, and it is worth noting that when the Water Framework Directive was adopted in 2000, it introduced a very significant governance reform. First, it instituted the principle that water should be managed at the level of river basin and on the basis of geographic limitations that correspond to river basins. Secondly, the Water Framework Directive foresaw significant involvement of stakeholders in the discussions.

I would like to come back to integration, which we discussed before. Integration very often takes the form of different administrative bodies having different thoughts about what is important and so on. We need a top-down framework to work under, but we also need a system that has flexibility in the basins to identify the right measures and to generate support for them. It is important to realise that the legitimacy of all these different territorial and sector management bodies lies with the support that they have from their stakeholders. Therefore, it is very important to involve stakeholders in the development of measures to be taken to improve water quality so that they can also influence the different bodies. I do not think that because we establish river basin management authorities the territorial bodies and the sector bodies or authorities are going to go away. Clearly, that will not happen. What is important is having dialogue at local and regional level between stakeholders about the benefits and disadvantages of different measures to try to build bottom-up support for the package of measures that is adopted. This is one of the conditions for good implementation of the Water Framework Directive. Governance is critical.

On the promotion of governance, the Water Framework Directive is at the same time top-down and bottom-up. It sets the framework, but it is a framework that leaves a lot of flexibility for management at local and basin level. We have a Common Implementation Strategy that has been agreed between the Commission and the 27 member states. We have exchange of experience that takes the form of the development of guidance documents that

are agreed by water directors in the member states with the involvement of stakeholder workshops and seminars where we get practitioners to exchange information and so on. This is all part of the promotion of good governance. The Commission is ready to continue down this road promoting good governance because we believe that good governance is the way to get improvements in water management.

Q261 Earl of Arran: Thank you very much. You stress the importance of flexibility, but is it actually being encouraged?

Peter Gammeltoft: Flexibility is built in. Let me give you an example. The Water Framework Directive states that programmes of measures under river basin management plans must deal with diffuse pollution, which is pollution without an identifiable point source, but they do not say how member states are going to do that. It is up to river basin authorities. In that sense, the measure will be developed only if the member states or the competent authorities actually exercise the authority that is conferred on them by the Water Framework Directive. It is for them to assess whether there is a need for that kind of measure and to define the measures that need to be taken. There are very few detailed prescriptions in the Water Framework Directive. There are prescriptions about water pricing, but they leave a lot of flexibility for member states. There are prescriptions about licensing water extraction but, again, they leave a lot of flexibility for member states about how to do it.

Q262 The Chairman: Can I just recap what you said? You said that there is a great deal of variation in the way that member states have implemented this, but that you are sharing best practice among member states. Where some are finding implementation difficult, can I take it that you are pointing them in the direction of some of the member states that have been more successful?

Peter Gammeltoft: Yes indeed. That is the whole idea of the process. Those member states that are more advanced in particular areas should share their knowledge and experience with other member states to facilitate implementation in member states that, because of lack of knowledge or resources, are less able to tackle the issues on their own. This is one of the advantages of the Common Implementation Strategy.

Q263 Lord Cameron of Dillington: Good morning. I want to talk about integration, which you have mentioned several times already. Water is the stuff of life and involves every aspect of life. Quite apart from the economic considerations and the affordability of the various policies, which we have already touched on, you mentioned climate change, transport and energy, and I would add science and innovation and even DG Development in terms of more global issues. What are you doing in concrete terms to deliver integration between the different policy areas?

Peter Gammeltoft: We are doing quite a lot. From our side, we are working directly with the other policy areas. One of the big things under discussion at the moment is the Common Agricultural Policy.

Lord Cameron of Dillington: I was going to come on to that in a minute.

Peter Gammeltoft: So we will leave that one. On regional policy, there are proposals out relating to the environment. The new regional policy proposals have 11 objectives, of which three are related to sustainable development. One in particular is related to environment and resource efficiency, so it is clearly a priority for the new regional policy in the EU.

In the area of transport, we have been working to develop guidelines for the Danube and inland navigation. Some years ago, we reached an agreement on conventions. There is an environment convention to protect the Danube and transport conventions for that river. There is a set of agreed guidelines that, if adhered to, should ensure the sustainability of transport on the Danube.

In the area of energy, we have issued guidance on how to deal with hydropower installations—both existing and new—under the Water Framework Directive. Another area where we have been working is the sustainability criteria for biofuels, which you may be aware of since it has come up particularly in the context of climate change.

In the area of development policy, there have also been significant efforts. There has been the EU water initiative, which is still ongoing, which has various geographical components. There is a water facility, known as the African water facility, that covers the so-called ACP countries—the African, Caribbean and Pacific countries. There is the central Asia, the Caucasus and eastern Europe component of the EU water initiative and the Mediterranean component, which to some extent has an overlap with the Union for the Mediterranean, which also has a water initiative, but that is stalled, some say for political reasons, at the moment, and there is the Latin American component. There is something going on here. The EU has put a lot of development money into the ACP water facility in particular. Also, in bilateral co-operation with a number of third countries, water has been a priority. Things are going on in this area. It is part of the plan that we are discussing with colleagues in the Development and Co-operation directorate-general who believe that international water issues are important. These are some examples of what we are doing in terms of integration. At this stage, I leave agriculture to one side.

Q264 Lord Cameron of Dillington: On the integration side, a moment ago you were talking about the compromise position you have between top-down delivery and more localised, polycentric governance. I wonder how you see this compromise working in terms of integration with other DGs and other aspects of life. In particular, is the river basin management side of it still the best form of application? Should we be looking at more local catchment area governance rather than at whole-river sections in a large river such as the Danube?

Peter Gammeltoft: The Danube is a very good example. It is huge. The Danube basin is something like 800,000 square kilometres, which is something like three or four times the size of the UK. Obviously, you cannot have one plan which sets out in detail what has to happen to every polluter and farm and what has to happen in nature management and so on in the whole basin at a very detailed level. Therefore, one has a system of sort of Chinese boxes. There is a master plan for the Danube, which is agreed in the Danube convention, then each of the 14 states in the Danube basin has a plan. We have agreed with the third-country states with which we co-operate that they will also implement the Water Framework Directive on their territory, so that is already a good result, and each of these states, both third countries and member states, has a national plan for its section of the Danube. Under that, you will find local plans. You have a hierarchy of plans. It is like Chinese boxes: you open them up, and you find more boxes inside. In the last box, you will have something that is very concrete and recognisable to those who are having to take measures.

Q265 Lord Cameron of Dillington: Are transport, energy, industry and business aspects all involved at every level? How far down does this integration policy go?

Peter Gammeltoft: Yes, they are.

Q266 Lord Cameron of Dillington: Perhaps now I could move on to land management and the CAP reform, which you have been dying to come on to, I think. The CAP reform seems to be going ahead almost oblivious of the water policy that you are trying to implement. I know your Environment Commissioner has regretted the fact that there has been a missed opportunity to integrate biodiversity and environmental objectives into the CAP reform debate. What are you doing to try to involve water policy concerns in the current land use debate?

Peter Gammeltoft: First, let us have a look at where we are in the CAP debate. The Commission made some proposals in the autumn. There was a proposal for a rural development regulation and a proposal for a regulation concerning the so-called Pillar I direct payments under the Common Agricultural Policy. There has been a lot of discussion about whether they are green and whether they are green enough. What is in them? If we go to rural development, which is the one that has traditionally supported environment measures under the CAP, environment is still in there, but it is also clear that the funds in there are probably not enough to cover all the environmental needs. Therefore, there is also a so-called greening component in Pillar I. I think 30% of payments are foreseen for greening in Pillar I. There is a lot of debate about whether these proposals are sufficient. Other proposals in Pillar I are to include the Water Framework Directive under the so-called cross-compliance system. That means that payments under Pillar I of the Common Agricultural Policy would in principle be contingent on compliance with the provisions under the Water Framework Directive which are subject to cross-compliance.

We believe that there are very good reasons for having the Water Framework Directive in cross-compliance. It is an engine to generate better policy consistency and implementation. It has to be said that when it comes to green payments and rural development, a lot of what will decide to what extent this will support environmental water measures will be in the implementing rules, where all the details will be set out. Of course, the implementing rules can be adopted only once the main regulations are in place, so the discussion about what needs to happen in agricultural policy in order to form an effective support for policy in areas such as water protection and biodiversity is not really over. There are opportunities in the proposals that are on the table. We cannot see the full picture until we see the implementing regulations.

Lord Cameron of Dillington: We will keep our fingers crossed.

Q267 Lord Giddens: Good morning. Thank you very much for coming to speak to us. I hope that I can ask you some questions about the impact of climate change that are slightly different from the ones given on the form but which have the same kind of gist, really. As someone who works in the area, it seems to me that we are making no dent at all on the impact of climate change in the world, because the level of CO₂ in the atmosphere continues to rise and is rising almost exponentially. That means that it is quite unlikely that the lower-level projections of the IPCC will be met. We may be looking at changes in the order of 4% to 5% by the end of the century. That is already under way, which means that it could be much more destructive than we used to hope and anticipate. Against that background, I will ask you these three questions.

First, how can one plan effectively against a background of risk and uncertainty where the level of destructiveness involved in the higher areas of risk is really likely to be pretty dramatic? It is likely to be, or could very well be, something that we have never experienced before. How do you plan for the long term? How do you make investments now for a threat

which the ordinary population cannot even see at the moment? Do you think that a no-regrets policy can get us some of the way?

Secondly, how will we cope with extreme weather events if the level of extremity is much greater than we anticipated? It is possible that there could be storms two or three times more intense than any storms that we have experienced before, alternating with periods of drought, as we know. Certainly, my experience of serving on this agricultural committee is that in agriculture, as in other areas, we operate within a very thin envelope of expectation about weather and the climate.

Thirdly, when you have a policy and it is organised as a Blueprint, how flexible will it be in the light of incoming knowledge? Our scientific understanding of climate change and its impact is evolving all the time. We will have more and more detailed knowledge. How often will you review your risk scenarios, and how will you have a mechanism for carrying out such reviews and in consequence be prepared to alter the implications, depending on which scenarios seem most likely?

Peter Gammeltoft: That was a significant package of questions.

Lord Giddens: Feel free to try to answer.

Peter Gammeltoft: I will try to give as comprehensive an answer as I can. Clearly, you have an issue here with planning for risk and uncertainty. I start by saying that the Water Framework Directive is quite a flexible instrument. It is not one of those instruments where you take a measure once and for all and that is the end of its implementation. There is an implementation cycle of six years, so the idea is that you come back every six years to review the state of your waters, to review the measures and to review whether you need to take new measures. So there is a basic mechanism in there to take account of change.

On climate change, we see its impact as cumulative with other changes, such as the global megatrends that I referred to earlier such as demographic change. I think that the current projections are that we will need to produce 70% more food by 2050 than we do today. We will have 80% more primary energy consumption. We will have a global population growth to somewhere between 9 billion and 10 billion people. Of course, this will all put pressure on resources. Climate policies will put pressure on, among other things, production of biomass, which will put pressure on water. All these trends will increase the pressure on water. It would be a mistake to say that this is all too difficult so we have to do less on water and can no longer be so ambitious. Water is a fundamental resource for life and for our economies. We need to keep the pressure up on water and, as water becomes scarcer in many places, we will need to look after it well. Otherwise, people will suffer from the lack of it.

On how to plan for risk and uncertainty, the only answer that we have at the moment is that it is not enough to look at the six-year cycle. We need to look ahead to see what are the likely long-term trends or risks that we are running and, on that basis, decide what no-regrets measures are available and what sort of investments we should be making. That is what I can say about investments, no regrets and risk and uncertainty.

On extreme weather events, I would draw your attention to a communication that will come out of DG Environment this year about green infrastructure. Green infrastructure has been raised in the contexts of biodiversity and climate adaptation. There are a number of natural water retention measures that will help retain water and reduce flood risks. These could be the re-establishment of flood plains, maintenance of wetlands, the use of salt marshes to protect against marine floods and that kind of measure. These will help a number

of issues. They will help to protect water resources and to strengthen the self-purification capacity of our aquatic ecosystems. They will help to retain water, which will help to reduce the risks of flood and lack of access to water in the case of droughts. I am not saying that we can eliminate the risks of droughts and storms, but we can do something of this sort to attenuate those risks. If CO₂ levels rise dramatically, we are likely to see more droughts and storms and there is precious little that we can do to reduce the number and intensity of those sorts of events. All we can do is protect ourselves. We believe that this kind of measure, which we call green infrastructure, can also help protect biodiversity. They are multibenefit measures: they offer benefits on biodiversity, nature protection, risk reduction, water availability and water quality. They are certainly worth considering in this context. They are not very capital-intensive. They may be labour-intensive at the moment of establishment, but in the current economic climate I do not think that labour-intensity is the problem given the need to create jobs.

On the flexibility of the Blueprint, as I mentioned, we have a review of the plans every six years, and we also have a Commission review every six years of the implementation of the directive, where we review how implementation is going at a European scale. I am confident that with these mechanisms we will be able to address problems as they come. The big challenge here is integrating the long-term challenges that we face and ensuring that these are a priority in the definition of river basin management plans. I am fairly comfortable that the short-term issues will be addressed sooner or later, although there has been some difficulty, as we have seen. What is really important is to ensure that we do not lose the long-term picture when defining the river basin management plans for the next six years.

Q268 The Chairman: I wonder if I could add a question. We have been talking a lot about integration, of course. We have talked about integration in relation to the CAP, and about transport and energy policy. We are becoming an increasingly urban society and there are problems with the degree to which we are concreting over the environment. Do you feel that, at the moment, your plans are sufficiently integrated with the urban development plans? Are we working enough, for example, on urban drainage systems, with the need to provide soakaway resources rather than have everything enter the sewerage systems and the like? Is enough going into thinking about the impact of climate change on the urban environment?

Peter Gammeltoft: We are certainly very aware of the urban issues. What you were mentioning about the sewerage systems—what we do to our water and whether we should let it infiltrate the groundwater instead and boost our water resources at the same time—is all part of the green infrastructure that I mentioned; it was not the example that I mentioned, but it is certainly part of it. The urban environment is a specific priority in the context of the new proposals for regional policy. We have certainly not lost the urban environment issues. They are not out of sight and they are not out of mind. The evidence is right there under our noses. The increasing number of urban sewage floods is evidence that we need either to revamp the whole of our sewerage systems or to find other ways to dispose of our water. If we can dispose of the water in ways that will help to boost our water resources instead of filling up our sewers, we will be on a good road. This is something that we will also be exploring in the context of the innovation partnership.

We have three priorities in the innovation partnership: rural issues, industrial issues and urban issues. Clearly, this is an area of research—we had questions about research programmes in the written questions given to us—and there are research programmes looking into the issue of management of urban water and getting it on a more sustainable

footing that is more in tune with the protection of the environment and resource conservation.

The Chairman: Thank you. We will be coming on to the research questions later.

Q269 Baroness Howarth of Breckland: I want to go back to what Lord Giddens was saying, on the issue of the amount of optimism and pessimism there is around the system. It is clear that, in the discussions about the CAP, any fundamental reform that will take us forward to the point at which we will need to be in order to meet the kind of crisis that Lord Giddens set out is unlikely. I notice that in your document you talk about the balance between economic costs to be borne by states and the costs of improvement. We know that that is a great problem, particularly for those countries that are at the moment not meeting the Water Framework Directive. Among all those pieces of research that you are undertaking, I am interested in whether or not we are looking at how we change behaviour. How do we ensure that everybody, from the highest level in terms of the negotiation on the CAP down to local groups in water basins trying to change local governance, can understand the size and nature of the problem and move forward? Otherwise, I am pessimistic. I think that we could be optimistic—it is the responsibility of all of us—but I would be interested to know what else you are doing to look at the human behaviour issues in relation to water, which link to all the other issues that Lord Giddens has outlined.

Peter Gammeltoft: A lot of this is about public information. We all have old ingrained habits and old habits are, as we all know, difficult to get out of. Sometimes we need information. Public information is clearly a key element of water policy. We have a lot of examples of cities that have run sustained campaigns vis-à-vis their citizens about water. In a number of cities in Spain—this is not a coincidence, because Spain is regularly hit by water scarcity issues—campaigns have been run that have managed to bring down household water consumption from the order of 150 litres per person per day to 100 litres per person per day. There is significant scope to reduce water consumption.

We also need to ensure that farmers are better informed. There is still the possibility of advisory services for farmers, which are key in getting the information across to farmers. We need a mechanism to get through to farmers. I think that we see that the industry is waking up. A lot of big industries that either have direct access to water or are dependent on raw materials requiring a lot of water are increasingly concerned about this. They are beginning to impose requirements on their suppliers for sustainable use of water. For them, this can be both a matter of their security of access to their raw materials and a matter of reputation. Industries are interested in this.

You have a point that this issue still needs to filter in better at the level of political sympathy. There is scope for improvement there. We will not relax our efforts. Maybe we can compare this with what has happened with recycling of household waste. How long did it take to change habits and people's way of thinking? It has taken 20 to 30 years or something like that. I do not think that changing the mindset about water is something that we are going to do from one day to the other. It will require a sustained information campaign.

Q270 Baroness Howarth of Breckland: I suppose that the question that I am asking is: do we have 20 to 30 years?

Peter Gammeltoft: The only answer that I can give is that the longer the wait, the more difficult it will be.

Q271 Baroness Byford: I have a follow-on question. I understand that figures came out recently saying that a third of the water that we use in the EU is wasted. Has the Commission looked at whether that is at a local level and whether, coming back to changing minds, we can get people to use less? Have you had a breakdown of the statistics as to where the water is getting lost or not used in a better manner?

Peter Gammeltoft: It is basically getting lost in all sectors. In my experience, if you go out and ask people whether they are losing water, they all say no. When you start looking at it under a microscope, you find that they are all losing water. We are losing water in agriculture; that is quite clear. Both irrigation techniques and irrigation management leave very significant scope for improvement. The main use of water in agriculture is for irrigation. This is obviously not so much in northern climates as in southern climates, although there are areas in northern Europe—in the Netherlands, Denmark, parts of Germany and parts of the UK—where there is significant use of water for irrigation.

You only have to study annual corporate reports of big companies and what they do for their water savings to see that there is scope for water savings. In households, we are looking at water supply systems where there is a lot of water lost; it depends on the supply system. We are looking at methods to assess how far you should go to ensure a reduction of these losses—this will be part of the issues that we address in the Blueprint. We are looking at water savings in buildings, by which I mean not only the structure and conception of buildings but the equipment that we put into them, such as washing machines, toilets, dishwashers, shower heads and so on.

Particularly in industry, it is very difficult to come up with a universal solution. I think it needs to be considered a bit more in terms of process. All sectors will need to contribute. Our current projections show that water scarcity is increasing in Europe. We have looked at this in terms of different policy scenarios and, even for policy scenarios pursuing all-green policies, water scarcity will still be on the increase, geographically speaking. That means that, in 30 or 40 years from now, significant areas which are now not water-scarce will become water-scarce. If you have what we might call a completely liberalised economic policy, where you take only short-term economic considerations into account, you will have an even larger area of Europe being water-scarce. I do not think that that is particularly surprising. The lesson that we can take from this is that, whatever we do, water savings will be necessary. They will be necessary in all sectors, but they will not be enough.

Q272 Earl of Caithness: Good morning. I want to take you on to the Water Framework Directive and priority substances. Under the current Water Framework Directive, the rules and regulations clearly cannot be met by industrialised, developed, urbanised member states, and exemptions are needed. A lot of witnesses have said that this is the wrong way to proceed, as it discredits the EU to have a directive that is impossible to meet. Yet, at the same time that we have that criticism, we have information that you want to add nine new substances to the list of priority substances, change other substances and add others. That could be expensive to meet and add hugely to the carbon emissions. I put it to you that you have possibly got it the wrong way around. Would it not be more effective to move from the regulator to the receptor, and to control these problems through such items as REACH rather than trying to clear up the pollutant once it has occurred?

Peter Gammeltoft: Allow me to start with the second question, which I think is a key issue. Our point of view, and the point of view of EU policy—this is in the EU treaty—is that one should give priority to the prevention of pollution at source. That is very clear. In the priority substances directive, we identify substances that present a threat to the quality of

the environment at a European level, not a purely local level. Secondly, the directive sets limit values for these substances to be met in the waters. The substances are identified through a serious selection process involving a developed methodology that has been scientifically verified by an independent scientific committee on environmental issues. At the end of the day, we came forward with a proposal for 15 new substances to be included. We had started off the screening with something like 2,000 substances, which was then reduced to 15. Secondly, the limit values that are proposed are all scientifically verified by the Scientific Committee on Health and Environmental Risks. We feel fairly comfortable both that the substances are relevant and that the limit values are the right ones for those substances if we want to protect public health and the environment.

As regards the measures, the Water Framework Directive does not identify the measures. It sets a framework, a rule on these substances for member states, and tough measures that will ensure compliance with the limit values. This provides flexibility for the member states. But you are of course right that in some cases it may be the better option to regulate at the EU level. Here we come to the principle of subsidiarity, to which we are very attached. We should not unnecessarily bring this to a higher level to solve the problem.

I saw in the written questions that the assumption underlying the cost assessment was that everything had to be resolved through treatment of urban wastewater. I would come back to the principle of prevention at source. It is not the only way of dealing with this—sadly, it is the most expensive way of dealing with it—but there are other ways of dealing with this which may reduce the need for resource for additional treatment of urban wastewater. We have a system all across the EU of take-back schemes. We know that take-back schemes for unused medicines are hugely varying in effectiveness; anything from 10% to 90% of effectiveness. So there is a lot of scope to improve and reduce the losses of unsuitable substances. As part of local health policy, health authorities in the member states routinely try to influence doctors' prescription habits to bring down costs and to reduce the risk of the spread of antibiotics resistance. There is no reason, for instance, in areas where other pharmaceuticals are available, that one should not add environmental factors to the basket of possible considerations. These things come at zero cost, essentially. These measures could be taken and would reduce the need for treatment.

At the other end of the spectrum, there probably is a need for some treatment. Of course, the higher the population density you have, the greater your need for this kind of treatment. Some of the substances we are talking about, for instance, inhibit the reproduction of fish. This has implications for other environmental objectives. I draw attention to the European Environment Agency's state of the environment report from the end of 2010, which highlights the increasing interconnection between different environmental problems. This is not just a water problem; it may also end up being a biodiversity issue. If the fish stop reproducing in the water, it will change our ecosystems dramatically with further repercussions on biodiversity. These matters should not be taken lightly. They merit serious attention. While one should refrain from saying that the only option is the most costly option, this needs a serious examination of what preventive measures can be taken. This is the spirit of the Water Framework Directive. There are cost-effective measures available. If there is a problem at the level of the EU, one can use EU legislation for it. But we do not want a system where, because there is a specific problem with a chemical compound in some valley, we ban the compound from use in the whole of the EU. That would be disproportionate. So we need to strike a balance between when EU measures are proportionate and when national and regional measures are the proportionate answers to the process.

Q273 Earl of Caithness: Thank you for that. I would merely say that the more you emphasise the chemical analysis, the less flexibility there is to introduce biological analysis, which might be a better way of going forward, as some of our witnesses have suggested. Would you agree that the proposed Blueprint will mean that there will be more influence from the EU than under the current Water Framework Directive and therefore less subsidiarity?

Peter Gammeltoft: No, I do not think that I can confirm that. The Blueprint will mean that there will be better implementation of what we have got, but the fundamental objective of EU water policy does not change and does not need to change. It is that there are sufficient amounts of clean water available for both natural and economic purposes, and that will remain the overall objective. The Blueprint is looking at whether the measures that we currently have in place are sufficient to reach that objective and whether more measures are needed at the level of the EU or of member states. This is something that we will assess in the context of the impact assessment. We believe that the current structure with regional and local management of river basins is a sound system to arrive at these objectives. Among other things, we are looking at how we need to improve implementation and integration and whether we need to provide more tools, exchange more experience, do more research or improve our knowledge base and so on. There was an initial question about improving implementation and integration and completing the framework. The answer to your question really lies in the answer that I already gave.

Q274 Baroness Byford: In your evidence to us this morning, you were talking about taking more land to be used to prevent flooding and excess water. How do you come to terms with that when we have to produce more food from less land if more land is going out of use while, at the moment, the Commission does not support the growing of genetically modified crops, which would enable us to grow more on less land? I will come back with my other question in a moment.

Peter Gammeltoft: I think that we have to realise that, all over Europe, a lot of our food is imported. I do not think that we can start from the assumption that all food has to be grown in the back garden, if I can put it in that way. There are several options for getting food. One is growing it somewhere else where there is more land. Another is growing it on your own land. One needs to strike a balance because this is an issue of analysing costs and benefits because there are also significant costs related to floods. If we have floods in urban areas, there are significant costs. Very often water retention measures in rural areas can help to prevent floods in urban areas. One needs to strike a balance, but it is also clear that we cannot just say that we export the problem by asking someone else to grow our food; one needs to look at this at a larger geographical scale. The issue of geographical specialisation of production is not new.

Baroness Byford: No, but I am grateful to you for mentioning it because at the moment we are reliant on importing food and, rather like climate change, as we know the population is forecast to go up by so much that we will not be able to buy food from some of the countries we buy it from now because they will need it for themselves. I would have thought that this is something that the Commission, in looking at flooding and the Water Framework Directive, has to bear in mind. I foresee it as a problem. Perhaps it is something that the Commission does not feel is a difficulty.

Peter Gammeltoft: I do not think that that is what I said. You need to assess the costs and benefits—the advantages and disadvantages—of different land uses. Everywhere there is only so much land, and there are different options for using it. The only thing we cannot do is

increase the area of land. National authorities need to look at the best use of the land that they have.

Q275 Baroness Byford: Yes, that is why you were talking about flexibility within member states earlier. I think that is enormously important. My second question is: how are you thinking of using water and land better in future planning systems and do we need to alter the way in which we are currently working?

Peter Gammeltoft: This is a particularly difficult question. Clearly there is a need to change the way we look at land use. I have already made points about green infrastructure, water retention and sustaining biodiversity in a climate that may be changing in a rather unpleasant manner. What is sure is that we will need biodiversity and water in the brave new world. Therefore, we need to look very seriously at to what extent we need to use our land to secure the availability of biological and water resources for future generations.

On the implications for governance, I come back to what I said about mobilising stakeholders. To a very large extent, the problem is between different authorities. You have planning authorities, water management authorities, energy authorities and agricultural authorities, and they are not the same. What they have in common is their dependence on support from a constituency of stakeholders. If we can get the stakeholders to agree on what the right measures are, this will assist the chance of getting agreement between these bodies that very often have a culture of adversity vis-à-vis each other.

Q276 Baroness Howarth of Breckland: Before I move on to the innovation question, I will follow up on the previous question by asking whether you think that the different systems of management—of course, the UK has a particular system of privatised water management, which can cause some difficulties as well as provide advantages—will affect the way that water is going to be available. Do you think that there are better ways of managing the water?

Peter Gammeltoft: The EU treaties are quite clear that they do not impact on property ownership rules in the member states, so this is a debate that has to be had at national level and not with the European Commission. From our point of view, as long as you comply with the EU rules, you are in the clear.

Q277 Baroness Howarth of Breckland: Well dodged. It is just that our witnesses have brought different evidence, so we thought that we would ask you.

Moving on to innovation, in answer to my previous intervention you talked about some of the ideas around changing human behaviour. I thought that you might have talked a little bit about the things that we have in our questions, such as water footprinting for consumer products, water harvesting and using land managers for a variety of ecosystems. I thought you might have included some of those, and wondered if you are going to consider including some of these novel ideas in future water policy and, if so, what form they might take. I wonder, in all that you are doing, whether you think that the water European innovation partnership will add—and what it is going to add—to what you are doing through the framework. You have already talked quite a bit about innovative approaches to water management in answer to earlier questions but, if you have anything else to add, it would be useful.

Peter Gammeltoft: Let me start off with the water footprint and harvesting of rainwater. These are some of the issues that we are looking at. We believe that water footprinting is a

very valuable tool, as it conceptualises the amount of water that goes into the production of agricultural and other goods, such as a car or a cup of coffee or whatever.

Water footprinting is a valuable tool, but we do not yet believe that it has quite reached a degree of maturity where we can take it directly into the regulatory systems and use it for regulatory purposes. But it certainly has an important mission in conceptualising for consumers what are the water implications of their choices.

Secondly, on rainwater harvesting, we are looking more generally at the reuse of wastewater and, in agriculture, treated wastewater reuse, which may become an issue in large parts of Europe. There are clearly issues of public health that need to be dealt with here. We are also looking at rainwater harvesting. I mentioned something about the conception of buildings before, and looking at water efficiency in buildings. Rainwater harvesting is part of the issues that we are looking at in that context.

On innovation in general, I would say that innovation is about not just technology but management, public involvement and providing information to the public. The general idea of the innovation partnership is to try and bring together those who have problems at the operational level, those who have problems to be dealt with at the water management level, the academics or others who can develop solutions and the companies that can commercialise the solutions, so that we can use all the possible communication channels—not just the communication channels of the public authorities but those of commercial companies that are commercialising water know-how or water technology.

The Chairman: The final question is from Baroness Parminter.

Q278 Baroness Parminter: Do you think that there is efficient sharing of knowledge and dissemination of learning about the Water Framework Directive across Europe? Subsequent to that, whether you think that there is or is not, what role do you see for the European Commission in making sure that it is as good as it can be?

Peter Gammeltoft: Some people say that you can never have enough of a good thing. That is somewhat the answer to your first question about whether there is enough. I would say that there is a lot of exchange of information, but you can always do better. Our thinking is that we should be doing better, and should always strive to do better in this respect. We have in place a Common Implementation Strategy for the Water Framework Directive, which was agreed 10 years ago with the 27 member states. In this context, we have regular meetings with all stakeholders. We have a number of working groups on targets and issues. We have workshops, seminars and so on. We have also established a science policy interface and a water information system for Europe on water data and another on research and technological development, in order to bring the latest research to those who need it because we have also identified a gap here. There is a lot of research going on. There is a lot of European-funded research on sediments, chemicals and all sorts of water-related issues. We calculated that, in the past 10 or 15 years, more than €100 million in research funds has been used on water, sediment and chemicals alone. Of course we need to continue doing research on issues that we identify, but the challenge is also getting the results to those who need it. We are working on that, to establish a system of effective and fast transmission of the latest research results. This complements what we are doing in the innovation partnership.

The Chairman: Thank you very much indeed. I think this has been a marathon session for you, but thank you so much because it has been extremely useful for us. We are finishing

just about on time, at noon. Thank you both, but particularly Mr Gammeltoft, for all that you have given us today.

Peter Gammeltoft: Thank you very much. It was a pleasure for us.

European Golf Association Golf Course Committee—Written evidence

Strategic objectives of EU freshwater policy

1. The EGA GCC agrees with the overarching goal. The challenges to be addressed could include provision of adequate supplies of affordable, alternative non-potable, acceptably clean water sources for use by business sectors and the introduction of monitoring programmes required to prevent pollution at source. Golf courses need water to irrigate turf and the golf industry is well aware of the challenges it faces on these fronts.

Adding value

3. Co-ordination of cross border water sourcing, i.e. river basin management, best dealt with at Regional level. Where feasible, encourage cross border co-operation to address water scarcity issues.

Promoting sustainable use of water is, we believe, best dealt with at Member State and Regional level.

Place more responsibility on business by introducing requirements to prove they are following sustainable water management practices should they be applying for planning permission to develop their enterprise.

Government investment in the necessary infrastructure so that golf courses could tap into alternative supplies to potable water for irrigation and other purposes at reasonable cost.

Golf courses are, mostly, small to medium sized enterprises and they would be greatly encouraged to pursue technologies if funding support was available for provision of adequate supplies of alternative non-potable, acceptably clean water sources and the introduction of monitoring programmes required to prevent pollution at source.

Future policy

4. As best practice is developed for each business sector, adapt policy accordingly. Review quality and security issues over time in relation to freshwater use and climate change. Review funding as suitable infrastructure is developed.
5. Awareness, assessment and labelling of water footprint all positive but this will need to be backed by incentives for business to invest in water conservation measures.

Research and innovation

6. Determine the real needs of business in the light of water conservation measures that can be implemented.

Other policy areas: agriculture and cohesion

7. Directives aimed at reducing potential pollution, i.e. Sustainable Use of Pesticides and Water Framework, should be used to support the aims of the “Blueprint”, to try and secure the quality of freshwater supplies.

5 September 2011

Food and Drink Federation—Written evidence

1. This submission is made by the Food and Drink Federation, the trade association for food and drink manufacturing. The food and drink manufacturing industry is the largest manufacturing sector in the UK, employing up to 400,000 people. The industry has an annual turnover of over £72.3bn accounting for 15% of the total manufacturing sector. Exports amount to almost £11bn of which 77% goes to EU members. The Industry buys two-thirds of all UK's agricultural produce.

Strategic objectives of EU freshwater policy

Q1. The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?

2. FDF agrees that ensuring a “sustainable use of good quality water in the long term” should be the overarching goal of EU freshwater policy. In this regard it will be necessary to make sure that both supply and demand can be met, whilst preserving the water environment and the ecology that it supports.
3. As a significant water user the food and drink industry faces challenges with regards to the long-term security of supply, quality and pricing. FDF calls upon the Commission to support national governments in delivering a long-term strategic approach to planning for public water supplies, including infrastructure, for people and businesses and which also protects the environment. Effective water management starts at the local catchment level, but the EU has a role to play in supporting and monitoring progress of national governments in delivering the objectives of the policy as well as reviewing the policy at key milestones. This will help ensure, for example, business growth is not adversely affected otherwise this could jeopardise job security and lead to businesses relocating outside of the EU.
4. An effective “long term” policy should be set at least until 2050, which should include assessing the long-term impact of short-term economic choices.

Q2. How adaptable to emerging new challenges is the current policy framework likely to be?

5. No comment

Adding value

Q3. How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

6. As mentioned under Q1 above the EC does have a key role to play in supporting and monitoring progress of national governments in delivering the objectives of the

policy. It also has a role in ensuring the overall best outcome for management of water systems across national boundaries.

Future policy

Q4. In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

7. No comment

Q5. What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

8. The EU has a role to play in raising awareness of water scarcity, funding research into solutions and promotion of effective water management.
9. FDF advocates that voluntary industry initiatives can make a significant contribution to tackling these challenges. Under FDF's Five-fold Environmental Ambition our members are working collectively to reduce the water used in their operations and contribute to an industry wide target to reduce use by 20% by 2020 based on 2007 levels. We report annually on the progress made by FDF members under a voluntary agreement known as the Federation House Commitment (FHC) administered on FDF's behalf by WRAP.
10. FDF supports the provision of voluntary information on all relevant environmental performance characteristics based on scientifically reliable and EU wide product assessment methodologies covering the most significant impacts along the full life cycle. For this reason we are working closely with our European Association, FoodDrink Europe who are in turn working with other food chain organisations and the EC within the forum of the European Food Sustainable Consumption and Production Round Table ([link](#)). Two main aims of this initiative are to establish scientifically reliable and uniform environmental assessment methodologies for food and drink and to identify suitable tools and guidance for voluntary environmental communication to consumers and other stakeholders.
11. FDF also considers that providing environmental information to consumers should not focus on one impact area unless significant. FDF also believes that businesses should be free to use the means and formats of communication most effective to support informed choice as long as it is in line with the Guiding Principles of the European Food SCP Round Table ([link](#)) and this should not be restricted to labelling.
12. Specifically on water footprinting FDF supports the development of a single methodology to assess the water footprint of a product, which should include the volume of water appropriated and the impact of its use. For this reason we are making input, through BSI, into the work currently being undertaken by ISO to develop an international standard on requirements and guidelines for water accounting and impact assessment.

Research and innovation

Q6. How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?

- I3. A joined up approach bringing together significant water users, academia, consumer groups, technology providers and governments would be the most effective means to support freshwater policy and innovation in freshwater management.
- I4. Research topics could include water recycling in the food industry including the development of appropriate standards.

Other policy areas: agriculture and cohesion

Q7. How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

- I5. Within parts of Europe water is becoming an increasingly scarce resource and that this needs to be taken into account in all relevant EU policy areas. On a global average 70% of all freshwater withdrawals are used for irrigation in agriculture, so clearly the CAP has to address this, both in terms of avoiding run-off and other forms of pollution (through NVZs etc) but also through not giving incentives to use irrigation where alternative crops (or no crops) might be better suited to conditions. This should be seen in the broader context of protecting natural capital.

The UK Food and Drink Manufacturing Industry

The Food and Drink Federation (FDF) represents the food and drink manufacturing industry, the largest manufacturing sector in the UK, employing up to 400,000 people. The industry has an annual turnover of over £72.3bn accounting for 15% of the total manufacturing sector. Exports amount to almost £11bn of which 77% goes to EU members. The Industry buys two-thirds of all UK's agricultural produce.

The following Associations are members of the Food and Drink Federation:

ABIM	Association of Bakery Ingredient Manufacturers
ACFM	Association of Cereal Food Manufacturers
BCA	British Coffee Association
BOBMA	British Oats and Barley Millers Association
BSIA	British Starch Industry Association
BSNA	British Specialist Nutrition Association
CIMA	Cereal Ingredient Manufacturers' Association
EMMA	European Malt Product Manufacturers' Association
FA	Food Association
FOB	Federation of Bakers
FPA	Food Processors' Association
GPA	General Products Association
MSA	Margarine and Spreads Association
SB	Sugar Bureau
SMA	Salt Manufacturers' Association
SNACMA	Snack, Nut and Crisp Manufacturers' Association
SPA	Soya Protein Association
SSA	Seasoning and Spice Association
UKAMBY	UK Association of Manufacturers of Bakers' Yeast
UKHIA	UK Herbal Infusions Association
UKTC	UK Tea Council

Within FDF there are the following sectoral organisations:

BCCC	Biscuit, Cake, Chocolate and Confectionery Group
FF	Frozen Food Group
MG	Meat Group
ORG	Organic Group
SG	Seafood Group
VEG	Vegetarian (Meat-Free) Group
YOG	Yoghurt and Chilled Dessert Group

5 September 2011

French Ministry of Ecology and Sustainable Development—Oral evidence (QQ 308-323)

Evidence Session No. 12.

Heard in Public.

Questions 308 - 323

THURSDAY 15 MARCH 2012

Members present

Lord Carter of Coles (Chairman)

Earl of Arran

Baroness Byford

Earl of Caithness

Earl of Dundee

Baroness Howarth of Breckland

Lord Lewis of Newnham

Baroness Sharp of Guildford

Examination of Witness

Emmanuel Morice, Policy Adviser, French Ministry of Ecology and Sustainable Development.

Q308 The Chairman: Monsieur Morice, good morning. Welcome. Can I say how grateful we are for your agreeing to speak to us in English? We will limit our questions to policy on water scarcity and drought. If I may deal with a couple of formalities, you have a list of the interests that have been declared by Committee Members. This is a formal evidence-taking session of the Committee, so full shorthand notes will be taken and they will go on the public record in printed form and on the parliamentary website. We will send you a copy of the transcript and you will be able to revise minor errors. The session is on the record: it is being webcast live and will subsequently be available on the parliamentary website.

The first question is about your experience of leakage rates. The year 2011 was one of widespread water shortages in France. Can you tell us about the issues of water scarcity in France? Which regions, and which economic sectors, were especially threatened and affected? What is being done to address the comparatively high leakage rates of 26% in France, compared to 7% in Germany and 19% in England?

Emmanuel Morice: Thank you, my Lord Chairman. I am very happy to be here. I hope that my contribution will be useful to your Committee.

First of all, in France we make a distinction between drought and water scarcity. Drought is natural, whereas water scarcity is man-made. Over the 20th century, water scarcity was not

a big issue in France, and drought was considered to be an epi-phenomenon. Of course a few areas, such as the south-east, are used to facing droughts and so are already well adapted to such meteorological conditions. Water scarcity problems significantly increased in the last decades. This can be explained by two reasons: first, repeated droughts in recent years—in 1989, 1991, 2003, 2005 and 2011—and secondly by an increase in abstraction. For this reason, in a few regions water abstraction now exceeds water availability. In regions such as Garonne and Charente with intensive agriculture, where high-water-demand crops like corn have been developed over recent years, there are now water scarcity problems. In concrete terms, the regions affected by water scarcity are now the south-west and the west of France, and the main sector of concern is agriculture.

To respond to your second question, there is a new incentive policy about leakage rates, in place since January. When the leakage rate is too high, there is an obligation on the distribution network to carry out a diagnosis. Thanks to that diagnosis, we will identify leakage causes and measures to improve the situation.

Q309 Lord Lewis of Newnham: What are the causations for your leakages? Is the pipework old, or is another significant factor involved in the leakage rate?

Emmanuel Morice: I am not sure how to respond to this question, but I think that our network is quite old and very extensive. There are a lot of small municipalities in France, which might be the biggest reason why we have high leakage rates.

Q310 Baroness Sharp of Guildford: Good morning, Monsieur Morice. You have talked about the degree to which water scarcity is increasing in south-west and western France. With climate change, this is likely to increase considerably—already you have talked about how the 21st century is different from the 20th century. What plans are being put in place to address this future challenge? What importance will be placed on engineering solutions, as opposed to trying to change people’s behaviours? Are bulk transfers of water across France or from other countries being considered?

Emmanuel Morice: We have put in place three different things to address the future challenge of climate change. First, the Ministry of Sustainable Development, for which I work, published last July a national plan on adaptation to climate change. This is a five-year plan, so it is a first step. The plan is focused on knowledge improvement of the effects of climate change and on public awareness. Secondly, the Ministry is implementing a project called “Explore 70”. This project is a kind of exercise of perspective to estimate the impact of climate change on water resources, so it will test different scenarios of water management and water availability by 2070. Another objective of the project is to identify the most cost-effective adaptive measures to address water scarcity in France in the next decades. Thirdly, the next management and development masterplans developed by our river basin management districts should, in 2016, also take climate change into account in their measures.

On your second question, water savings remain the main priority ahead of other solutions such as engineering. We are trying to change behaviour through public awareness campaigns. Increasing the fees collected by our water agencies in areas affected by water scarcity is a way to raise public awareness of the problem. Water saving is our first priority before engineering solutions. Bulk transfers are no longer being considered in France. It was the case a long time ago in the south-east of France, where we made a lot of bulk transfers, but that is no longer the case. There is no more opportunity to do so.

Q311 Baroness Sharp of Guildford: I believe that in France the local distribution of water and so forth is often linked to the municipal authorities. How far are they playing a part here? How far are local concerns about water shortages or water scarcity being used in order to help to promote behaviour change?

Emmanuel Morice: Our municipalities have a role in water scarcity management to face this problem. I should explain briefly our organisation for water management. As I am sure you know, there are many levels of authorities in France: the central Government but also the regions, the departments and local authorities such as municipalities. For water management there is another important level: the river basin district. There are seven of these on the French mainland.

When there is a drought or water scarcity, the prefect can make by-laws limiting the use of water in a department or a local area. Municipalities have to explain these by-laws to the population and can make other by-laws, or recommendations, in their municipalities to do the same thing as the departmental by-law. They play an important role in raising awareness because, when there is a drought or water scarcity problem in France, we run an advertising campaign at the national level but also at the departmental or regional level, as well as at the local level.

Q312 Baroness Sharp of Guildford: One final question. I believe that the south of France, perhaps particularly the south-west, is projected to suffer quite a lot if climate change were to impact substantially by the mid-century. Are there any plans in hand for meeting these contingencies, or are you waiting on developing these scenarios somewhat further?

Emmanuel Morice: We still need more information and more research on climate change effects. It is true that we can already say that we will have some problems in this region, but we still do not know if it will be a very big issue or if the rain will be heavier in winter, which would help us face water scarcity. First, we need to improve our knowledge of the effects of climate change, especially in this region. However, there are some things that we are starting to do. We work a lot with water users in this region through this regional management plan, called SDAGE, and there are a lot of measures in that plan. For example, in the south-west we have calculated the volume limit that can be abstracted from the river basin, and the authorisations of abstraction must be under that volume limit. We are already starting to change the way that water is used in that kind of area.

Q313 Baroness Byford: Good morning. In your introduction, you defined the difference between drought and water scarcity, and you said particularly that water scarcity is man-made. Would you be kind enough to identify which categories that falls into? In your answer to another question just now, you said that the bulk movement of water is no longer being considered. Can you tell us whether that is because of the cost or if there are other plans? Thirdly, do have any connections that cross borders with other countries to get a supply of water into France itself? I hope that these are not too many questions.

Emmanuel Morice: I will start with the third question. There are no transfers from other countries and no supplies from Germany or Spain. I know that Spain is facing many problems with water scarcity and—I do not know if this is still the case—has been interested in the past in taking water from France. But it is very difficult to put this in place—there are the Pyrenées mountains, so it is very difficult.

On the first question, how distinguish the problems of drought and water scarcity. As I said earlier, drought is a natural thing and we identify it—I do not know how to say this—when

we see that the river levels are very low. When the minimum level is reached one year out of five, we say that we are facing a drought. Even so, 2007 or 2008 was quite a rainy year and we still had quite a lot of problems of water scarcity in the south-west and west of France, but that was not due to a lack of rain. Rather, it was due to excessive water abstraction. We can differentiate between these two phenomena.

Q314 Baroness Byford: My question on that was more on whether it is your urban populations, people living in municipalities, or whether it is business, or whether it comes from drawing water for agricultural purposes. I am sorry that I did not make it clear in my question. Where is the greatest demand coming from?

Emmanuel Morice: It depends on the region and on the time of year. For example, in the summer season, which is the dry season, water demand from agriculture represents 80% of water consumption in the south-west and west of France. This consumption occurs during the dry season when there is no more water in the rivers or in the aquifers. There are no big issues of water scarcity in France during the average year. Shortages arise during the dry season because that is when agriculture needs water, but it is also the time when we do not have enough of it. During the dry season, agriculture is the principal consumer of water, but on average the biggest consumer is industry, such as water for cooling nuclear plants and so on. After energy, supplies are also needed for drinking water and for agriculture at the same level.

Q315 Earl of Caithness: Mr Morice, can you tell us something about your arrangements with neighbouring countries when it comes to water scarcity and drought? You have six river basins in France that adjoin other EU countries. We only adjoin along a little stretch in Northern Ireland, so this is a problem that we do not face. Can you tell us how you cope with it?

Q316 Emmanuel Morice: I am sorry, but I do not think that I will be able to respond to this question because I am not in charge of the management of river basins. I know, for example, that for the north-east borders with Belgium and Germany there is a co-ordinating committee. Of course, our river basin districts stop at the French borders, but there is co-ordination with Germany for the river Rhine. We have discussions with our neighbours to co-ordinate and find solutions. I am very sorry, but I cannot say more.

Q317 Lord Lewis of Newnham: You talked about climate change and potential engineering solutions in your answer to Baroness Sharp. Do you use any form of purification of sea water or anything like that for the production of water?

Emmanuel Morice: Not for the moment. There is a very small project on the island of Belle-Île in the south of Brittany, where there are a lot of tourists during the summer season so it needs to produce extra water. It is the only example in mainland France. Perhaps we have another project on the island of Guadeloupe in the Caribbean for safe drinking water. For irrigation purposes, we are trying to develop the reuse of water from the sewerage system. We are trying to develop this, but that is all. We also provide a strong incentive policy to make people collect rainwater.

Q318 Baroness Howarth of Breckland: You have talked a little about your campaigns to change behaviour and you talked to Baroness Sharp about engaging local groups and communities. Looking at some of the reactions that we have in the UK, I wondered whether your consumers really understand the nature of the problem, whether they blame the Government for not dealing with the leakages or have little understanding of the weather.

What are you doing to engage local communities in the understanding that helps with behaviour change?

Emmanuel Morice: They do not blame the Government for the rate of leakage. They are quite well informed about drought and water scarcity issues. Of course they do not make the distinction between water scarcity and drought, but over recent years we have had a drought in France almost every two or three years—very dry, no rain and very high temperatures—so they have a feeling that something is moving, perhaps already due to climate change. They are well aware of this. Of course, we still need to run campaigns for all the people. In 2005, for example, we had a very big information campaign, with advertising on TV, on radio and in newspapers. They are very effective. Every year when a department makes a by-law to limit or ban the use of water, this limitation or ban concerns people because it means that it is no longer possible to fill your swimming pool—that is forbidden—you cannot wash your car yourself, and so on. Every year, in the regions most affected by water scarcity, there are these kinds of by-laws. People are well informed so they are aware of this.

Q319 Baroness Howarth of Breckland: What about your farmers? I can understand that reaction in urban areas and what you can do at the margins, but in France presumably you have a high water use in agriculture. Some of the issues about pollution come from agriculture, so you have got it looking both ways. What is farmers' reaction when they find that the extraction issue is being challenged by central or local government?

Emmanuel Morice: To be frank, it is not easy. We try to anticipate. There is another by-law in every department called the master by-law, where it is written that when rivers reach a particular level there will be a restriction. There is consultation on this with the farmers and all water users, so there is co-ordination before the crisis and before the drought or water scarcity. It is not very easy for the farmers. Three months before they plant a crop they have to decide what kind of crop it will be, and at that moment we do not know if we will have drought or water scarcity problems during the summer so it is difficult for them to say, "Well, perhaps it would be better for me to plant this kind of crop this year because it will be a very difficult year". We try to anticipate this with climate modelling and by having more information before they choose their crops. We are also trying to put in place what we call the collective management of water for agriculture. In the areas most affected by water scarcity, they will be obliged to put in place this kind of organisation and there will be a volume of water for this organisation, so farmers will have to discuss together how to share this volume among all the farmers in the area. That is a way for them to anticipate or realise that water can be a precious thing and it is important to use it carefully.

Q320 Earl of Dundee: Good morning, Monsieur Morice. How far do you think France's current level of water scarcity affects its ability to carry out the Water Framework Directive?

Emmanuel Morice: Water scarcity is fully taken into account in the definition of the Water Framework Directive in France. In concrete terms, in areas affected by water scarcity, as I said before, we have calculated the volume limit that can be abstracted from the river basin without questioning the implementation of the directive. This volume of water is calculated taking into account the directive's objectives. All the authorisation of abstraction, either for agriculture or for drinking water et cetera, must then be under this volume limit.

Q321 Earl of Dundee: Thank you. Baroness Byford and Baroness Howarth asked about agriculture, which you pointed out accounts for 80% of demand in the south and south-

west—indeed, that should continue to happen, because it is important to continue properly with irrigation. Should the current Water Framework Directive take that on board and adjust accordingly?

Emmanuel Morice: For agriculture, we try to make farmers use less water by helping them to have better irrigation technology that uses less water. In some regions of France, irrigation is still archaic—I mean that it is still very old technology—so we know that we can use better technology. It is a way to use less water and to be okay with the objectives of the Water Framework Directive. Our national agronomy agency, INRA, is working on developing agriculture that has less demand for water. In recent decades we have worked a lot on corn, which needs a lot of water, but we are trying to develop other crops—I do not know how to say them in English, I am sorry—and we know that we can encourage farmers to use these kinds of crops, so it will be easier to be in line with the Water Framework Directive objectives.

A small point is that, because in some small river basins it will not be possible to put all these changes in place, we can help the farmers in those areas to build a dam that gets filled only in winter. That is a kind of substitution of the water that is taken during the summer season by filling a dam in the winter, and this water will be used for irrigation during the dry season. Of course, these dams must comply with the rules.

Q322 Earl of Dundee: Yes, it is extremely impressive that you are doing all these things and thereby implementing the current Water Framework Directive, but it takes two to tango. You have problems that we certainly do not, as Lord Caithness pointed out. You have tremendous demand, not least from the agricultural industry. Should the Water Framework Directive in its current format adjust towards you?

Emmanuel Morice: I beg your pardon. Could you repeat the question?

Q323 Earl of Dundee: Should the Water Framework Directive, as it is now, take into account France's problems, which may be greater than the problems that other EU countries have, and become more flexible towards your difficulties?

Emmanuel Morice: I am very sorry but for the same reason as before—I am not in charge of the implementation of the directive—I am not sure I am able to respond.

The Chairman: That is perfectly fine, Monsieur Morice. You have given us very clear evidence, both in the content and linguistically. We are very grateful for that; it has been most helpful. On behalf of the whole Committee, I express our appreciation. Thank you very much.

Emmanuel Morice: Thank you very much, Lord Chairman. Bye.

French Ministry of Ecology and Sustainable Development— Supplementary written evidence

I. Water resources management in France

In England and Wales, water and sewerage services are provided by private companies, overseen at the national level by an economic regulator (Ofwat) and an environmental regulator (Environment Agency), answering to Government (Department for Environment, Food and Rural Affairs):

- **Can you explain to us the structures for water resources management in France? How integrated are the various water-related functions – water supply, sewage management, flood risk management, fisheries, and ecosystem protection etc?**

In France, water is a “common property of the Nation” and its management falls under public responsibility, shared between Central Government and Local Authorities.

At national level, the Ministry of Sustainable Development coordinates water policy. It is responsible for defining water management policies, including sewage management, flood risk management, ecosystem protection, drought control. It specifies the standards, action plans and inspection for these areas.

Other ministries are involved in water management, such as the Ministry of Health for distributed water and Ministry of Agriculture for fisheries.

These Ministries can rely on the National Water Committee, a consultative body, consisting of elected representatives, users, associations, river basin committee chairmen and women and representatives of State services (82 full members), which participates in defining broad national guidelines.

France is split into different levels of authorities: Regions, Departments, Municipalities and for water management there is another level since 1964, the river basin district.

While French water policy is defined and coordinated at the national level and implemented by the Departments’ Prefects, who represent Central Government at this administrative level, the water management is decentralized at the level of river basin districts. In river basin districts, the river basin committees specify targets and action to be taken every 6 years on a “water management and development master plan – SDAGE”. National and local decisions and authorisations in town planning, regional development, pollutant discharge and water use must be compatible with the content and provisions laid down by the SDAGE.

Water agencies of each river basin district are responsible for funding the actions taken by the local authorities, firms and farmers to improve water quality: developing water resources, combatting pollution and rehabilitating aquatic environments. Their resources

come from the fees collected from water users, according to the “polluter pays” principle. In total over the period 2007-2012 the water agencies have called on €12.3 billion.

- **What are the problems arising for municipalities buying in water and sewerage services as part of syndicates, with no national body to regulate prices?**

There is no national body to regulate prices in France because it is a free competition. Municipalities are responsible for treating and distributing drinking water. They can provide this service themselves (governance) or contract with a private company to do it (delegation):

In France, water sector financing (extraction, treatment, distribution, storage, evacuation and sanitation) is based on two main principles:

- Consumers pay municipalities for the equipment (and maintenance) necessary for the production and distribution of drinking water and the sanitation service ;
- Polluters and consumers pay for the operations carried out to improve water quality (fees collected by the water agencies).

To improve transparency and compare water services of different municipalities, data (price, quality of water distributed, compliance with wastewater standards, etc) have been collected since 2009. The national water committee may make a decision on water prices based on these data.

2. Water availability in France

We understand that 2011 was a year of widespread water shortages in France:

1. Can you tell us about the problems of water scarcity in France? Which regions, and which economic sectors, were especially affected?

In France, we make a difference between Drought and Water Scarcity. Drought is natural whereas Water Scarcity is man-made.

Over the 20th century, water scarcity was not a big issue in France and droughts were considered as epi-phenomena (on average, France is a rainy country, and areas used to facing droughts, like the South-East, are well adapted to droughts).

Water scarcity problems significantly increased in the last decades. This can be explained by repeated droughts in recent years (1989, 1991, 2003, 2005, 2011) but also by an increase in abstractions so that in a few regions water abstraction exceeds water availability. Water scarcity affects regions traditionally not affected by drought such as South-West and West regions, like the Garonne and Charente, where intensive agriculture with high water demand crops (corn, etc.) developed in recent years.

In France, the area covered by irrigation has doubled in the 1980-90's. Irrigation is mainly located in South-West (Aquitaine), South-East, as well as in Mid-Western regions (Centre, Poitou-Charente and Pays de la Loire). All these regions are now exposed to water scarcity.

Irrigation may have a major impact on water scarcity as agriculture principally collects water during the dry season (summer), when available water resources are low (rivers reach their minimum flow and aquifers water table is low) and can represent at this season 80% of the total water consumption. Moreover, only 31% of the volume of water used for irrigation is returned to the environment after final consumption, while the other water uses return almost the whole volume collected to the environment after use (respectively 90% of the water collected by industry and energy production is returned to the environment, and officially, 75% of the water collected for drinking water uses).

2. What is being done to address the comparatively high leakage rates of 26% (compared to 7% in Germany and 19% in England)?

Regarding leakage rate, a new incentive policy is in place since the end of January. When the leakage rate is too high, there is an obligation to carry out a diagnosis of the distribution network that will identify leakage causes and measures to improve the situation. The threshold above which the diagnosis is compulsory depends on the urban density and the water availability of the area (water scarcity prone or not). If these diagnoses are not undertaken, water fees are doubled as a sanction.

This first version of the policy is only focused for the moment on how to upgrade the situation rather than on the results. The policy could evolve towards a result obligation policy depending on environmental context.

The main goal is to raise stakeholders' awareness of the economic and ecological cost of these leaks.

3. Climate change scenarios show a significant increase in water stress for France and bordering countries. What plans are being put in place to address this future challenge?

The Ministry of Sustainable Development published last July a national plan on adaptation to climate change. This five-year plan is a first step to adapt our policy to climate change. It is focused on improvement of our knowledge of climate change effects and on public awareness.

The Ministry is implementing a project called Explore 70. This project is a kind of forward-looking exercise to estimate the impact of climate change on water resources and test different scenarios of water management on water availability by 2070. One of the final objectives is to identify the most cost-effective measures of adaptation to address water scarcity in France in the next decades in a context of climate change.

The next water management and development master plans – SDAGE - in 2016 should also take into account climate change.

4. What importance will be placed on engineering solutions as opposed to changing people's behaviours? Are bulk transfers of water across France or from other countries being considered?

Water savings remain the priority before any other solution, such as engineering solutions.

We try to change behaviour by public awareness campaigns or by increasing fees in areas affected by water scarcity. We also encourage farmers to use better irrigation systems (they can be financed to do so). We work with our national agency in agronomy (INRA) to develop less water-demanding crops. If all the solutions to change behaviour, to use less water demand technologies or crops, are not sufficient, we can help farmers to build dams filled during the winter (of course, so long as these dams are not against the rules).

Bulk transfers are not being considered. Some local transfers were built up many years ago. There is now no opportunity for new transfers, considering their socio-economic and environmental impacts.

5. How well are the problems of water scarcity in France understood by French people generally? Are there any initiatives (by the Government or by other agencies with responsibility for water) intended to improve people's understanding of these problems?

The problems of water scarcity are quite well understood by French people. As a proof, the consumption of water from the water supply network has been decreasing for some years thanks to public awareness, advertising, less water-demanding technology ...

The Ministry of Sustainable Development and water agencies make people aware of water scarcity and of the need to save water, especially in periods of droughts. Campaigns of communication can be organized at national, district or local level.

Domestic use of water is also affected by restrictions and bans taken by prefects during a drought. This helps a lot to increase public awareness.

6. What are the implications of water scarcity for France's implementation of the Water Framework Directive?

Water scarcity is fully taken into account in the definition of WFD environmental objectives. As an example, in areas affected by water scarcity, we have calculated the volume limit you can abstract from a river basin without questioning the implementation of the WFD. Authorisations of abstraction cannot exceed this volume in these river basins.

16 March 2012

**German Federal Ministry for the Environment, Nature Conservation
and Nuclear Safety—Oral evidence (QQ 119-142)**

Evidence Session No. 5.

Heard in Public.

Questions 119 - 142

WEDNESDAY 7 DECEMBER 2011

Members present:

Lord Carter of Coles (Chairman)
The Earl of Arran
Baroness Byford
The Earl of Caithness
Lord Cameron of Dillington
The Earl of Dundee
Lord Giddens
Baroness Howarth of Breckland
Baroness Parminter
Baroness Sharp of Guildford

Examination of Witness

Heide Jekel, Head of Division, Co-operation in International River Basins, Freshwater Management Conventions, International Freshwater Protection Law, German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Q119 The Chairman: Good morning. First of all, thank you very much for agreeing to do this. We are very appreciative, and we have all read with great interest the information you sent us. We recently received the full-blown colour leaflet brochure, which again is very helpful, so thank you. If I may, before we start, because this is a formal evidence-taking session of our Committee, I shall just deal with a bit of formality. First, this is a formal evidence-taking session of our Committee. Full shorthand notes are being taken. The transcript is going to go on the public record in printed form and on the parliamentary website. We will of course send you a copy to revise in terms of minor errors. The session is on the record. It is being webcast live and will be subsequently available on the parliamentary website. I wonder if it would be helpful if you could just give us some general overview of how the system works in Germany, the structure of things, and then we can move on to discussing the Water Framework Directive.

Heide Jekel: My Lord Chairman, distinguished members of the Committee, it is a pleasure for me to be here and to give you evidence. With regard to the water management structure in Germany, we have to differentiate between the federal level and the federal

states level. The 16 federal states have the main competences in water management. The legislative competences are divided between the two levels. The federal level, where I come from, is responsible for the main legislative acts, but the more precise acts and ordinances are done at federal states level. We have a two-tier legislative system.

With regard to implementation of water management in practical terms, the main competences are with the federal states, not at the federal Government level. The only exception is waterways' administration, because inland and sea waterways are managed by the federal Government, our transport ministry, which has its own administration for that purpose.

In the federal states the administrative structure differs a bit; it depends on the size of the federal state and its history. Normally we have a three-tier administrative structure. Each federal state has its own environment ministry. They normally have a middle level that is the district administration authorities, and then there is the county and municipality level. All levels deal with water management but also, of course, with other environmental issues.

In former times, each federal state had its own water management authorities separate from the other environment authorities. More recently, these two authority branches have been merged in most of the federal states; it is only in Bavaria that the old traditional pure water management authorities still exist. I am not sure if this is helpful for a first overview.

Q120 The Chairman: That is very helpful. It really leads directly to the first question, which is: in the UK we have a rather complex mixed economy of private companies overseen by an economic regulator. As we understand the situation in Germany, there are different providers obviously, and you just described the governance structure, but is there an overall water regulator? Where does that sit in the system?

Heide Jekel: There is nothing like that in Germany. The water services, drinking water and wastewater treatment are the responsibilities of the municipalities in Germany in all federal states. In principle, the environment ministries and economic ministries of each federal state oversee that, but it is a pure municipality task. The municipalities can co-operate with private enterprises, and there are different forms of organisation, but in the end the responsibility always rests with the municipalities. Of course, we have exemptions; if we have big enterprises, like our big chemical companies, they take care of their drinking water or water for industrial needs themselves, and often they have their own water treatment plants. However, in principle, from our constitutional provisions, it is a task of the municipalities. We do not have some sort of overall regulator.

Our economic ministry has a certain say in that, to see that the conditions are the right ones. We have an authority at federal states level that looks at the tariffs, not only in the water sector but also for example in the energy sector. They also look at the whole landscape in Germany to ensure that there are no competition problems. But in the end, they do not have the final say.

Q121 Baroness Byford: Good morning. I would like please to ask you a direct question on the environmental objectives and exemptions, because I found this section of your publication very interesting. It clearly says the environmental objectives for the water bodies are set out in Article 4. Then it goes on to say that member states may deviate from this. The thing that slightly concerned me, below that, is that the exemptions are being utilised for 82% of all bodies of surface water. I thought that was very high, and I would like you to comment on it. It obviously suggests that Germany will not meet its objectives. At the moment you are only 10% toward that which you are trying to achieve.

Heide Jekel: That is true. I think our figures are not so different from figures in other member states. We will have problems achieving the objectives of the Water Framework Directive, especially with regard to 2015. We use mostly the extension of the deadlines for achieving the objectives, so it is 2021 or even 2027 already. The problem is that we are living in a densely populated state, and a lot of things have been done especially to the hydromorphology of surface water bodies. We have a situation where quick improvements are not really possible.

We know it is also a question of money. We have a lot of things to do if we want to make the surface water bodies more natural, or at least as natural as possible. That needs a lot of investment. It is a question of money as to why we are not achieving it, but also a question of what the effect of certain measures will be. In a lot of cases we are starting with new measures that we have not tried in the past. We do not know how long especially the water ecosystems need to respond to these measures. It is a cautious approach, but we have rather similar figures as in other member states. We feel like we are in good company, and we can explain it satisfactorily to the European Commission. The European Commission is not happy, of course, with these figures, but from our point of view that is the reality.

Q122 Baroness Byford: Thank you very much. Presumably you will be affected not just by other EU member states but also by other countries that surround you that are outside the European Union at the moment.

Heide Jekel: Of course, as we are in the middle of Europe, we have six big international river basins that we share with other countries. With countries outside the European Union, it is mainly Switzerland and Liechtenstein and, of course, some countries in the Danube basin. We are affected a bit by what happens in their areas. For example, for river continuity, if they do not open the rivers below, the fish will never come up to us in some basins, but in principle I think the main focus on measures and problems really rests at the national level.

Q123 The Chairman: If I may, just to come back on one point, do you think the structures you have now in place are going to work for you? Do you see any changes coming to the governance structures? Do you feel comfortable that what you have will deliver?

Heide Jekel: Of course with a federal state it is a bit more difficult, but the existing structures in the federal states work well. We co-operate with them very closely. With regards to the Water Framework Directive, we have established, together with the federal states, national co-ordination platforms, which have no administrative character and which are not legally binding. Together with the old existing structures and these new platforms, it is a bit of a patchwork approach but it works rather well, and I do not think we will change anything on that in the near future.

Q124 Lord Cameron of Dillington: Good morning. My question follows on from what you just said. Clearly every surface water river basin is going to involve co-operation between not only Länder but also Germany and other member states, as you just said, particularly in the Danube, where you have non-EU states as well. I am trying to establish where you think the boundary line ought to be between the Water Framework Directive and local control. For instance, clearly in the Danube, you have to co-operate with states that are not dictated to by the Water Framework Directive. Every river, of course, is different, and every river has different problems, whether it be over-extraction by agriculture, over-pollution by industry or flooding. Of course, flooding is not part of the Water Framework Directive, although I realise there is a flood risk management directive. I was just wondering how this whole thing played out between where you think the EU

directive ought to stop and where you think local co-operation ought to start. It is a difficult question, I am sorry.

Heide Jekel: This is, of course, a question we always ask ourselves. The Water Framework Directive is a very detailed directive, which goes into a lot of things where you really have to see how much influence is needed from the EU level and how many issues or how much engagement should come from the bottom up. With regard to the river basins, the Water Framework Directive and all the other directives are in principle frameworks. We are moving within this framework. These directives can cover a lot, but in principle they do not cover the real practical implementation in every aspect.

We are doing a lot—for example, in our six international river basin commissions—that goes beyond or adds to the Water Framework Directive. On the Danube, all of the 14 countries that are members of the international commission agreed that they want to implement the Directive whether they are legally bound to it or not. It is really a question of how we can make the provisions of the Directive, even though they are very detailed, even more detailed and as useful as possible with regard to implementation. That is something that has to be dealt with among the responsible administrations. Often the Water Framework Directive or other directives do not help us to achieve this objective to make it more practical and more ready for implementation.

The EU directives are a useful framework but, on the practical implementation and how to deal with it and how to finance it, the EU level can only give some sort of guidance. We do this in the Water Framework Directive sector with regard to the common implementation strategy in the range of guidance that has been developed, and is still being developed, at this level. In the end, it is the decision of each member state and each administration and also down to the local administration. I think that it is fair to say that, for the local administrations, a lot of the provisions of the directives have not come down to them yet or are not understood yet. Of course, the weaker the states are with regard to economic power, the worse the situation is. Even in Germany, I cannot say that all our municipalities really know what the Water Framework Directive is and what is needed by them to implement it. It differs a bit from state to state.

Q125 Lord Cameron of Dillington: Thank you very much. The Water Framework Directive establishes the objective of getting good ecological status achieved by the end of 2015. You say that in Germany you therefore face major challenges over the next few years. Can you tell us more about those challenges and how you are going to face up to them?

Heide Jekel: The challenges with regard to German river basins or German water bodies are very similar to the challenges in other river basins throughout Europe. We still have problems with certain dangerous substances and heavy metals; emerging issues are micro-pollutants from pharmacological users. We have problems especially with diffuse pressures and discharges, especially from agriculture, and especially nutrients. We have a lot of problems with regard to river surface water body hydromorphology and biology. Of course what we also have, which we have to take into account more and more, are competing uses with regard to water bodies. For example, there is hydro-power, but we also want to be more natural and want to restore waters. We have navigation, we have drinking water, so there are different uses. We also have to discuss the upcoming climate change effects. Of course, we have established instruments to cope with each of the challenges and we have some new approaches to cope with them.

With regard to dangerous substances, we have our wastewater treatment plants; a lot of things can be taken out of the wastewater by them. As we find analytical methods, we find

more and more substances in the cleaned wastewater that is discharged back into the river that should not be there. We have discussions on how to improve wastewater treatment with regard to these substances. This is still in the beginning, so with regard to normal wastewater treatment, we will see that our wastewater treatment plants are up to date and that they are functioning. There is a need for some modernisation in some plants. For example, Germany does not have a problem with the urban waste water treatment directive; we comply with it.

With regard to diffuse discharges, especially from agriculture, this is a common problem in the whole of Europe. We do not think that the solution will come from only the water management sector. I think it is also a question of EU agricultural policy and of greening it; the discussions on this reform are ongoing. We do some things—for example, more advisory programmes for the farmers. We use the agricultural environment programmes and the funds provided at the EU level to improve the situation with regard to paying for buffer strips, more refined manure management and things like that.

A really big issue is river hydromorphology. We had a lot of man-made alterations in the past on most of the river stretches; we have a lot of barriers. Migratory fish are not able to reach their old spawning habitats and there is a big need for investment—for example, building fish passes and demolishing weirs and things like that. Of course, it is much more detailed and you can find more information in the brochure, but I do not want to talk too long.

Q126 Lord Cameron of Dillington: Thank you very much; you have done very well in a short period. Bearing in mind we are looking at the overall European framework, do you think the Water Framework Directive is helpful in you dealing with these problems or could it do more? Should the next directive be looking to help you more in some way or do you think all these problems are better left to more practical application on the ground?

Heide Jekel: I think the Water Framework Directive is really a successful directive. It has an EU-wide coherent and systematic approach with regard to water management. It gives us a common framework in which all the states can manoeuvre. From my personal experience, as head of delegation in several international river basin commissions, I can say that the Water Framework Directive was really very helpful to deepen the contact with other member states and to get along with them better. If I can take France as an example, we work together with France in the international river basin of the Rhine, and with the Water Framework Directive the trust among the states has increased significantly. Today it is absolutely normal for me to call my French colleague in Metz and ask him about something, which before the Water Framework Directive would perhaps have caused him a heart attack. That is, of course, a bit exaggerated. It is really a trust building and “We have to talk more with each other” directive. I think that is one of the big, big added values of the Water Framework Directive. It also helps to improve information exchange and experience exchange; there is much more open information from the states. That is certainly one point. This is from the psychological point of view but it is, of course, very important; if you do not like each other, you do not co-operate very well with each other.

Also with regard to some technical issues, especially river continuity, it was never a binding issue with regard to EU legislation, and now a lot of things have been put forward, due to the Water Framework Directive, with a very systematic international approach. Let me, if I may, mention the examples of the master plans for migratory fish of the International Rhine Commission or the new one from the International Meuse Commission. These things are really a result of the Water Framework Directive. That does not mean that the old water

management systems are not useful any longer; on the contrary, the Directive could very well build on them and add new aspects of being more systematic. But it is also a lot of work, more work than before, but I think it is useful work because talking with each other and sharing experience and know-how also help us to spare resources.

Q127 Baroness Sharp of Guildford: We have talked about surface water and I wonder whether I could raise a question with you about groundwater. On page 45 of the brochure that you sent us, you say 70% of your drinking water comes from groundwater. Then you say that, apart from regional exceptions, there are no problems in terms of the volume of groundwater in Germany. The problems that are indicated are the quality problems, which we have talked about. In the UK, our aquifers are being run down quite considerably. I just find myself interested that you seem to feel that you do not have the same problem with the volume of groundwater that we have over here.

Heide Jekel: We are a water-rich country, at least until now. We do not know how climate change will perhaps change the situation in the next decades. We have some dry regions in Germany, for example in the east, where the aquifers or the groundwater bodies are not as big or there is not enough volume, but that is a very local or regional problem. In principle, as you see from the maps, we really do not have a problem with regard to groundwater quantity. With regard to quality, yes we have problems, because of agriculture and because of pesticides and nutrients. But for the moment and I think for the near future we do not have any problems with quantity. We have a strict licence system with regard to abstraction from groundwater, and of course there are competing users and we have to find a balance. Our licences have rather strict conditions with regard to monitoring and everything. At the moment we do not really have a problem with that.

The Chairman: I am conscious that we have Frau Jekel for another half an hour and we have three more questions. Lord Giddens?

Q128 Lord Giddens: Good morning, Frau Jekel. Could I pursue the issue of climate change that you just mentioned, which seems to us to be a really difficult issue that we all have to confront in the future? The waters of the Danube are very low at the moment. There has been a drought across quite large parts of Europe. We do not know if that is a result of climate change, but it is the kind of thing that we have to face up to. I would like to ask you how you think you will plan ahead in a situation of uncertainty. There are many different climate change scenarios; we do not know in advance which ones will be the most valid, although the risks plainly look very serious. We have never had to deal with anything like that before, I think. How would you plan ahead in a situation of uncertainty? It seems to me that we have to invest now in a preventive way to deal with issues that might not become acute for another 10 to 20 years. Where will the investment come from, not just in Germany but in the whole ecosystem, of which Germany is the centre, if we are going to prepare adequately for those issues in the future?

Heide Jekel: Climate change, I absolutely agree with you, is a big challenge. Especially in Germany, in the middle of Europe, we still do not know what will really happen. As you have said, we have a lot of scenarios, and the range between the best and the worst scenario is very big. We have no real view of what will really happen. I think perhaps I could explain what we are doing on the different levels. At the national level, the federal states are examining and checking what is on the table, and they have started to discuss regional adaptation strategies. We already have a national adaptation strategy and have just decided on a national action plan, especially with regard to so-called no-regret measures. On the federal level, no-regret measures mean that they are not especially needed for climate

change but that they are useful anyway. For example, with regard to the building sector and water-saving technologies, this is of course only in the beginning. We have the first effects of climate change. It is clear we have a trend to more storm rainwater in summer, and also in some parts we have wetter winters, so there are more flood issues. But we also have, like this year not only in the Danube but also in the Rhine, the low water season in spring and now in autumn. But we cannot say it is a clear trend.

We have the discussion on a national level; we have the discussion also on river basin management at river basin level. The International Rhine Commission has started to discuss a basin-wide adaptation—I would call it not a strategy but perhaps a concept. We have an up-to-date study on water flows, and different scenarios on the table for the whole basin of this river commission. That is the first of such projects in Europe. The problem is that in the different states the effects are not the same. For example, the dry period in spring was a bigger problem in the Netherlands or in Belgium than it was upstream. The perspectives are not the same. To put this together, especially on the international level, will certainly be a problem.

We also have the discussions at EU level, where the Commission will say something on water quantity and climate change with their Blueprint next year. These are parts of the jigsaw that we have to put together, but it is still very vague. We have to see what we can do in practice. At the moment, it is not really very much that we can do without going too far in one or the other direction.

In the south of Germany, for example, the two federal states of [Baden-Württemberg](#) and Bavaria have already agreed to heighten their dykes because they fear heavier floods and they want to be on the safe side to protect the people and the goods behind the dykes. These are the first views on how to deal with it. Germany can be perhaps a bit more relaxed than the Netherlands, for example, which is mostly below sea level. To put together the different international perspectives and uncertainties is really a challenge. If you are interested, I can give you the links for our national adaptation strategy and the action plan.

Q129 Lord Giddens: Could you just say a little more about what individual Länder might have done; you mentioned the south. Is it mainly constructing dykes, as you said? What other measures are already under consideration?

Heide Jekel: The states are investigating water-saving technologies to do with, for example, rainwater and grey water. All the federal states have a water act provision that rainwater should not go into the sewage system but should be—

Lord Giddens: Recycled.

Heide Jekel: It should be put on the soil so that it can be used for the recharging of groundwater bodies so that it can leak through the soil, or it should, for example, be used to make small ponds or small watercourses in new building sectors—things like that. It is still in the beginning, but it is to be more aware of the amount of water we have and how we could use that better. For example, rainwater re-use systems are getting more and more popular in Germany. If you build a new house, you can choose between separate systems. For example, the rainwater goes through a special filter and can be used for the toilet or the washing machine. This is becoming more popular, but it is of course a question of money; it is not inexpensive to establish such systems. These are some examples.

Q130 Lord Giddens: Can I ask if you are doing anything with the insurance industry? Here there was a concordat between the insurance industry and the Government that lasted many years, through which the private insurance industry covered all flood risk. That broke

down several years ago because of the increasing proportion of floods, so there are massive problems now about how to cover flood risk areas, and some of those areas are very big. For example, most of the whole London basin is in principle in a flood area. Do you work with the insurance industry at all or not?

Heide Jekel: With regards to insurance, for damages by floods there is an established system of the German insurance companies. It is a question of price, but in principle they are able to insure all sorts of flood damages. They have some sort of risk-zone approach. There is a special system where you can give your address and you know in which danger zone you are, and the tariffs depend on that. If you are in a less problematic zone, then of course it is less expensive than if you are perhaps directly on the riverside. As far as I know, and I am not an expert on this, some really problematic sites are not insured because they say it is not possible, but in principle that works rather well. But they are rather expensive, so not all private persons are able to use this insurance.

Q131 Lord Giddens: Can I just ask you briefly in closing my section what you meant by “no-regrets” policy in the context that you used it?

Heide Jekel: No regrets means that we decide on measures that will be helpful if climate change comes or not. They are useful anyway—for example, water-saving technologies.

Lord Giddens: Resilience, in other words.

Heide Jekel: Yes. It means that later on we will not be angry that we went this way.

Lord Giddens: It will not be wasted anyway.

Heide Jekel: Yes, even if it gets colder not hotter.

Q132 The Earl of Caithness: I think that you have answered most of the questions that I wanted to ask, but I have three very quick questions for you. Would you agree that the strength of the Water Framework Directive is that it is a framework directive, and that anything the EU produces in the future should also be on a framework basis? If necessary, you have the 18 other directives that relate to specific matters relating to water. My second question is this: we have had some evidence that the current Directive is too detailed, because you have to tick every single box to meet the good water designation. Would you support a relaxation in some of those criteria? My third question is: we have had evidence that the polluter ought to pay for causing problems to the water. If we take, for example, small farmers, even big farmers, who have not received much in the way of income, if any, in recent years, and people where there is an increasingly old-age population, is it fair to ask them to pay for it? If it is not fair, should it be the Länder, the federal Government or the EU that helps?

Heide Jekel: I think the Water Framework Directive is a good directive. It is a framework directive, a rather detailed frame, but we have now established the river basin management plans and programme of measures for the first time. There are still some open issues, and I think all the member states are not 100% in compliance with this Directive. We would have needed two or three more years to make it in the right way. Some issues have not been solved at EU level although it has been foreseen in the Water Framework Directive, so there are certainly some defects.

For Germany, I can say that from the federal level we are satisfied with what happened in our Länder. I would not change things now. Now, we are starting the second cycle for implementation. We are still in the learning and understanding phase with regard to a lot of

issues. That would mean we should not relax things, and especially not change things, now. The systems have just been established; they are working; the co-operation is working—although it can be improved—and if we now change things again, I think that would be a step back.

From my point of view, we do not need more directives in the water sector. We now have the flood risk management directive and the marine strategy directive, two other frameworks that have to be co-ordinated with the Water Framework Directive, and we have enough to do in the next years. We also have the so-called daughter directives to the Water Framework Directive—the groundwater directive and the environment quality directive for surface water—and we have a big package that we have to deal with in the next years on the basis of the established systems and infrastructure. If you ask me personally, no, not more directives, but do not change the existing system.

On the polluter-pays principle, you mentioned especially the farmers. In Germany, it is clear that not everything has to be paid by the farmers. I think it is not possible. We have also the smaller farmers and the bigger farms. Of course the agricultural sector is already subsidised. With regard to the Water Framework Directive, a lot of our federal states have started good relationships with the agricultural sector. The farmers all say, “Do not come with legislative acts; try to do things in co-operation with us on an eye-to-eye level.” I think that works very well in principle. I am not sure we can cover all the concerns. I do not think so, but if we have to say who pays or who helps the farmers, in Germany it is mainly the Länder level, the federal states. They use the EU agricultural programmes; they use their own financial systems to help the farmers. There is an old tradition in Germany that the farmers are paid not to use manure or fertilisers in water-protection zones, so they get some sort of compensation that they cannot use the soil in these zones as they would like. This is an example of something on which we have decades-long good co-operation with farmers. The federal Government has to foresee that at the EU level the interests of the farmers are represented, but from the federal Government level we have some funds that also could be helpful for the agriculture sector, although the main competences and finances rest with the Länder. I think if the EU, especially with regard to the current discussion on the agricultural policy, could give more orientation and more useful instruments to achieve a better balance at the regional level, that would be very helpful. Those are my answers to your questions.

Q133 Baroness Howarth of Breckland: In your previous answer you talked a lot about innovation and research, which is the area I wanted to talk a little more about. I was interested that you talked about having a competitive position in international markets. I just wondered if you would like to say more about that, because you have said quite a lot about innovative research and the examples that you have of where it has been promoted, particularly through the German Water Partnership, which we are very interested in. We are also very keen to know what you think about the role of the EU in all of this. Do you see value in the proposed European Innovation Partnership on a Water Efficient Europe?

Heide Jekel: With regard to the German Water Partnership, that is of course not a research institution; it is more a central point of contact for international customers. It is more a capacity-building organisation. They are also exchanging views on research but they are not a research body. I think the idea of the European Commission with regard to the European innovation programme is in principle good. It says, “The Commission has no money, the member states should work together and have a better exchange, and therefore a better focus on research and resources so that not everybody is doing the same research projects at a national level.” How would that work? I am not an expert in the research sector, but we have our federal ministry on research, which invests money in that. I am not

sure they would be willing to put their money into a bigger funding pot. That is something that would have to be discussed with them. Research is, of course, ongoing at a national level and at an international level. For example, in our international river basins, we are starting to have more and more cross-boundary projects, which also do some research work. For example, there are the so-called INTERREG projects that we have with the Mosel-Saar river basin countries, so they do together some research things but also very practical things. In principle, I think it is a good idea that we have more exchange on research and that we perhaps organise things together among the member states. Of course perhaps the Commission should see if they could invest more money in that, but that is still an ongoing discussion and I am not an expert in that sector, I am sorry.

Q134 Baroness Howarth of Breckland: From your perspective, do you think what is going on at the moment is effective? Do you have a view at all about the EIP on a Water Efficient Europe?

Heide Jekel: I am not involved in this problem at all. I asked a colleague, who said, “Yes, we will discuss that,” but we are still in the beginning of that. In principle it is a good idea, but I do not know the details.

Q135 Baroness Sharp of Guildford: A little earlier you were saying in relation to the Water Framework Directive that Germany was still very much in the learning and understanding phase. How far do you feel that consumers in Germany understand the problems of water resource management? Who would be responsible for raising their awareness of these issues?

Heide Jekel: I think it is not only Germany that is in the learning and understanding phase but all of the member states.

Baroness Sharp of Guildford: Absolutely.

Heide Jekel: I think we learnt a lot in the last years but not everything is solved yet. That is what I meant, so that I am not misunderstood. The consumers and water management issue is not an easy one. With regards to the Water Framework Directive, of course the Directive requires that the public is more involved and better informed about water management issues. During the implementation of the Directive, our experience is that it is not an easy task to get the broader public aware of these issues. Just explaining the directives to them is really a problem, because they do not understand them. I always use my parents as an example; they say, “Oh, it is your directive,” but if you ask them what is behind it, they do not know. You have to use other approaches to inform the public. If you only use the formal steps brought in by the Water Framework Directive to put something on the internet and give them a certain amount of time for consultation, that will not work.

With the organised public, the organised stakeholders, that works really well. They are really aware of what the Water Framework Directive is, and there are councils and working groups where they take part, but it is not the broader public. The broader public understand for the moment the problems about tariffs: “How much do I pay for drinking water? How much do I pay for wastewater?” These are the things in the mind of the public. The public also understand climate change in principle—that it could have effects on water management and that we may have less water. They see flooding as a problem. They also see, for example, that the Rhine has been very low for many weeks. The ships could only navigate with lighter loads. These things are in their heads, but not in a very systematic perspective. To improve their understanding is a responsibility at the regional level especially.

When we discuss the Directive with the public or our Länder authorities do, the public is not interested in the big-picture issues. The people are interested in what is happening around their corner: “Why are they creating a fish path? Why are they doing this or that? How is the quality of my bathing water around the corner?” You have to get them with their regional interests. If we have a river basin management plan together with France, they are not at all interested in it. In Germany, traditionally, we are not a very transparent country. We are not very used to opening up to the public. That has really improved with the Water Framework Directive, and a lot of our federal states have carried out a lot of good activity, and they are trying more and more to reach the broad public. But, for example, France has made questionnaires for all households and the Netherlands has a much longer tradition in discussing openly with the public, so I think we could be better at that, especially with regard to getting the broader public aware of the issues, but it is a regional task.

Q136 Baroness Parminter: May I ask you a question about water footprinting? In the documentation it states that people should have adequate information to make decisions about the products that they buy, with information about the societal, environmental consequences of production. How reliable do you think water footprinting information is in Germany?

Heide Jekel: This water footprinting idea or approach is still a very new approach in Germany. It is not widely used or promoted. With regard to reliability, that is a question we have to discuss further. I think in principle it is a good idea to tell people how much water was needed to create the product. I am not sure how reliable that is yet. We have not started to discuss that in detail until now. It is one of the tools that could help, but it is not the only tool.

Q137 The Earl of Dundee: Would you predict that in five or 10 years’ time your water management will be even better at a reduced annual cost, taking into account all of the interesting things you have been explaining to us, not least if you distinguish between the useful technology of acting in a certain way for good water management so that a problem that you address is solved and does not recur? If in five or 10 years’ time it is the case that you achieve even better results at a reduced annual cost, that is of enormous help to any future European Union water directive in being able to refer to the good practice concerned.

Heide Jekel: I am sure that in five or 10 years, from a technological point of view, we will be much more advanced. About reduced costs, I am not sure; I hope so. At least for Germany, with regard to the amount of drinking water used, we are in a downward trend. That might help to reduce costs. The rainwater re-use issues certainly will help and will be broadened, but I am afraid I am not able to give you a certain percentage with regard to the trend that will show up in the next few years. I think it is very important that we exchange good practice examples inside the countries but also among the EU countries. That is already starting. We have this science/policy interface. We have, for example with regard to measures in the agricultural sector, several platforms where we exchange views, practical experience and practical examples, but I do not think that necessarily leads to further directives at the EU level.

Q138 The Earl of Arran: A very simple yes or no answer: is household water metered in Germany? Do you have meters in Germany for household water?

Heide Jekel: Yes.

The Earl of Arran: For agriculture as well?

Heide Jekel: That is a good question; in the farmhouses certainly. With regard to water extraction for irrigation, for example, I am not sure we do use metering. If they use drinking water for irrigation, of course there is metering, but they do not pay the same price for irrigation as the normal household rate.

Q139 Baroness Byford: I wanted to come back on the agriculture front. You explained to us earlier that you have a lot of rainfall currently in Germany, so your demand for water being used on crops is perhaps not as high as it is with us in England. In the east and south we are very reliant on growing our food, but only with the additional help of irrigation. Have you any idea of a percentage to be able to help the Committee as to how much water agriculture does use, or is that just too wide of the information you have?

Heide Jekel: Of course we have special crops that need irrigation. It is a very good agricultural area alongside the Rhine, for example, and they have very intensive crops, so there is irrigation. I cannot give you a number, but agricultural irrigation users are not in principle a problem in Germany. We had problems with the dry season this spring and there were some losses in agriculture, but it was not because of irrigation but due to lack of rain. From my perspective, it is not such an urgent issue in Germany, only perhaps in special regional areas. If you are interested to have a figure I can give that to you after our session.

Q140 Baroness Byford: Thank you. That would be very helpful for us. In our country, it is becoming an increasing problem—not in the west; our west is wonderfully wet. We have too much water there, but in the east and the south we are obviously running into great problems and using water very carefully.

Heide Jekel: France has these problems in some areas. They have, as far as I know, some sort of management system with regard to water scarcity. If I find information on that and you are interested, I can send you a link.

Baroness Byford: That would be very helpful. Thank you very much.

Heide Jekel: I will do that. No problem.

Q141 Baroness Howarth of Breckland: If I could go back to the very beginning of the debate that we have had, I was thinking about your answer to Baroness Byford about most of Europe not reaching the targets that they need to reach. I wanted to look at this, going back to the framework, in relation to your other comment that you felt that there should be not too much change to the framework at the moment—enough change, enough directives. Therefore, what is the lever going to be to take us all to the place that we need to be to ensure that the quality and quantity of water that Europe needs are there in the future? If we continue as we are, it is clear from your answers, and answers we have heard from others, that we are not going to reach those targets. What do you think the levers need to be to reach them?

Heide Jekel: I think the targets of the Water Framework Directive are of course very ambitious; I think that good status of all water bodies by 2027, which is the last deadline, is impossible. Nevertheless, the Directive gives us the push to get better. I think there will be real improvements. I cannot say with regard to water quantity because surface water quantity is not really an issue of the Directive, but with regard to groundwater quantity I think it will not help so much. With regard to river ecology and river hydromorphology, I think we will achieve a lot in the next years.

I think we will not be perfect. If I remember the spirit in which the Water Framework Directive was drafted in 1998 and 1999, under the UK presidency, there was perhaps a more ambitious and open spirit than we have now. Later on, all of us thought that in some parts the Directive might be a bit of overkill or a bit too ambitious. That was the perspective then, and we were not yet 27 member states. I cannot say we have given up hope yet; that would be the wrong perspective. We have to be more co-operative and exchange our views and management procedures more, and that can be done, especially with regard to Germany, still better with other countries. We also have to discuss what we can do together to get better together, and not be lonely warriors not talking with each other.

Q142 Baroness Howarth of Breckland: That is very helpful. Just one more tiny thing: does that mean that you think the review of the Water Framework Directive would be better were it more realistic and certainly more flexible in terms of individual communities being able to manage in relation to their specific issues? We very clearly said that the UK has very different issues from large land masses like yours, with rivers running from several countries. We are just really wanting to think about what we can say about the framework that will make a difference to achieving targets rather than having aspirations that do not really take us further forward.

Heide Jekel: I think that, in the 11 years that the Water Framework Directive has been in force, it has proved to be helpful. As I said, the targets are really ambitious, but if we start to re-discuss the water framework now, the whole system will break apart and we will weaken the whole system. I think it is not so problematic that we say they are really ambitious and we are not sure we will reach them. They are a challenge that we have to cope with. If we weaken them, I think all of our ambitions will also be weakened. We are only, from my perspective, in the beginning of the implementation of this directive. We have just finalised the first cycle, so for me it would not be a good approach to question the whole thing now. I would say that we should go through the cycles that are foreseen in the Directive and then evaluate and see if the whole approach was useful, where the weaknesses are and whether we can fine-tune it, but I would not do it now.

The Chairman: I have to say, Frau Jekel, that that is a wonderful note to end on. I think that summarises it perfectly. On behalf of the Committee, I really compliment you on the material you sent us, which we found enormously useful, and on your realistic answers. I think we have been encouraged by the insight you have given us and your focus. I think it has helped us enormously to appreciate the issues and given us some guidance on some of the solutions. We are very grateful. Thank you very much.

Heide Jekel: Thank you very much for the opportunity to speak to you. I hope that it was helpful. If you have any further questions or would like to have more in-depth information besides the things that I already promised to send, please let me know and it would be no problem to send you answers via e-mail.

The Chairman: Thank you again.

German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety—Supplementary written evidence

Water consumption in Germany attributable to agriculture (Question 139):

85 % of water abstractions for agriculture in Germany are provided by wells and groundwater bodies. Only 1 % of all water abstractions in Germany are needed for agricultural purposes.

Irrigation is not an important aspect in German agriculture. Only 560.00 hectares are provided with irrigation systems, i.e. 3.3 % of the agricultural land in Germany. As Germany lies in a moderate climatic zone, there is in principle enough precipitation

Agricultural water consumption has been reduced by 70 % since 1991 due to modern techniques and production processes.

Water scarcity management in France (Question 140):

As I mentioned water scarcity management issues in my evidence and in this regard also France, I offered to send relevant information. The following is publicly available on French internet sites:

France has had dry periods in most of its basins in the last years.

At the end of August 2011 67 French departments had decrees to limit water abstraction or water usages in force, see <http://www.service-public.fr/actualites/00552.html>

There has been an official circular of the French Environment ministry, which explains the situation and the possibilities of the responsible administration well, see http://www.rhone-mediterranee.eaufrance.fr/docs/infos-secheresse/gestion-secheresse/2011/circulaire_mesures-secheresse_18mai2011.pdf.

See also the site of the French environment ministry on the new dry seasons internet site

<http://www.developpement-durable.gouv.fr/Propluvia-le-site-internet-qui> and

<http://propluvia.developpement-durable.gouv.fr/propluvia/faces/index.jsp>, which gives an up to date overview on the situation in France with regard to dryness and restrictions.

The French basins have relevant information on their homepages, see e.g. for the Rhone-Mediterranean basin <http://www.rhone-mediterranee.eaufrance.fr/situation-hydrologique/infos-secheresse.php#AL>, e.g. an overview over all relevant regional decrees and their status or an archive on dry seasons in the past.

There are so called framework decrees of the relevant authorities to steer water management in dry seasons, see for the above mentioned basin <http://www.rhone-mediterranee.eaufrance.fr/situation-hydrologique/infos-secheresse/arretes-cadre.php>

There is some sort of dry season council, they have several monitoring stations to measure the development of the situation, different alert levels etc. The framework decree 2011 can be found by this link http://www.rhone-mediterranee.eaufrance.fr/docs/infos-secheresse/2011/AC-en-vigueur/01_AC_16mai2011.pdf

The precise decree to reduce water usages will be set in this framework. See table of the decrees this year in the table under this link http://www.rhone-mediterranee.eaufrance.fr/docs/infos-secheresse/2011/tab-bord/tabbord_APsechRMed_30nov2011.pdf.

There are for example restrictions to refill swimming pools or to wash cars, but also restrictions for agriculture or the industrial sector are possible.

There are also regional action plans in case of dry periods.

German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety—
Supplementary written evidence

This is only a non exhaustive overview on what happens in France. Much more can be found on the above mentioned sites and there are a lot more links etc. Everything is only in French, as far as I have checked it.

If the committee's members are interested in more details there is certainly a possibility for me to contact a French expert, who will be available to answer questions.

German Climate Change Adaptation strategy

I offered also the links to the **German Climate Change Adaptation strategy** and the action plan, see

http://www.bmu.de/english/climate/adaptation_to_climate_change/doc/42825.php and <http://www.bmu.de/english/climate/downloads/doc/42841.php> (English version of the strategy) and http://www.bmu.de/english/current_press_releases/pm/47734.php (press release on the adoption of the action plan)²². The action plan is at the moment translated into English. The German version can be found via <http://www.bmu.de/klimaschutz/downloads/doc/47641.php>.

18 January 2012

²² A copy of this press release is included with this note.

Frédéric de Hemptinne, The Sustainable Synergies Group—Oral evidence (QQ 204-215)

Evidence Session No.8.

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Questions 204 - 215

WEDNESDAY 8 FEBRUARY 2012

Members present

Lord Carter of Coles (Chairman)

The Earl of Arran

Baroness Byford

Lord Cameron of Dillington

The Earl of Dundee

Lord Giddens

Baroness Howarth of Breckland

Lord Lewis of Newnham

Baroness Parminter

Baroness Sharp of Guildford

Examination of Witness

Frédéric de Hemptinne, Principal Consultant, The Sustainable Synergies Group.

Q204 The Chairman: Mr de Hemptinne, good morning.

Frédéric de Hemptinne: Good morning.

The Chairman: Can I say we are very grateful to you for making the journey to Brussels today and we would like to apologise for not seeing you in person in Brussels on our trip, which did not take place. I would like to just get a piece of geography. Have you come from the Ardennes today?

Frédéric de Hemptinne: Yes.

The Chairman: Was it very snowy?

Frédéric de Hemptinne: A little bit and very cold also.

The Chairman: Right, same here. You may not be familiar with the ways of the House of Lords, but it may be that afterwards you would like to present us with further evidence in writing and we would be very pleased to receive that. Before we go to the questions, perhaps I could just deal with a number of formalities. The first is that you should have before you a list of interests that have been declared by Committee Members. This is a formal evidence-taking session of the Committee. A full shorthand note will be taken. This

will be put on the public record in printed form and on the parliamentary website. We will send you a copy of the transcript and you will be able to revise it in terms of minor errors. The session is on the record and it is being webcast live and will be subsequently available on the parliamentary website. I wonder if I could ask you to start by saying who you are and a few brief words about your background and experience.

Frédéric de Hemptinne: My name is Frédéric de Hemptinne. I am Belgian. I am a 48-year-old life science engineer. My first job was in research about water disinfection and then I have moved to EU affairs. I first worked for 11 years in a consultancy on EU projects and studies. At that time, I was involved in the accession countries to assist them in implementing the EU environmental acquis. Then I moved to the EU lobbying business, working for Eureau—the representative body for water services operators—where I was secretary general from 2004 until 2007. I then set up my own consultancy. I have worked a lot for the European Water Association, which is a bit different from Eureau in the sense that it represents the community of actors involved in river basin management. Besides that, I work also to develop EU-funded projects on environmental matters in Europe and in Africa.

I would like to stress that I am a non-native English speaker, so I apologise in advance for any mistakes I will probably make. I would like also to stress that I will talk in my personal capacity representing no association, so it is really my personal view as an independent observer of EU environmental policy-making for some years.

Q205 The Chairman: Thank you very much. I think in many ways that makes you the perfect witness. I will take the first question, which is really about good ecological status. The Water Framework Directive's aim is that good ecological status should be achieved in all watercourses by 2015, which obviously requires compliance with a large number of parameters and there is also this absolute "one out, all out"—something we have heard about a lot in this inquiry. I have two questions, if I may. First, can you tell us about your knowledge of the implementation of the WFD across member states? What are the greatest difficulties member states are facing and why? Secondly, is it sensible to define good ecological status in a way that makes it so difficult to achieve? Should there be greater flexibility to take account of the different factors in the different member states?

Frédéric de Hemptinne: On your first question, you probably know that there are a lot of studies and assessments going on now at the European Commission to prepare the Blueprint, so I will not pre-empt the outcome of those, but I will give you—if this sounds okay in English—my aggregated feelings based on my experience. Personally, I see four key obstacles. The first is the budget. You may remember that the Water Framework Directive was adopted on the assumption that better co-ordination would be enough to provide the ecological quality we are expecting, but none of the member states ever said at that time that it would increase its budget to implement the Directive so it was not clear from the beginning. Now we know that there are a lot of unexpected costs, so that is a problem. I think the Water Framework Directive was adopted without any impact assessment, and this difficulty was underestimated. The second point, I would say, is the importance of the change. The Directive has entailed a lot of change. The first change was this river basin management approach, which was new for some countries. Also, it has required a lot of work to collect and aggregate data, which is never easy. It requires a lot of work to bridge the different administrations and actors to share the data. The third change was also to create solidarity at river basin level, which is quite a big change. I think the scale of the change it required also was something that explained the difficulties. I would say also that some of the concept was not very clear from the beginning. I am not questioning the design

of the Directive, but with some of the concepts I think, like water bodies, there was a lot of discussion about what a water body is in practice and there were the same questions about environmental and resource costs. Some of these concepts were clearly defined in the Directive but proved to be quite difficult to implement and to enact in the field. The fourth obstacle was that the Directive, as it entails a more comprehensive approach, has revealed new problems that were a bit unexpected in the beginning. These are my four points about the difficulties we met with the Water Framework Directive.

Concerning good ecological status, I understand we have been working on that at EU level since the beginning of the common implementation strategy, so a lot of effort has been invested in defining good ecological status and good ecological potential for a heavily modified water body. It is quite legitimate to ask whether all these efforts are worth investing in, but I would say that this has to be seen as essential progress introduced by the Directive which takes ecological quality as the ultimate criterion for assessing the state of water ecosystems. That was really clear progress. But ecological systems are not simple—indeed, they are quite complex—so the assessment cannot be simple.

Behind this question of good ecological status, there is also a question about compliance and how you are going to assess the compliance of member states and the status of trans-boundary basins. It would be not acceptable that the status should change just when the water crosses a border. It is a very serious issue. I understand the frustration people may have with this good ecological status, but it is certainly worth pursuing. From my point of view as an EU observer, nobody in Brussels has questioned the value of this approach. Personally, I agree that it is still worth keeping this as an objective.

I am concerned about the climate change impact. Will the climate change impact turn all that upside down? Can it damage all the effort we have invested in that? That is one problem. The second problem I see is: what is really the objective behind this good ecological status? Are we trying to go back to a sort of pristine state, or do we want to keep the ecological system functional? I believe that going back to a sort of pristine state is a lost battle, but keeping the ecosystem functional is probably vital for the future.

The Chairman: Thank you very much.

Q206 Baroness Sharp of Guildford: Good morning. In the article that you published in the EWA's *Yearbook 2010/2011*, you said that EU water legislation is a “coherent and mature package”. I wonder whether, given the remarks you have just made, you actually consider that there are not quite a number of continuing problems and particularly perhaps between the older sectoral directives and the Water Framework Directive. Secondly, what is your view of the European Commission's concern that priority substances are causing significant problems? Are they from point or diffuse sources? Thirdly, how can the Water Framework Directive be shifted fully to an ecosystems approach and away from chemical standards, particularly given that the proposed new priority substances directive would be amending Annex X of the Water Framework Directive? Given the remarks that you have made, I think it is fairly clear that some of these problems are ones that you see as being ongoing issues.

Frédéric de Hemptinne: When I wrote that EU water policy is a “coherent and mature framework”, I meant that all the expected legislation was in place and, just from a consultant point of view, it is quite a comprehensive coverage. It is a good idea to have liaison with the maritime strategy. Now, the question behind that is where we are with implementation.

On your second question about the sectoral directives, yes, there were some problems concerning the co-ordination between the sectoral directives and the Water Framework Directive. For instance, an issue we discussed a few years ago was the link between the ecological status and eutrophication. For instance, if the water does not have good ecological status, does it mean that there is a eutrophication problem, in which case the urban wastewater treatment directive would require you to invest in tertiary treatment. But I would say that is a point of detail compared with the problem of implementation of the sectoral directives. If you go back in time, you see that those sectoral directives were supposed to be fully implemented by the time the first planning cycle started, but that was not the case.

For me—and I think this view is shared by almost everybody—there is enough legislation on the table today to start working with; the problem is about implementation. Quite often here in Brussels, the Commission repeats that its first priority is about implementation, the second priority is about integration and the third one is new initiatives, but not necessarily legal initiatives. For instance, the Water Innovation Partnership is something that could take the lead. The Blueprint will end in 2012, but what will happen afterwards? Maybe the Innovation Partnership will keep the move going on. Certainly, you should keep in mind that today we are giving a lot of attention to the past and to the present, but the future is also knocking at the door because the first step of the second planning cycle is approaching. It is the Article 5 analysis, which will characterise the river basin districts and review the environmental impacts of human activities. This first step is for next year, so probably there will be also a lot of thinking on how to incorporate the feedback we have from this first planning cycle, which is not yet completed because the deadline for making the plan operational is only this year. We are really, as you say in English, in full swing.

Q207 Lord Lewis of Newnham: Thank you very much indeed for what you are saying, which has been extremely useful. Could I just refer back to one point that the Chairman did ask of you, and that is the parameter and concept of “one out, all out”? How do you view this particular point, which is important from the point of view of classification of rivers?

Frédéric de Hemptinne: I am sorry, but I do not understand your question.

Lord Lewis of Newnham: Well, if I understand it correctly, sir, when we are looking at the monitoring of a system for a whole variety of different type of effects, one of them—the lowest common denominator, if I may put it that way—governs the state given to the river or water.

Frédéric de Hemptinne: I would say that ecological status is not just one of them but the cornerstone. It is the ultimate objective to be achieved. The idea of that was that—and I agree with this—it is probably the best way to integrate all the effects on the ecosystem. Sorry, I do not know if I answered your question.

Lord Lewis of Newnham: Thank you very much, that is fine.

Q208 Baroness Howarth of Breckland: Could I just put it in a slightly different way? If you are assessing the ecological status of a river and you take a chemical sample as a denominator, that is, if you like, the “one out, all out”, whereas if you look at the whole status of that river it might well be that the biological and marine life in that river is showing that it is of a much better status. Are there not other ways of measuring the river other than just one? I think that is what my colleague is trying to get at.

Frédéric de Hemptinne: Well, it is not that simple. As you know, the ecological status, despite all the efforts we have made, is still from partial assessments. That is one point. The second point is that if there is an impact—let us say, a chemical coming into the water—there might be a time lag, and it may take some time for chemicals to produce their effects on the ecosystem. It will take some time to accumulate before it finally ends up somewhere. There is no simple correlation between ecological quality and chemical quality. The third point is that, if there is a problem with the ecological quality, then probably you will question where it comes from and then you will need the chemical quality. I can understand that it would be much simpler to say just look at the ecological quality and not care about chemical quality, because monitoring is a real burden. I am not an expert on monitoring, I am not sure that it can be optimised, although perhaps it can in some cases. But, as I said at the beginning, ecological systems are quite complex and there are no easy ways to manage that.

Q209 Baroness Sharp of Guildford: Can I come back to the third question that I posed to you? I think our worry is that perhaps chemical quality takes priority over ecological quality. In particular, given the new priority substances directive and the revisions that are likely to be made to that, priority is being given to the chemical side rather than the ecological side.

Frédéric de Hemptinne: Priority substances are a very difficult issue. With priority substances, there are three key points: first, monitoring the so-called environmental quality objectives; secondly, identification of the substances—both those points are well addressed in the existing proposal; and, thirdly, and in my view this is much more important, emission control. Concerning your precise question, I am not an eco-toxicologist and I do not see a way to assess the impact of priority substances via ecological quality only unless the impact was so bad that the ecosystem was almost dead. It is just a matter of changing the equilibrium. With priority substances, you have to understand that these are very complicated substances because they are acting at very low concentrations and they are not always soluble in water. Sometimes they are on sediments; sometimes they accumulate in biota; sometimes they are soluble in water. To make it even worse, some priority substances have metabolites and the metabolite can be even more toxic than the substance itself. It is a very complex issue. You cannot escape from setting up an effective monitoring system on chemical quality to understand what the impacts are on the ecological quality and how the deficits can be addressed. Maybe in some cases, if there is absolutely no chance to find a specific pollutant in a water body, you could skip the analysis.

Baroness Sharp of Guildford: Thank you very much.

The Chairman: I would just say we have our witness for probably another half an hour and we have five questions, so I think we need to maintain a pace.

Q210 Lord Giddens: Good morning and thanks very much for speaking to us. Feel free to answer my question briefly. It is to ask you to expand a bit on the Water Framework Directive. The European Commission said that the Directive has transformed water management and brought it to the attention of a much wider range of political stakeholders. I think you agree with that in your evidence, so maybe you could expand a bit on that. Could you tell us just a bit about what differences across the EU—cultural and other differences—that impact on the Water Framework Directive, since obviously Europe is such a diverse continent and the issues involved in the UK are totally different from those in other parts of that subcontinent?

Frédéric de Hemptinne: To answer your question, from my position in Brussels I would stress the fact that the perception of water issues has dramatically changed over the last years. I do not know whether this is all due to the Water Framework Directive because in other parts of the world also I see an increase of interest in water—take Australia as an example. But what is quite sure is that the Directive has tabled a set of sensible principles and nobody is questioning these principles. You can question the implementation or the details, but there is no questioning the principle in itself.

On the second part of your question, from my point of view one of the successes of the Water Framework Directive is that it has brought water stakeholders together. Previously water people used to not be in the public eye and were quite isolated. The fact is that the water infrastructure is underground, so it is not prominent and people do not know about it. The Water Framework Directive has changed that. It has brought new actors into the water business. I remember people from Coca-Cola, which is a big corporation, saying at a conference, “Previously, our aim was to be smart with water uses”. This means that they were looking only at their own issues in complete ignorance of the implications it might have for the rest of the water system, the wider implications. They have a changed attitude and now they want to get actively involved in the river basin management community. It is a very different attitude. Perhaps the biggest change induced by the Water Framework Directive is to try to create a sort of solidarity at basin level. Certainly, I really believe that the Directive has been successful in this respect.

Probably, the main regret that people have is that the general public is not very aware of water issues. From my point of view here in Brussels, I have never seen any member states reporting a big success in public consultation. Even where member states, like France, have really invested a lot of effort to try to go to the people, people are not very keen to be involved. I would not blame the Directive, but the general public probably has enough problems like that and they do not pay a lot of money for water. It remains true however that there is a growing interest for water among from business actors: if you look, for instance, at the common implementation strategy, you see more and more lobbies are willing to be represented there, including energy and inland navigation as well as, of course, agriculture and aquaculture. There is a wide and increasing range of stakeholders willing to be involved, and this is certainly a success.

Q211 The Earl of Dundee: Good morning. Given that in England and Wales water management arrangements are both privatised and centralised, are the Water Framework Directive’s requirements perhaps rather inflexible?

Frédéric de Hemptinne: I do not believe so. I have not heard many complaints about lack of flexibility in the Directive. In my view it gives a lot of flexibility to adapt to local circumstances. I have more heard about people complaining about the lack of precise requirements, which is the other side of the coin. Concerning the UK, first I would say that the chance—if I may say that—for the water sector is that there is a wide diversity across Europe of institutional structure. If you compare water with energy or gas or telephones, in water you will find all kinds of arrangements so it is very interesting to observe. Concerning the UK, what is typical to England and Wales is that you have big regional privatised companies. I can observe in Europe a trend to make water companies bigger and bigger because they need to have more capacity, but the drawback of having a regional privatised company is that maybe you undermine the ownership of the issue. If it is regional, it is not local any more, as it used to be, and if it is privatised people may say, “We pay for private operators to do that, so they should do their work”. That is my very personal opinion about that.

Q212 The Earl of Dundee: Another inference perhaps is that, compared with those in other EU states, the water management arrangements in England and Wales may reflect a democratic deficit. Following from what you said a moment ago, perhaps you do not find that that is a source of complaint.

Frédéric de Hemptinne: Well, maybe that is your impression. What I can say is that I have not seen in any member states a big involvement of the general public in water issues. The reason, as I say to you, is first it is very complex. The Water Framework Directive is very complex even for myself, and people do not make easily a link with their private activities. I do not know about the democratic issue, but I certainly agree with you that one of the objectives of the Water Framework Directive is, as I say, to create solidarity so probably people should be more involved. How to do that is still very difficult and I have no recipe for success.

Q213 Baroness Byford: Good morning. In your *Outlook* report article that we have had a chance to read, you refer to the role that agriculture will play in the future. Bearing in mind that across Europe there is an enormous range of size of farms, from very big ones to very small ones, how do you see that the CAP reform could be used to benefit the better use of water? Perhaps I can draw your thoughts to three things. First, throughout Europe some countries are clearly very dry, so extraction of water and irrigation is key, whereas in other areas that is not true. Secondly, there is obviously the effect that pollutants have that come off the soil during normal farming practices. Thirdly, there is an offer in farming to use your land, under a land management scheme, to rectify some of these conflicting interests. I would be very grateful if you could tell us a little bit more about your thoughts on how some of this work should be funded in the future.

Frédéric de Hemptinne: Well, water and agriculture is a painful story—that is for sure. I would first point out the difference of approach. On the agriculture side, the objective at least at the beginning was to create a big European market—not just European but also connected to world markets where competitiveness matters; on the water side, it is not so much about a market but a long-term investment in infrastructure, so emphasis is on maintenance and local asset management. Those are really two very different approaches. When I wrote my article, there was a lot of attention given at that time to ecosystem services as a way to reconcile these two approaches. Nowadays, that has received less attention probably because it would cost more money than the next CAP can make available.

In my own view, it is quite welcome that part of the budget for implementation of the Water Framework Directive will come from the common agricultural policy. How this can be done is difficult, but there are two ways to do it. The first is to act via Pillar I, which is direct payment. As you know, there is a cross-compliance scheme that already incorporates some of the water concerns, but experience shows that it is very difficult to make this requirement operational. In the new package for the next CAP, there is thought being given to incorporating the Water Framework Directive in a cross-compliance package. However, there is, first, a problem with the timing because all the member states have not yet implemented their plans—the new CAP will start in 2014 and we are not sure that all of that will be done. Another issue is really the difficulty of making that operational. Even under the Water Framework Directive, the plans are just plans; they are not yet clear operational measures. It will require a lot of developments and adaptation to local context, so it is not very easy to do that. I do not have any miracle solution, but my thought is that we should maybe try to give more power to local communities to manage that according to their own circumstances. Also, in the same way that the ecological quality is used as an integrator of

the health of water systems, we should maybe consider land state as a sort of equivalent integrator for all types of ecosystems, including the agricultural ones. I do not know—that is just a thought.

The second aspect is the rural development programmes, which is one-fifth of the CAP budget. Probably that could help to implement the Water Framework Directive, and it is already enshrined in the current regulation. There are a lot of discussions about whether this should fund mandatory measures or only measures going further. Probably in the next CAP it will be only measures going further, but my personal thought is that we should perhaps consider a third category about good implementation. There is just formal implementation, but there is also really good implementation that really delivers results. However, somebody once told me it is very difficult to incorporate common sense into a regulation, and this is the case. Also, what I would like to stress, especially with rural development plans, is that we do not have a good methodology to assess the environmental impact of rural development plans. I think it is a sort of learning-by-doing process.

Baroness Byford: Thank you very much.

Q214 Baroness Howarth of Breckland: Can we move on to the policy for drought and flood planning? Could you tell us what you know about where the thinking has got to about the need for member states to have their drought plans in place? What more can be done to join up the flood catchment management planning with the river basin management planning process? Does the EU see the catchment planning as the basic building block for managing water resources?

Frédéric de Hemptinne: Yes, I really believe that the Commission is promoting the highest possible integration between the two, but for some reason—maybe in some member states the institutional framework did not fit very well—it offers the possibility to manage the two under separate schemes. But certainly the Commission is pushing for that and it is already a reality because within the common implementation strategy this is addressed under the same structure. For some topics like river morphology, which is very important for ecological quality but also for flood prevention, there is obvious synergy, but it is up to the member states to take advantage of this synergy. In some cases there is also a bit of a problem because floods may require you to build new flood defences, which would be against the objective of the Water Framework Directive. But my perception is that this is quite smoothly addressed by the CIS and the details of the implementation are in the hands of the member states. In most of the member states it is the same authority that is in charge of the river basin management plan and the flood prevention and risk assessment plan. So, I do not perceive this as a problem. Of course, other issues like civil protection are specific matters of concern for flood protection.

Concerning drought management plans, yes, this was something that was underlined in the 2007 communication on drought and water scarcity. I would say it was surprising for me to see that a country like Spain has a drought management plan without having formalised the river basin management plan, but this is an ongoing process and I would not see it as a big problem. With drought management plans, we are still in the learning process. The Commission approach to water scarcity and drought has been a two-step approach, at 2007 and at 2012. In 2007, it was launching the move and asking for reports. In 2012, it will revise the strategy, so at that time we will probably have a better idea of the possible contents of the plan.

A big issue right now is the indicators. This is really very fundamental to water scarcity and plans. You know that the Commission is making a distinction between drought and water

scarcity, in the sense that drought is a sort of natural accident and scarcity is long-term imbalance. It tries to define good indicators to provide a warning about long-term imbalance. It is really not an easy task, but that is work in progress. I read that the water directors have already agreed on two indicators, but others are being developed, so I think the work on indicators is really the beginning of the story. On the basis of that, you will be able to connect the drought management plan and the river basin management plan.

Q215 Lord Cameron of Dillington: Good morning. I think actually you have already answered my question, but it is interesting to me what you said a moment ago about there having been no big involvement by the general public in the water debate across the EU. I am just wondering whether, looking long-term ahead with possible droughts and possibly even flooding and the resultant extra costs of water management, you think that there will be a greater involvement by the general public in the debate about water and in the debate about what the role of the Commission is and what the role of the member state is and how you arrange the governance of water. Do you think this is going to create new problems in the long term?

Frédéric de Hemptinne: Well, with the future of water, there are some difficulties emerging. For instance, the drought this year was very interesting because it was quite a big drought, but the general public were not so much aware of that. There is really a lack of perception among the general public. For me, based on my experience with waste management, my feeling is that the public will be more involved in water the day that they are given a way to act and when they are really able to do something for water. I think it is very important to give people an alternative: “What could I do to reduce my water consumption?”—if that is necessary, and probably in some parts of Europe it is not necessary to reduce your water consumption. “What do we do?” We were also talking about priority substances, and that is also something very important. What can people do to reduce the emission of priority substances? Importantly, how can the general public reward business actors for taking action on that? If a farmer reduces the use of pesticides, what is his reward?

The Chairman: Well, Mr de Hemptinne, thank you very much. That has given us an insight that we had not received before. I think many of your comments, but particularly the one about common sense and regulation, struck a note with many of the Committee Members. We are very grateful for you appearing before us and thank you very much.

Frédéric de Hemptinne: With pleasure.

Frédéric de Hemptinne, The Sustainable Synergies Group— Supplementary written evidence

As you may know, Belgium is divided into 3 regions which are the competent authorities for transposing the Water Framework Directive. Today's situation is the following:

- Flanders: the plans have been adopted and reported to the EC Commission;
- Brussels: it is catching up with the delays. Eight-month consultation has just occurred and the plan's adoption is expected in the next future;
- Wallonia: A first consultation took place in 2008 but it took time to elaborate the plans. Now they are ready for endorsement by the Walloon Government. This should happen in the coming days. Then there will be a 6-month consultation with the public. The intention is to get them approved by the end of 2012.

In addition, the Belgian Federal State is still in charge of the WFD implementation in coastal waters. A plan has to be consequently elaborated.

Each Belgian region reports to the European Commission through the Federal State. The latter is only a relay. It has no influence on the WFD implementation, except that it grants authorisation for placing hazardous products on the market. This is important when it comes to controlling diffuse sources of pollution. If Belgium were to be condemned because of a lack of WFD implementation, the fine would be paid by the responsible region.

1 March 2012

Alex Inman, Laurence Smith, Dr Hadrian Cook, Dr Dylan Bright, Dr David Benson and Professor Andrew Jordan—Written evidence

Alex Inman, Laurence Smith, Dr Hadrian Cook, Dr Dylan Bright, Dr David Benson and Professor Andrew Jordan—Written evidence

[Submission to be found under David Benson](#)

Institute for European Environmental Policy—Written evidence

I. SUMMARY

IEEP welcomes this opportunity to submit evidence to the House of Lords European Union Committee, Agriculture, Fisheries and Environment Sub-Committee, inquiry into EU Freshwater Policy. IEEP has a long history of research into the development and implementation of EU Freshwater Policy and the inquiry is timely given the current debate on the issue at EU level and the publication of the Blueprint by the Commission in 2012. The main conclusions of IEEP's evidence are:

- The Commission's stated aim for freshwater policy of "sustainable use of good quality water in the long term" should already effectively be the goal of the Water Framework Directive (WFD), although we are concerned that 'long term' may not adequately reflect the legal obligations that already exist on Member States.
- The main driver for EU policy, the WFD, does not adequately address climate change issues (or some other pressures). Failure to allow for climate adaptation presents risks to the future of Europe's waters, but a poorly designed change to the WFD to accommodate this issue could allow for too many loop holes for Member States in implementing the WFD.
- EU policy development is justified in specific circumstances. New EU law on product standards for water efficiency would, therefore, be justified to ensure the functioning of the single market. It is not clear, however, how well justified a possible proposed Directive on water scarcity and droughts would be. A failure by some Member States to address a problem is not reason enough for the introduction of new EU law. The EU institutions need to examine carefully the justification (if any) for new EU law on water scarcity and droughts and what elements ought to be included in such law and what should be the responsibility of Member States.
- The concept of water footprints and related tools such as the use of water accounting hold much promise in understanding the role of 'embedded water' in the wide variety of products that we consume. However, the concept is complicated as the impacts of water use vary not only between countries and within countries, but also over time. Any useful labelling regime would need to take account of these factors. Thus great care needs to be taken in translating footprinting and accounting methods from analytical tools to obligatory drivers for policy development.
- The EU has different streams of research funding which can assist in the development of freshwater policy and innovation (IEEP has been involved in a number of these). Water issues have been a theme of studies funded through the EU Research Framework Programmes for many years. There is a challenge in translating the results of such research into policy relevant outcomes. There is also a shortfall in the amount of applied policy research.
- Future changes to the CAP have the potential to include additional cross-compliance requirements under Pillar I and improved design of rural development under Pillar II. However, not all impacts of agriculture on water can be addressed through measures within the CAP.
- Cohesion Policy has been an important driver for investment for water infrastructure in many Member States. However, significant shortcomings in streamlining

environmental concerns, continued bureaucratic rigidities as well as problems with co-financing rates remain serious points of criticism.

2. INTRODUCTION

On 19 July 2011 the House of Lords European Union Committee, Agriculture, Fisheries and Environment Sub-Committee (Sub-Committee D) issued a call for evidence to support its Inquiry into EU Freshwater Policy. This evidence is provided by the Institute for European Environmental Policy (IEEP) in response to this call.

IEEP is an independent policy studies institute and is a leading centre for the analysis and development of environmental policy in Europe with offices in London and Brussels. IEEP's work focuses on EU environment policy, and environmental aspects of other sectoral policies and we seek both to raise awareness of European environmental policy and to advance policy-making along sustainable paths.

IEEP has a long history of analysis of the development and implementation of EU water policy. In particular we have recently been a major partner in a study to support the Commission's fitness check of freshwater policy and we are to lead a new study on developing policy options to support the development of the Blueprint.

This inquiry is particularly timely given the review of EU freshwater policy that is currently being undertaken. This includes assessment of how well the Water Framework Directive is being implemented, how to take forward the Communication on Water Scarcity and Droughts and a 'fitness check' of EU freshwater policy within the Commission's smart regulation agenda – all leading to the publication of the 'Blueprint to Safeguard Europe's Waters' late in 2012.

This evidence is structured according to the main headings set out in the Committee's call for evidence. At the start of each section the Committee's questions are repeated in italics, followed by our comments on the issues raised.

3. STRATEGIC OBJECTIVES OF EU FRESHWATER POLICY

The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission's “long term” be?

How adaptable to emerging new challenges is the current policy framework likely to be?

The Commission's stated aim for freshwater policy of “sustainable use of good quality water in the long term” involves three elements. 'Sustainable use' attempts to increase the emphasis on quantitative aspects of water management alongside 'good quality'. It is important to do this, although quantitative issues surrounding flood management may, or may not, be included in the concept of 'sustainable use'. The sentiment, though, is appropriate. However, the phrase 'in the long term' raises concerns. Achieving good quality water and its sustainable use are already, effectively, legal obligations under the Water Framework Directive (WFD) and, with the flexibility allowed in the WFD, Member States

should meet these objectives in 2027, at the end of the WFD's third River Basin Management Plan (RBMP) period.

Member States, in their first RBMPs (to run to 2015), have not been particularly ambitious in taking forward new measures to improve water status. One reason for this is the distance of the 2027 deadline which is failing to act as a driver for today's decision makers. A key lesson from this is that there should be no lengthening of the WFD implementation timetable and that the Commission should state that it expects good status for water bodies to be achieved by 2027. Compared to objectives and targets established in other policy domains (e.g. on climate change, resource use, etc.) this is not a long-term target. In this respect, therefore, the addition of 'long-term' to the Commission's stated aim for freshwater policy is unhelpful.

The EU freshwater policy framework needs to be adaptable to new challenges. The current policy framework varies in how it addresses future climate change. The most explicit inclusion of climate impacts can be seen in the Floods Directive. Here flood risk assessments are required to take into consideration climate impacts on future flood events. This is particularly important given the high cost of flood prevention schemes and the likely lifespan of infrastructure. They need to be resilient to changing conditions for many years.

In contrast, the heart of EU freshwater policy, the Water Framework Directive (WFD), effectively does not address climate change. Guidance on the interaction between climate change and river basin planning has been published (CIS Guidance No. 24), but this itself acknowledges the constraints. The primary problem lies with the setting of objectives for water bodies. As these objectives drive the adoption of the required measures in River Basin Management Plans, this problem is significant.

Effectively, the WFD requires Member States to understand how a water body would be if unimpacted by human activity ('high' status). From this baseline 'good' status is determined and measures should be adopted to maintain good status (or achieve it if that condition is not already in place). The WFD's approach to determining "high" status is to look back. Indeed, one approach referred to within the WFD is to determine this using paleoecological analysis. In an environment not subject to wider changes, this approach is a good one. However, where significant wider pressures occur, then the approach can lead to unrealistic goals.

It is important to note that climate change is not the only pressure which could lead to a 'permanent' change in objectives for fresh water. Another concerns alien invasive species. While controls (to prevent their introduction and remove or control them where possible) should be adopted, there will be water bodies where the species composition will always remain significantly altered once aliens have been introduced. In such cases, it could be argued that it would be reasonable to define new objectives for good status which include the novel species that are present.

Allowing a change to the WFD has risks, as does not allowing a change.

The European Commission is currently assessing how far Member State River Basin Management Plans meet the requirements of the WFD and how well they address the pressures on water bodies across Europe (which is not necessarily the same objective). Even with the level of detail in the WFD, there is considerable room for manoeuvre for Member

States in defining good status and, therefore, in how stringent adopted measures to achieve good status will be. Efforts made by the Commission and Member States on the ‘intercalibration’ of approaches and the production of many guidance documents on different aspects of implementation can only reduce discrepancies to a limited extent. However, if Member States were allowed to define good status so as to include future climate impacts, there would be an increased opportunity for them to develop less ambitious objectives. Greater flexibility can be used to seek out additional loopholes and lower ambitions.

However, not allowing for climate change in setting objectives is also a risk. The ‘one out all out’ approach of the WFD (whereby good status requires all necessary elements to be achieved) could mean that climate impacts genuinely preventing good status from being reached could be used to justify lack of action in other areas. For example, species change arising from climate impacts may be incompatible with good status as currently defined, so that the Member State may argue that the objective is unachievable. This could then be used as a pretext to allow for say agricultural pollution also to continue at levels incompatible with good status. Appropriate flexibility can, therefore, be used to ensure there is a focus on targeting critical water pressures.

Therefore, it is important that climate adaptation is included in the objectives of the WFD (assuming one is able to make reasonable assumptions about future changes), but that this is done in such a way as to avoid creating a loop hole for Member States in its implementation.

4. ADDING VALUE

How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

EU freshwater policy has been a major driver in improving the quality of Europe’s waters. In many Member States, including the UK, the levels of control on key sources of pollution and levels of quality in water bodies would not be what they are today without EU legislation. The EU has, therefore, added enormous value to what many Member States would have achieved without it. It is also important to note the further added value from EU financing. The Structural Funds have helped in infrastructure investment for water treatment in many southern and eastern Member States and Rural Development Funds have supported farmers across the EU in taking measures to improve water quality. Funding issues are considered further in section 7.

Determining which aspects of policy are best dealt with at EU, Member State, or regional, level is not easy but formally should be guided by an interpretation of the subsidiarity principle. In our view EU level policy development is primarily justified in the following circumstances:

1. Where Member States are not able to undertake action on their own to address an environmental problem.
2. Where action is needed to ensure the functioning of the single market, and where competitiveness concerns would inhibit national action.
3. Where EU level action is expected to be more efficient or effective than Member States acting alone.

Single market concerns have been important historically in the development of EU water law. This was most notably a major driver for the Dangerous Substances Directive. They are a key part of the rationale for more recent policies such as the Quality Standards for Water Directive. However, apart from general statements about ‘level playing fields’, single market issues have not been uppermost in the debate on much more recent EU water policy development.

A more significant driver has been the need to address concerns where Member States are not able to undertake action on their own to address an environmental problem. The most notable concern in this regard is transboundary problems. Indeed, Europe has a very long history of co-operation on transboundary rivers (which for navigation co-operation goes back to the early 19th Century). Transboundary issues are highlighted in a number of Directives (e.g. Nitrates, Floods, Water Framework, etc.).

However, the requirements of water Directives are not limited to transboundary issues. For example, the WFD effectively is the means whereby the EU implements the UNECE Convention on Transboundary Water Courses and Lakes. However, it is far from being limited to transboundary water courses.

A fundamental issue for EU environmental policy development is: how far should a problem identified as occurring throughout Europe be addressed by EU law?

This question is important given the current debate on the future of EU policy regarding water scarcity and droughts. Analysis by the Commission and others clearly demonstrates the current extent of the current problem of water scarcity and droughts and the increases expected in many areas with climate change. The Commission has stressed the requirements of the WFD which potentially enable Member States to address many aspects of the problem. However, it also points out that there is the potential for some additional EU law, such as new product standards (regarding water efficiency) to contribute to mitigation. These would be appropriate at EU level as single market measures. However, there is some pressure for there to be a new EU Directive proposed on water scarcity and droughts. What this would contain is not clear, but it could form a risk assessment and planning measure akin to the Floods Directive.

However, because there is a substantive and widespread problem with water scarcity and droughts, does this mean there should be new EU law in this area? It is understood that at least some of the pressure for a Directive is coming from southern Member States, i.e. that EU law would help to ensure that governments take action. However, we do not consider that EU law should be adopted simply to accommodate the deficiencies of national policy making. Clearly there are cases of water scarcity issues which are transboundary in nature (e.g. between Portugal and Spain). This may either necessitate or be best addressed by the use of multilateral, usually EU law. In many respects appropriate implementation of the WFD should allow this to be achieved, but it is still possible that new legislation will be needed.

A failure by some Member States to address a problem is not reason enough for the introduction of new EU law. The EU institutions need to examine carefully the justification (if any) for new EU law on water scarcity and droughts and what elements ought to be included in such law and what should be the responsibility of Member States.

5. FUTURE POLICY

In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

The forthcoming Blueprint being prepared by the Commission should be a landmark for future EU water policy. This will fulfil the WFD Article 18 requirement for a review of the WFD and a report within 12 years of adoption, although the next scheduled review in 2018 will be able to report on what RBMPs have achieved as opposed to what they are expected to achieve. The Blueprint also coincides with the scheduled review of progress on the Communication on Water Scarcity and Droughts.

We do not consider it likely that the Blueprint would include a proposal for a major amendment to the WFD. Issues relating to climate impacts on target setting could be addressed later. Nor do we consider it likely that important amendments will be proposed for other key Directives (Floods, Bathing Waters, Nitrates, UWWT Directives). Rather, the most likely area of policy development will concern water scarcity and droughts.

The Commission has already telegraphed that it wishes to take forward these issues within other contexts, such as in relation to product standards and building standards. This line of development seems sensible. DG ENV also wishes to extend the use of instruments within the Common Agricultural Policy to address water scarcity (see section 7). Within core water policy, the most likely new initiative could be a proposal for a Directive on water scarcity and droughts. However, the Commission is still examining the issue and analysis and stakeholder discussion over the next year will go far in determining whether such a proposal sees the light of day.

The concept of water footprints and related tools such as the use of water accounting hold much promise in understanding the role of ‘embedded water’ in the wide variety of products that we consume. However, the concept is significantly more complicated than that of embedded carbon. Carbon, wherever emitted to the atmosphere, is equally undesirable. The implications and impact of water use is much more site specific and will be influenced by temporal factors too. Water use itself is not a bad thing – it is unsustainable water use, water use that causes damage which carries an environmental cost. Impacts of water use vary not only between countries and within countries, but also over time. Any useful labelling regime would need to take account of these factors. It is far from clear that this is yet possible. There is a real danger of the adoption of misleading assessment methods and associated labelling on this issue. Thus great care needs to be taken in translating footprinting and accounting methods from analytical tools to obligatory drivers for policy development.

6. RESEARCH AND INNOVATION

How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?

The EU has different streams of research funding which can assist in the development of freshwater policy and innovation (IEEP has been involved in a number of these). DG ENV

funds innovative water policy related research, as well as the more fundamental research streams funded from the Seventh Framework Programme. Water issues have been a theme of studies funded through the EU Research Framework Programmes for many years. The impact of Seventh Framework research on policy is difficult to judge. There is a clear challenge in translating the results of such research into policy relevant outcomes. There is also a shortfall in the amount of applied policy research. It is also important to note that the policy audience for much of the Framework Programme output is at Member State level. DG RES has sought to improve the utility of research outputs for policy makers, but improvements in communication need to be made.

Much of the research directly aimed either at changing water use behaviour or at technological innovation is funded through programmes such as LIFE+ and the Competitiveness and Innovation Framework Programme (CIP). LIFE+ projects have included technological development projects to enhance water efficiency, methods to improve water use by different types of users and regional or municipal scale projects to integrate measures to improve water use. CIP projects work with industry and have focused on improved technologies for water saving. These are important funding streams with proven outcomes.

7. OTHER POLICY AREAS: AGRICULTURE AND COHESION

How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

A wide range of EU policies affect desired outcomes for Europe's freshwaters, although these comments are focused on the Common Agricultural Policy and Cohesion Policy.

7.1 Agriculture Policy

Agriculture can have major negative impacts on water bodies, most notably through pollution (pesticides, nutrients, sediments, etc.) and abstraction for irrigation. However, certain actions by farmers, such as active management or river margins, can also have beneficial effects. The EU Common Agricultural Policy (CAP) dominates EU policy in this area. However, it is important to stress that not all agricultural activity is affected by the CAP, other factors, such as commodity prices, are important drivers too. Consideration of the potential role of the CAP to help deliver sustainable fresh water and how it might be modified to improve this goal is timely, given the forthcoming revision of the CAP.

The CAP, through Pillar I, provides income support to farmers, while under its (much smaller) Pillar II, it provides additional payments for farmers to undertake specific additional forms of management, make certain investments and pursue other action (including for environmental protection). Policy changes enacted through the 2003 CAP reform and the so called health check of the CAP (2008) included the substantial decoupling of payments to farmers from production requirements, increasing emphasis on rural development and introducing cross-compliance, whereby payments under Pillar I were made conditional on farmers meeting specified requirements, many embedded in EU law.

Water issues on farms are addressed to a certain extent under cross-compliance. Water issues can be seen both within statutory management requirements (SMR) and Good

Agricultural and Environmental Condition (GAEC)²³. SMR provisions need to be clear, legal obligations at the farm level, and, for water, these are currently limited to specific obligations within the Nitrates Directive. There is considerable debate over the potential for inclusion of WFD requirements into cross-compliance in the next manifestation of the CAP beyond 2013. Certainly there is scope for ensuring GAEC delivers better water outcomes. However, for an obligation to be included as an SMR it has to be identifiable in EU law as an obligation at farm level. For the WFD many of the obligations on farmers are (or should) be developed as measures within River Basin Management Plans, i.e. they are not set out directly in the Directive. Nonetheless, there are some WFD obligations which may be applicable as SMRs, notably:

- Abstraction of water for irrigation without a permit (WFD Article 11.3.e)
- Discharging waste water directly to water courses or indirectly using percolation through soil without a permit (WFD Article 11.3.g and j)
- Application of pesticides not in accordance with the rules (time of application, type of pesticide, application close to water courses, etc.) (WFD Article 11.3.h)

These address only some WFD issues on farms, but could be important. For example, where there is significant illegal abstraction, including a permit requirement would mean that Pillar I payments could be partly or wholly withheld if illegal abstraction occurs.

There have been some divisions of opinion within the Commission regarding an extension of cross-compliance requirements to include WFD elements in the revision of the CAP. Given that such requirements are already a legal obligation, their inclusion cannot be opposed in principle as an additional burden on farmers. It is, therefore, important for there to be support for greater explicit links between farmers' obligations under EU law and the support they receive from the EU budget.

Perhaps more crucial for water protection purposes is Pillar II of the CAP, the so called Rural Development Policy (RDP), where water and the implementation of the WFD are one of several priorities. Spending is co-financed by the European Agricultural Fund for Rural Development (EAFRD) and EU Member States. Financial support is provided for a total of 37 measures organised in three thematic axes and a fourth axis called LEADER.²⁴ Water issues can be addressed under all three thematic axes including farm investment aid provided within Axis I.

Commission guidance stresses the links between WFD implementation and Rural Development Plan implementation, but, in practice, these links are often not clear, mainly due to the fact that the current Rural Development Plans (RDPs) were adopted before the RBMPs were completed. RDPs provide useful financial support to contribute to the

²³ Cross-compliance under the 1st pillar of the CAP applies to European farmers in two ways. First, farmers need to respect the so called Statutory Management Requirements which reflect the provisions of relevant EU Directives and Regulations. They cover, among other, the Nitrates Directive, the Groundwater Directive or the Sewage Sludge Directive (to some extent). Second, farm land needs to be kept in Good Agricultural and Environmental Condition (GEAC) in order to be eligible for claiming payments. The main focus here is on soil protection, but also the reduction of diffuse pollution is addressed, for example establishing buffer strips alongside water courses by 2012 or compliance with authorisation procedures for use of water for irrigation purposes from 2010 onwards (Council Regulation (EC) No 72/2009, (EC) No 73/2009 and (EC) No 74/2009).

²⁴ Axis I concerns improving the competitiveness of agriculture and forestry (minimum financial contribution of EAFRD is 10 per cent), Axis II concerns improving the environment and the countryside (minimum financial contribution of EAFRD is 25 per cent) and Axis III concerns the quality of life in rural areas and diversification of rural economies (minimum financial contribution of EAFRD is 10 per cent).

implementation of the WFD, particularly through agri-environment and forestry-environment payments, natural handicap payments and use of advisory services or training. Irrigation efficiency and efforts to address nitrate and pesticide pollution feature prominently in many RDPs. Experience shows that the value of Pillar II measures for the environment often depends greatly on the way in which they are designed and delivered on the ground, as well as the funding allocated to them. All these aspects need to be addressed in the forthcoming Commission proposals.

In conclusion, changes to the CAP are desirable to help towards achieving improvements in agricultural practices and assist in the protection of water bodies. Some of the leaked proposals from the Commission, for example to introduce farm level protection of permanent grassland, could contribute to improving water quality. Both Pillar I and II are relevant. However, it is not appropriate to consider that the impacts of agriculture on waters across Europe will be improved 'if only we can get the CAP right'. In order to achieve EU legal obligations for fresh waters it will be necessary, in many cases, for additional measures to be required of farmers in specific river basins. It is also important to note that while rural development support enables farmers to make positive choices, these decisions are at farm level. However, addressing pressures from agriculture on water often requires a landscape approach and thus a higher level of analysis and decision-making than that of the individual farm. This river basin scale approach, while integrating compulsory (cross-compliance) and voluntary (Pillar II) outcomes on water may involve the need for additional measures.

7.2 Cohesion Policy

The Cohesion Policy provides for the second big European spending framework, and in terms of investments into water and wastewater infrastructure it is the most important European policy. For example, in the funding period of 2000 to 2006, over 100 projects were funded in the field of water supply alone. Cohesion funding for environment-related action amounts to around 104 billion Euro, whereas the European Commission estimates a total amount of 44 billion Euro to be available for direct environmental investments, include water management and distribution, as well as water treatment.

It has been noted though that the environmental dimension still is not on equal footing with the economic and social dimension when it comes to priority-setting for funding to achieve greater territorial cohesion. In its core, Cohesion Policy focuses on economic growth and social development and does little to account for important inter-linkages between project-related impacts, such as increased water and air pollution and their link to protected and natural areas. Significant shortcomings in streamlining environmental concerns, continued bureaucratic rigidities as well as problems with co-financing rates remain serious points of criticism.

Planned Cohesion Policy spending on water/waste water for 2007-2013 is 22 billion euros. The Commission's ex-post evaluation of the 2000-2006 European Regional Development Fund (ERDF) estimates that more than 20 million additional people have benefited from wastewater treatment projects funded by ERDF in the EU-25 between 2000 and 2006. However, water pricing has not always been able to cover the real costs associated with waste water treatment plants. Consequently it is important that the right policy framework is in place to deliver full cost recovery. This would also encourage the implementation of Article 9 of the WFD. As Cohesion and Structural fund investments and EU water law are

both seeking to deliver water quality benefits, there may be opportunities for improving the effectiveness of Cohesion Policy investments. However, the potential for improving the effectiveness of Cohesion and Structural fund investment using existing regulation and market-based instruments is likely to vary considerably across Member States, as many may not have the capacity to comply with legislation due to lack of funds, or may not have the institutional capability or political will to introduce such measures. Therefore, Cohesion Policy funding investments should be targeted where the identified gap in WFD or UWWTD compliance is greatest and/or where the investment is least affordable by the Member State.

In addition there is a growing interest within the Commission to invest more into green infrastructure for the next Cohesion Policy funding period to deliver water purification and mitigation of flooding.

5 September 2011

International Commission on Irrigation and Drainage (ICID)— Written evidence

Some parts of this document were also incorporated in the Centre for Ecology and Hydrology, CEH response.

Strategic objectives of EU freshwater policy

- I. The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?

Sustainability is a difficult term to apply especially to groundwater resources as the recharge is difficult to estimate and its forecast over a long period of time is a challenge. Enough attention should be paid to the sustainability in relation to “Water Security”, which is the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production; coupled with an acceptable level of water-related risks to people, environments and economies. There is also a need to adopt the concept of the Green Economy in the water policies, where growth in income and employment is driven by investment that reduces carbon emissions and pollution, enhances energy and resource efficiency, and prevents loss of ecosystem services.

- Sustainability is not for eternity, it should be associated with a time span. The majority of the scientists like the time span to be rather short, with a maximum of 50 years.
- Supply-led management is unsustainable. A sustainable demand-led approach is required to manage Europe’s water resources with focus on conserving water and using it more efficiently, accounting for the need for a healthy fresh water ecosystem.
- According to Commission statistics: 20% of all surface water in the EU is seriously threatened with pollution; 60% of European cities overexploit their groundwater resources which supply around 65% of all drinking water in Europe; 50% of wetlands have an "endangered status" due to groundwater over-exploitation, and; the area of irrigated land in Southern Europe has increased by 20% since 1985.

- There is a continuously increasing imbalance between water supply and demand in the EU. Balancing the demand against the limited water supply is a challenge.
- There is a need across the EU for effective unified methods for assessing the ecological status (e.g. minimum ecological flows) of surface water resources.
- The links between water quality, land use and water resources management are not effectively being made. This link is a challenge in the view of continuous land use and climate changes.
- There is a need for measures to cope with climate change that should include alternative water supply options such as wastewater re-use, brackish water use, and desalination to cover agricultural, industrial and domestic demand.
- There is a need to introduce water saving culture across Europe and achieve more resilient societies.
- There is a need to improve water resources use efficiency in all sectors, especially in agriculture and buildings.
- Climate change scenarios need to be downscaled and adapted to local scale for impact analysis and eco-hydrological processes studies as they are sensitive to local characteristics, such as land use and topography.
- There is a need for effective adaptation initiatives in order to reduce the vulnerability of the ecosystem against actual or expected climate change impacts. These could include water demand management and water-land use planning while accounting for water availability and increasing resources efficiency.
- There is a need for an EU policy with regard to biofuel / energy crops and their impact on water availability.
- There is a need for flexible policy on adaptation to climate change, e.g. Licensing consumers to abstract water during summer high flow times to top up reservoirs.
- There is a need for a policy on the use of waste water at the times of shortages (e.g.in cooling towers), and the use of less water demanding and drought tolerant crops to cope with drought periods. More energy efficient and more environmentally friendly desalination plants should be developed.
- There is a need to link water scarcity issues to agricultural policies.
- There is a need for accurate knowledge of when and where climate change impact might be first detected. This can help target investigative monitoring and reporting of effects in the most vulnerable water bodies (i.e., “hot spots”). Climate change

indicators can be deployed to improve the chance of early detection, and hence the lead-time for invoking adaptive measures.

- The links with the IPPC directive are more complex and challenging, particularly with regard to translating pressures on good environmental status.

The areas that need to be given more consideration are: water efficiency with regard to agriculture, water supply infrastructures, buildings and products, water savings and improved water retention through changes in land use and management, and measures related to early warning for droughts.

2. How adaptable to emerging new challenges is the current policy framework likely to be?

The WFD promotes the integrated management of water resources to support environmentally sound development. The WFD provides the framework for water policy decision-making within the river basin context. It does require the integration of industrial, agricultural, rural development, nature conservation, forestry programmes, etc. at the river basin scale and, in many cases, requires trans-boundary collaboration between European countries. The current policy can be adapted to meet the challenges by improving: implementation, climate resilience, resource efficiency and policy integration (e.g. with CAP).

Adding value

3. How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

- Under certain conditions, financial support to some consumers especially farmers (e.g. in East Anglia, UK) to build small scale reservoirs for rainfall and flood harvesting is needed and could be cost effective at national and EU level.
- Although, different EU countries do carry out their own monitoring, there is a need for effective trans-boundary monitoring using the most recent technology (remote sensing, etc.) as climate change, including droughts, does not follow national boundaries. Harmonised monitoring programmes are needed (comparability of data between member states is limited). Subsequently, a common indicator system should

be built on a common information platform to improve response mechanisms for transferable data and information among the EU countries.

- At national scale, there is a need to develop a shared vision among stakeholders to make collective informed decisions and collectively manage the water resources. This could include water users, polluters, scientist, government and private sector.
- There is a need to link national databases to central European systems, such as WISE.
- The EU policy needs to adopt a joint policy on water security, food security and environment security.
- The EU needs to adopt a water policy that is based on the virtual water concept and allocating water thirsty crops to water rich regions.

Future policy

4. In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

- As with CAP policy, member states should continue to be given flexibility to allocate funding in a way which best suits the requirements of their own regions and farming structures.
- The combination of possible impacts of climate change and land use requires a proper plan for water resources management and mitigation strategies. Water resources management needs to be handled with an integrated approach that takes into account: the water resources availability (quantity and quality), the land use, the water demand and the climate change.
- The policy should also adopt the concept of “Green Economy”: growth in income and employment is driven by investment that reduces carbon emissions and pollution, enhances energy and resource efficiency, and prevents loss of ecosystem services.
- Future policy needs to be developed to simultaneously account for water security, food security and environment security.
- Future policy needs to be developed based on the concept of virtual water (e.g. allocating water thirsty crops to water rich regions).

5. What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

Water scarcity and droughts

- The integration of water scarcity and drought into sectoral policies is an issue that needs to be implemented in the future.
- Measures to cope with climate change, especially drought, include the use of alternative water resources. There is a need to assess the risks and impacts of alternative water supply options such as desalination, brackish water and wastewater re-use. The need for alternative water supply options will grow in the future due to climate change and the reduction in water availability. There is potential for a greater use of alternative water sources for energy production (e.g. in cooling towers) during the periods of droughts.
- Management of drought so far was reactive rather than proactive. Risk management would benefit from a much stronger link to the integrated land use management. Mitigating the causes is essential. Water scarcity and droughts still remain under-addressed as a major policy issue. There is no clear future regulatory action on droughts. There is a need for an integrated policy approach, including a hierarchy of measures prioritising water demand management as part of the implementation of the WFD.
- The aspects of droughts are not well considered in current supply-oriented water planning practice in many EU countries who have failed to cope with the adverse impacts of droughts with only few member states having implemented water efficiency standards, especially in buildings. With respect to specific drought management plans, several EU member countries do not have separate plans.
- Existing water planning practices (mainly supply-oriented) have proven inefficient to cope with the adverse impacts of drought, leading to overexploitation of water bodies and as a result the survival of aquatic ecosystems have been hit badly (e.g. in southern European countries).
- Demand management strategies are not promoted as obligatory measures in the WFD. There is a need for compulsory measures, in order to foster the sustainable use of water resources through the reduction of water consumption and the increase in water use efficiency. Demand management can also improve the resilience of water systems in the case of drought events.
- Most of the EU countries do not perform forecasts of water scarcity and drought

events for the year ahead. However, monitoring precipitation events is used to estimate the current water storage and availability. Given the high degree of uncertainty in climate change projections and the growing pressure on water resources, it is essential that hydrometric networks are in place to monitor droughts, and that the causes for water scarcity are thoroughly diagnosed, e.g. to monitor water demand and long-term trends in water supply.

- There should be a requirement for the development of a specific Drought Management Plan linked to the WFD. The different aspects of ecosystem preservation need to be integrated in the drought management planning. There is a great benefit from the establishment of “minimum flows” as they highly influence the water use rates during drought and can contribute to the maintenance of the “good status” of groundwater, as well as surface bodies. WFD should have ecological objectives to ensure a healthy ecosystem.

Water footprinting

The water footprint is increasingly used to raise the awareness of consumers on water consumption. An EU Eco-Label regulation will help consumers in choosing products with lower water consumption. The following bullet points highlight the issue:

- 62% of the UK’s agricultural water footprint is overseas.
- About 84% of the water footprint of cotton consumption in the EU25 region is located outside Europe, mainly in India and Uzbekistan.
- Worldwide cotton products require 256 Gm³ of water per year, out of which: 42% is blue water, 39% green water and 19% dilution water.
- The consumers in the EU25 countries indirectly contribute for about 20 per cent to the desiccation of the Aral Sea. The Aral Sea has now only 15% of its original water volume. Its salinity has risen by almost 600% and all native fish are gone from its waters. The decline of the Aral Sea is closely linked to Uzbekistan's cotton irrigation systems which draw water from the region's two major rivers.
- Consumers are encouraged to buy cotton products from China and India where cotton cultivation is based on green water (rainfall - no competition with other uses) rather than Pakistan and Uzbekistan where it is mostly based on blue water (river / groundwater abstraction - competing with other uses).

Research and innovation

6. How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?

- Europe needs to produce food for over 500 million people in the future. Efficient water use in agriculture is paramount. While agriculture has always been innovative, in order to rise to this exceptional challenge, farmers will need significant help from the EU. Agricultural innovation must be at the heart of the EU policies if we are to respond to a rising global population, the challenges of climate change and to the provision of food security.
- The European Commission must significantly increase investment in scientific research in the agricultural sector by reducing the proportion of funding devoted to the CAP and diverting it to agricultural research by the EU's Research Programme.
- According to OECD-FAO's Agricultural Outlook, between 2010 and 2019 the projected increase in food production across the EU is put at 4%; in the USA over the same period production is expected to increase by 15% to 20%; while in Brazil the increase is forecast to be over 40%. The EU needs to do better than a 4% increase.
- Focussed research is needed to develop specific river basin monitoring plans that explicitly deal with drought conditions, adaptation to drought and distinction from water scarcity. It needs to include climate variability, climate change and needs to take into account the dynamic state of the storages in the river basin. The indicators (e.g. preventive, operative, management/organisational) are not sufficiently developed to address different conditions and different drought phases (pre, during and post drought). The measures for mitigating drought impacts are to be selected according to the severity, duration and spatial extent of the event. The lack of the inter-comparable drought indicators across the EU to identify e.g. large scale, prolonged drought events on a common basis hinder the process of defining actions for each drought stage.
- EU must ensure that innovative knowledge is fully communicated to member states.
- More research should go into breeding and biotechnology to produce drought tolerant plants.

Other policy areas: agriculture and cohesion

7. How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

- The important challenge for policy makers is to design and implement coherent agriculture and water policies. There is a need to involve a higher degree of interdependence of different policies across the agriculture, water, energy and environment sectors. More progress should be made on sectoral integration of water policies. More efforts are needed to deliver improved coherence. Integrating the WFD elements into CAP is important as both policies follow very different regulatory philosophies. Energy policy on renewable energy sources and targets for biofuel production have implications for water use and water quality and it is important that the future policy development in this area is harmonised with the water policy objectives.
- CAP “Greening Policy” should ensure long term food security and be profitable to farmers and the environment. Intensive agriculture is associated with intensive use of water, agrochemicals and subsequently increasing the water pollution. Organic agriculture without proper management of when and how much organic fertilizer to apply could also lead to water pollution.
- CAP policy should focus on improving the competitiveness and efficiencies of the agriculture sector which should lead to a reduced reliance on subsidies.

September 2011

Professor Andrew Jordan, Dr David Benson, Laurence Smith, Dr Dylan Bright, Dr Hadrian Cook and Alex Inman—Written evidence

Professor Andrew Jordan, Dr David Benson, Laurence Smith, Dr Dylan Bright, Dr Hadrian Cook and Alex Inman—Written evidence

[Submission to be found under David Benson](#)

National Farmers Union (NFU)—Written evidence

Introduction

1. The NFU represents 55,000 farm businesses in England and Wales involving an estimated 155,000 farmers, managers and partners in the business. In addition we have 55,000 countryside members with an interest in farming and the country.
2. The NFU welcomes the opportunity to respond to the House of Lords European Union Committee's call for evidence for their inquiry into EU freshwater policy. The availability and quality of freshwater has major consequences for food production. Future changes to freshwater water policy at the EU level are therefore of increasing concern to our members and many agricultural businesses. Agriculture uses about 2% of the total amount of abstracted water in the UK while in some southern European regions, agriculture accounts for more than 80% of the water abstracted.
3. The locality of climate change impacts which result in changes to water availability and distribution will be a major determining factor of future agricultural practice and the NFU believe that any policy changes at European level must be evidence based, proportionate and targeted. It should also take account of the lessons learned from existing EU water policy such as the Nitrates and Water Framework Directives. A pan European freshwater policy would also need to be developed carefully to avoid generating risk averse compliance legislation at the Member State level.
4. The NFU also believe that, given the significant level of uncertainty surrounding the understanding of available freshwater in the long term, robust relevant evidence must be available to support proposed changes. There is worldwide acknowledgment of the need to produce more food in response to an expanding population, while reducing, amongst other factors, water consumption – a requirement known as the sustainable intensification of agriculture. Careful consideration needs to be given in our view, to delivering a 'fit for purpose' EU water policy which takes a perspective beyond that simply of water protection and resource use and also recognises other environmental and economic dimensions, and of course, the impact on such policies on agricultural productivity and competitiveness.
5. The NFU strongly promotes the use voluntary measures over EU policies that lead to legislative prescription at Member State level. A voluntary approach has the added benefit of encouraging farmers and land managers to constructively contribute to finding solutions to this difficult and complex issue.
6. The committee has asked for comments on five specific issues these are:-

The Strategic objectives of EU Freshwater policy

“The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy?”

7. The NFU agree that sustainable use of good quality water in the long term is a suitable overarching goal of EU freshwater policy, but water availability is a local issue and therefore we consider this needs to be in the context of the climatic variations affecting water availability across the EU and within individual Member States. The current availability of freshwater is a highly variable, locally dependent issue for which appropriate efficient solutions, have to date, been found at a local level. The further into the future projections are made, the more ‘uncertain’ the scientific evidence about freshwater availability becomes, making it difficult to define effective European wide policy solutions.
8. The NFU believe that the EU can best support by establishing “policy principles” and a ‘direction of travel’ for freshwater management, rather than providing an EU wide prescriptive policy. Furthermore, the EU should direct efforts towards delivering change where it most urgently needed; which in the NFU’s view is in the Southern EU states.

“Good quality water”

9. At face value the Commission’s aim is reasonable, although experience of other aspects of water policy leads us to express some caution as to how the Commission may later interpret broad statements of intent. The Commission expresses a slightly different aim in its document “A Blueprint to Safeguard Europe’s Water” (3rd May 2011), saying the aim is “to ensure good quality water in sufficient quantities for all legitimate uses”.
10. We provide a brief commentary of how we see the current water quality policy position as it affects agriculture below, identifying a number of concerns and hopeful developments.
11. The UK is a small densely inhabited country with a long history of industrial and agricultural activity. In some areas rainfall is high and pollutants from human activity may be well diluted and cause little problem. In other areas, such as south-eastern and eastern England, rainfall is low, population and economic activity (including agriculture) is high, and achieving good water quality in every respect can be very challenging. There are important questions as to what is technically achievable, as well as what it is cost effective, given society’s diverse objectives, not least sustainable food production.
12. Agriculture occupies a large part of most UK catchments, 75% of the land surface on average, alongside urban development, forestry and other non-natural land uses. Change in land use from the pristine condition has (unavoidably) altered the characteristics of water draining through catchments.
13. The NFU recognise that agriculture can and should contribute to improving water quality and our policy is to produce more while impacting less. Substantial

improvements have been made in recent decades in terms of greatly reduced numbers of pollution incidents from farms, and also in falling trends in nitrate and phosphate use of farm as well as levels in rivers, and there are important questions now about how to deliver further improvements most cost effectively.

14. The current policy context is set both by “old” legislation such as the Nitrates Directive and Drinking Water Directive, and by “new” legislation such as the Water Framework Directive. The old legislation is prescriptive, inflexible and often seeks to set the means by which objectives should be pursued. The new legislation, whilst very ambitious, incorporates a less prescriptive and subtler approach. It provides for standards to vary according to circumstances to achieve the desired outcome, for cost effectiveness to be taken into account to allow the least costly solution to be used, and for the worthwhileness of the objective to be evaluated and for less stringent objectives to be set where costs are disproportionate.
15. Unfortunately, despite these advances in the legislative approach, much of the “old” legislation remains in place, imposing high costs sometimes for little benefit other than formal compliance with the law. The NFU consider that legislation which is inefficient and costly in the way it seeks to deliver objectives should be repealed as a matter of priority and funds released by reducing or eliminating legislative inefficiencies. We believe there may be substantial savings to be made. We refer to the findings of the Farm Regulation Task Force which recently reviewed legislation affecting farms.
16. The Water Framework Directive also encourages public participation, and much time and effort has been expended in the UK seeking to engage stakeholders in the process of planning for improvements in water management. We consider that to date too much has been invested in process, and too little in practical projects and pilots as to how stakeholders can be engaged to work co-operatively. Nonetheless, the NFU supports the principle of engaging stakeholders to work co-operatively in the catchments where they live and work rather than taking a top-down regulatory approach. There is a role for legislation as a fall-back, but experience in other countries such as Australia illustrates that voluntary approaches which achieve stakeholder buy-in endure and succeed. This contrasts with government schemes such as the Nitrate Sensitive Areas scheme which can be swept away by a change of national government.
17. The NFU takes a positive attitude to achieving water quality improvements. It is working jointly with the Environment Agency to clarify the role of agricultural sources of phosphate in depressing water quality, and in ways of addressing such problems in two trial catchments. The NFU also takes a leading role in and hosts the industry nutrient management scheme, “Tried and Tested”, which aims to improve farmers’ use of fertilisers and manures. The NFU also plays its part in a range of national and local projects and research programmes addressing water quality and Water Framework Directive objectives.

18. The NFU is encouraged by the signs of a possible emerging consensus moving towards simplifying environmental expectations of farmers. Some environmental objectives may conflict and there appears to be a recognition that priorities need to be balanced at policy level and then communicated clearly to those who are asked to physically deliver them. There appears to be a lack of balance currently between the attention given to biodiversity objectives and the protection of the underlying resources of air, soil and water. The policy landscape requires some simplification and greater consistency.

What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission's "long term" be?"

19. The major challenges which need to be addressed by the policy include:

20. **Lessons learned.** Future policy development needs to take account of existing EU water policy such as the Nitrates Directive and Water Framework Directive for example:
- a. Freshwater standards and sustainability.
 - b. EU water quality standards, and the associated compliance regimes, can have substantial resource (economic cost and carbon) implications. It may be appropriate to ensure that both standards and compliance regimes are selected to be cost effective in delivering the various objectives which society seeks to achieve with a view to achieving greater sustainability.
 - c. In the case of EU drinking water standards, many of these are longstanding and they also include some rigorous compliance regimes (e.g. must never be exceeded). However some of these standards driven by increasing sophistication of detection techniques present no toxicological or scientific basis (e.g. pesticides), and others are purely aesthetic (e.g. colour). Historically, the political nature of such standards has inhibited a rational appraisal of the justification of these standards, and an aversion to risk has resulted in high safety margins being incorporated for some parameters. It is inconsistent that the availability of life-saving medicines and medical treatments is determined in the UK on the basis of health economics by the National Institute of Clinical Excellence, but that drinking water standards which purport to be health based have been set by a political process on different criteria.
 - d. We have not researched the subject in detail to develop a reasoned case, but we would suggest that there is a *prima facie* case for an objective evaluation of the costs and benefits of freshwater standards generally, and drinking water standards in particular, from a sustainability perspective. It may be that substantial financial savings and reductions in carbon emissions could be achieved whilst maintaining appropriate levels of protection.

21. **Uncertainty.** Consideration should be given to the significant amount of uncertainty surrounding the present understanding of the risks associated with climate change impacts on future freshwater availability. This means the European Commission will need to provide a freshwater policy approach which has the capacity to deal with the higher levels of uncertainty in the longer term. The frequency and intensity of extreme weather events and seasonal variation in rainfall patterns will be diverse and some local areas will simultaneously have negative and positive effects, the net results of which are unknown. Freshwater policy developed now should not become driven by Member States managing risk of EU compliance requirements rather than practical delivering a strategic objective. Previous policy attempts such as the Habitats and WFD have tended to result in a risk averse legislative and policy framework in the UK, where productive farmland seems to be considered effectively as a “disposable resource”.
22. **Priority areas.** Changes to delivering the EU’s freshwater policy should be targeted to where it most urgently needed; in the NFU’s view, this is in the Southern EU states.
23. **Global food supply and demand conditions.** Consideration should be given to the complex and changing background of global food supply and demand conditions. Changes to water availability could lead to significant changes in the agricultural production potential in different world regions and greater variability of production which could in turn, lead to increased socio-economic volatility.
24. **Support for existing activities.** The need to acknowledge and support existing activities. Many farmers and growers in the UK are already undertaking such as: changing cropping patterns, building reservoir storage and investing in upgraded irrigation techniques. However many of the technologies and investments needed are beyond the individual farmers ability to deliver.

How adaptable to emerging new challenges is the current policy framework likely to be?

25. No comment

Adding Value

How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

26. The NFU believes the EU can add value by:-
- **Integrating the challenges** of food production and water quality and availability with other environmental challenges. This means producing a freshwater policy that contributes meaningful, prioritised and locally consistent inputs that enable sustainable intensification to be achieved.

- **Knowledge and understanding.** Helping Member States further develop the body of knowledge and understanding about climate change impacts on the future availability of freshwater.
- **Co-ordinating and integrating into a broad set of principles,** the activities at Member State level on freshwater.
- **Monitoring, communicating and sharing information** about how localities within Member States make the best use of available freshwater and the impact of climate change policies on agriculture across the EU.
- **Prioritising and embedding into the three strands of rural development** effective principles of good water management.

27. In our view, implementation of these principles should be at member state level.

Future policy

In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

28. European Union freshwater management should change by:

- Taking a strategic approach to effective delivery on the ground by establishing a set policy “principles” (rather than prescriptions). Member States Government’s should be encouraged to work with key private sector interests such as supermarkets and water companies along with land managers to develop a strategy to take forward this area of work.
- Targeting delivery of efficient use of water resource principles on areas where it most urgently needed including re-orientation and prioritisation of existing EU funds within the relevant Member States; in the NFU’s view, water resource issues are most acute in the Southern European states (and within the UK in southern and eastern England).
- Considering how effective principles of good water management principles can be given a higher priority and embedded into the three strands of rural development.
- Considering how farmers and growers can be better engaged in the issue of freshwater management and encouraged to use their expertise to help provide information on what is happening, rather than being monitored and regulated using a compliance mechanism.
- Creating a freshwater policy which takes account of other policy areas such as soils, climate change and agriculture.

What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

29. While NFU members welcome measures which help efficient economic use of resources, water footprinting is not in itself a helpful indicator. Providing volume of water used without a comprehensive understanding of the associated impact of that water use (for example relative scarcity) is not necessarily going to be helpful to delivering efficient water use in the European Union.

Research and innovation

How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively

30. In the NFU's opinion, the EU's future research programme can support freshwater policy and innovation in sustainable freshwater management most effectively by:-
- Considering how the EU freshwater policy and knowledge gained from research or others experience is communicated to famers and land managers in a practical, relevant and useable way.
 - Including knowledge of water management technologies, developing more drought resistant, saline tolerant crops and more efficient irrigation systems.
 - Addressing the significant gaps in understanding the water availability of soils.
 - Increasing the knowledge base of the implications of using different types of water for agriculture i.e. recycled, grey, and desalinated water.

Other policy areas: agriculture and cohesion

How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

31. Consideration should be given to the use of CAP pillar 2 funding (i.e. EAFRD programmes) and EU Structural Funds to provide innovation and development support to those areas where freshwater availability becomes limited to farmers and growers.

Conclusion

32. In conclusion, the NFU believe the EU Freshwater policy should contain the following policy principles:-
- Holistic policies to water resource management, rather than having policies in boxes marked 'flood', 'drought' and 'pollution'.
 - Establishing a de-minimis for pollution contamination linked to proven environmental or public health impacts.
 - Move towards lighter-touch regulation and avoidance of a policy framework leading to risk averse Member State legislative implementation, where access to freshwater for food production might be considered a low priority amongst competing demands for the limited resource.
 - Increases in regulation to be considered only when all voluntary methods have been shown to fail.
 - Provision of relevant, timely, robust, advice, information and communication in order for farmers and growers to make informed decisions
 - Freshwater policy should be based on a catchment based, proportionate and prioritised implementation.
 - Recognition of the value and contribution that food security makes to global political stability.
 - An objective evaluation of the costs and benefits of freshwater standards generally, and drinking water standards in particular, from a sustainability

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perspective. It may be that substantial financial savings and reductions in carbon emissions could be achieved whilst maintaining appropriate levels of protection.

2 September 2011

National Farmers Union (NFU)—Oral evidence (QQ 98-118)

Evidence Session No. 4.

Heard in Public.

Questions 98 - 118

WEDNESDAY 23 NOVEMBER 2011

Members present

Lord Carter of Coles (Chairman)
The Earl of Arran
Baroness Byford
The Earl of Caithness
Lord Cameron of Dillington
The Earl of Dundee
Lord Giddens
Lord Lewis of Newnham
Baroness Parminter
Baroness Sharp of Guildford

Examination of Witnesses

Andrew Clark, Head of Policy Services, NFU, and **Gwyn Jones**, Vice-President, NFU

Q98 The Chairman: Welcome, Mr Clark and Mr Jones. Thank you for coming today. I would just like to deal with the formalities first. I think you should have in front of you a list of interests that have been declared by Committee Members. This is a formal evidence-taking session of the Committee. A full shorthand note will be taken. This will go into the public record in printed form and on the parliamentary website. Obviously we will send you a copy of the transcript and you will be able to revise it in terms of minor errors. As you know, the session is on the record: it is being webcast live and will be subsequently available via the parliamentary website. We wondered if you would like to start with any preliminary remarks, and then we can go into the questions, or you might like to go to questions straightaway—whatever suits you.

Gwyn Jones: Thank you, my Lord Chairman. First of all, can I thank the Committee for the opportunity to come and give evidence this morning? Unfortunately, as I think you have been told, our colleague from Scotland has not made it, but Andrew Clark, our Head of Policy at headquarters, is here with me.

I think water is becoming increasingly an interesting and more important subject. It was only last week that we launched our water survey report, recognising not only the importance of water but the local nature of water requirements, availability and rainfall these days. Looking

at the Water Framework Directive, we agree that the European framework is a good thing. It is quite important that it allows for flexibility not only for member states but within those member states, because of the locality that I have just mentioned.

I think probably the greatest move within the Water Framework Directive has been that it is not as prescriptive as the old directives that we used to have, such as the nitrate directive, for example. If the Blueprint does anything, it ought to maybe bring those to an end now and concentrate on a more holistic approach when it comes to management of water as a resource—treating it as resource and not a problem. I think that is the issue here. We do not want to be looking at water as a problem. We want to look at it as a resource and how we best manage it. I think that when you look at what farmers do already in terms of technology and investment and in building reservoirs and what have you, there is an awful lot of work going on. I think this fits into a wider picture that involves all the other voluntary initiatives that we are involved with, bringing together climate-smart agriculture for the future.

Q99 The Chairman: In your submission, the word “holistic” did come out and that sense of taking an integrated view. In your evidence you say that agriculture “should contribute to improving water quality and our policy is to produce more while impacting less”. I think we agree with that. You refer to the greatly reduced number of pollution incidents from farms, and falling trends in nitrate and phosphate used by farms, and in rivers. You say that “there are more important questions now about how to deliver further improvements most cost-effectively”. In a report from 2010, the NAO stated that the Environment Agency “believes that 30% of rivers are currently failing because of diffuse pollution”, and that Defra “considers agricultural activity as the major cause of diffuse pollution, with the application of fertilisers contributing 60% of the nitrates found in water. It estimates that agricultural activity contributes approximately 25% of phosphates and 70% of sediments.” The question is: what is your view on these findings from Defra and the Environment Agency? Do they not point to the need for significant efforts by agriculture to reduce the impact of diffuse pollution?

Andrew Clark: The NAO report picks up the current understanding of the extent of diffuse pollution. I would say that agriculture contributes part of the diffuse pollution problem, not all of it—clearly in rural areas a larger part, but in urban areas there is also an issue of diffuse pollution. We need to understand the pathways not just from the source of the pollution but also to where it ends up. Some of those pathways can be urban conduits, roads, railway tracks and things like that. The key point, when you are looking at agriculture’s contribution to that, as well as the urban contribution, is understanding exactly where that cause and effect happens: where there is a polluting source, whether diffuse or point, and where the pathway is and what the impact and the extent of that impact is.

I think what we have found working with the Environment Agency over the last four or five years on the Water Framework Directive that the evidence is not there to be able to substantiate addressing the problem in detail in particular locations. It is easy where there is a point source. It is easy where there is a monitoring point downstream from a sewage works. It is not easy when you have a set of monitoring stations, which the Environment Agency has inherited, that effectively monitor point-source pollution and not diffuse pollution.

One of the fundamental issues we have here, in terms of both protecting the agriculture interest and ensuring good use of public money and good focus, is to make sure we have a good evidence base. In that sense we quite understand the Environment Agency having to

take this first stage of the river basin management cycle to get the evidence base right. A lot of the focus has been on asking questions rather than coming up with answers. We think that is probably the right stage, though it is a bit frustrating for those of us who thought we could move to answers and solutions, especially farmers, who like to get on with things.

However, having said that and having put this caveat in of “We have to have the evidence first”, we recognise that at a national level nitrate and phosphate in soils do come from farmland, and a more efficient use of fertilisers and balancing fertiliser use with manure and slurry use, soil conservation practices, is not only good for water quality but good for farm businesses as well. A lot of our focus is on promoting activities that are likely to be good from a water quality point of view, and likely to be good from a farm business point of view.

We are doing reports along with the voluntary initiative on pesticides, which celebrated its 10th year last week. That has been about pesticides stewardship and pesticide problems. We have launched an initiative called Tried & Tested, which is looking at nutrient management and getting that balance between fertilisers and manures. We have also been working with the Environment Agency on phosphate in East Anglia, where we have tried to identify, working in partnership with the agency, those catchments where agriculture is felt to make the biggest contribution to phosphate, phosphate apparently being the greatest risk to meeting Water Framework Directive targets. As a matter of fact, we have found it very difficult to identify a catchment with evidence that indicates that it is agriculture contributing the main amount of phosphate. Quite often we have found that it is other point sources, quite small ones: cesspits or small sewage works. That is not to say that agriculture does not contribute to phosphate; it is just not as big as perhaps some of the stats that you quoted earlier on indicate. So we are doing that.

What we have found from all of that is, rather than just having a blunderbuss approach that says, “We have got to go and blitz the whole countryside in terms of phosphate, nitrate or soil conservation,” we have to be much more targeted. That is an effective use of public money and our negotiating capital with our members.

The Chairman: If I understand you correctly—there may be some question of the magnitude—you accept that farming does contribute to this, but it is actually having the data to prove how to affect it and how to do something about.

Andrew Clark: Yes, there is fact and degree. The key point here is ensuring that, when we decide to do something, we are doing it in the right place. Very often it is an individual field.

Q100 Lord Lewis of Newnham: You quite rightly make the point about diffuse pollution. Point sources one can identify and deal with, but a diffuse source, particularly for things like nitrate, phosphate and to a lesser extent pesticides, is quite the problem. I am not clear in my mind what actually happens here. Let us say that you decide that there is a nitrate problem in a certain area; how do you go about dealing with that and how effective is the agency in helping you out with that particular problem?

You make the point in your article that you sent to us that in fact the difference between the old nitrate directive and the new directive is of course associated with the fact, I think as you say, it allows the least costly solution to be used. I was wondering if you could indicate to us what exactly you meant by that.

Finally, in the phosphate situation, which is, as you rightly say, the most difficult, what you have is a large deposit of phosphate in the sediments of a riverbed. Even if you stopped putting phosphate in, you will still find that the phosphate dissolves out from the riverbed for

what could be a number of years. For instance, I believe in East Anglia, where they have been dealing with a phosphate problem, the only way they have been able to really solve the problem is to remove the whole bed of the river to a certain depth so that they can remove the phosphate from it. As you rightly say, you are doing a study with the Environment Agency. I was just wondering if you could give us any indication of when that phosphate study is likely to be concluded.

Andrew Clark: There were quite a few questions there. I will try to be quick. What do you do with nitrate? What we should do is send you some supplementary evidence. Wessex Water has been working with farmers in their catchments where nitrates have been a particular issue. That shows how you can intervene at an advisory level. What we are increasingly realising is that you do not just add the environmental advice on at the end of the day—just like you should not really act end of pipe. You have to integrate the environmental components into the “Produce more, impact less” argument and work with agronomists.

What it looks like in terms of nitrate management is an agronomist going in there and thinking about—when they are suggesting what advice to give to a farmer, what amount of fertiliser to use—having a really good nutrient management plan, and that being an integral part of the food production plan on that farm. There are some very good case studies that Wessex Water has, which would be instructive in terms of what it looks like.

I agree with you: we are very strongly of the view that the Water Framework Directive, because it has tests for technical feasibility, affordability and cost-effectiveness, is a much more intelligent directive than the nitrates directive. As Gwyn has said, one of our key messages to you is we need to move to intelligent directives not prescriptive directives.

You are right about the phosphate. It is a legacy issue. A lot of phosphate is bound to soil particles. In terms of resolving that problem, how you address phosphate is not just about nutrient management; it is about soil conservation and making sure the soil stays in the field. That addresses both the pesticide and phosphate problem. Once the phosphate-rich soil has got into the stream, river or lake—as it has done in the Broads—then ultimately sometimes you end up having to take the extreme measure they did in the Broads: pumping out the silt at the bottom. Then of course they have a very interesting issue about whether that silt is waste or not, but I will leave that to the Environment Agency to sort out.

Gwyn Jones: It might be worth mentioning that 60% of England is covered by nitrate vulnerable zones (NVZs), where farmers are already restricted in terms of stocking rates, complying for slurry storage, the timing of applications—there are periods when you cannot apply slurries at all—and quite accurate record keeping. If you look at the maps, there is a trend that this is having an effect. We have seen one or two areas now that are de-designated from the NVZ areas. I think this is a long-term issue—it does not happen overnight—but I think there are lots of measures in place that are contributing to the trends. It is important that we look at the trends, because this is not something that will solve itself in a short space of time. It is important that we are all working towards the long-term aim.

Q101 The Chairman: Should we be giving incentives to do things like fencing watercourses and improving the soil and so on? Do you think things would happen more quickly if people were incentivised or it was paid for by the water companies or some other scheme?

Gwyn Jones: Yes, I think it would. A case can easily be made for incentives. There is a difference, though, between a capital investment in fencing and then the maintenance of that, especially if you are fencing stock out of rivers. You get floods and then the fencing is gone, or half of it is gone, and it needs to be maintained on an annual basis. I think there is quite a lot to be looked at here. The overall costs, both capital and then maintenance, can be very high.

Q102 Lord Lewis of Newnham: How do you regard the polluter-pays principle?

Andrew Clark: We can understand the principle of polluter pays, but we can also understand the principle of beneficiary contributes. I think that what we feel is that over many years we have adopted what we regard as good practice, and in hindsight it turns out to be not quite as good as it could have been. I think that is central to sustainable development. Things change and what is acceptable now will not be acceptable in 20 to 30 years' time.

Lord Lewis of Newnham: I agree.

Q103 The Earl of Caithness: Our inquiry is into the future direction of EU freshwater policy, so I want to take you back to where you started with your general statement and get a bit more clarity. What exactly should the EU be interested in and why? There should be a very clear line between the EU, what we do, and what other countries do. Given the climate of the British Isles is pretty different from that of the rest of Europe, what information and knowledge have you got from your sister organisations in the EU about the problems they face with the water directive?

Andrew Clark: There is a clear role for a common EU framework, we would understand, and for environmental protection that provides a consistent approach in all member states. That we can see as being compatible with operating a single market. The issue is, however, those single interest activities like the nitrates directive, which I liken in a sense to the bathing water directive, shellfish waters directive and drinking water directive—they are very single-issue. Those single-issue directives have set quite prescriptive targets with no flexibility and no future-proofing, which I think is in sharp contrast to the Water Framework Directive, which sets a framework, a set of principles, and a process that is hopefully more future-proof. When you look at things like the nitrates directive, it gives absolutely no account of the cost-effectiveness, and it gives no account to the fact that now we are concerned about climate change. It expresses no concern at all about the fact we are increasingly worried about food production. Those are not future-proofed.

Looking ahead, should the EU have a framework? Yes. Should that framework have a consistent set of processes and seek similar outcomes? Yes. Should it be prescriptive? No. Should it be better integrated? Definitely, yes. I think there are some developments. Looking ahead, in terms of going back to what a blueprint should look like, a blueprint has to be a lot more integrated than it currently is, because—and I think I said this to the Committee when I spoke to you earlier—from a farming point of view the problem is that all these directives end up being integrated in a field on a farm. If they are all asking different things, there is absolute chaos in terms of policy ask, and it is not a clever way of working. That is the future.

Moving on to the second issue about the British Isles being different, yes, we have a unique climate. There is some commonality with some bits of the fringe of the maritime part of Europe. We have things we can learn from other parts in terms of process, certainly in

terms of working with COPA²⁵. On the project in Wessex, we worked with Wessex and some farmers in northern Germany, where it is completely dry; we took farmers out there and could not believe how anybody could farm in that sort of environment. There are things we can learn from other parts of Europe. However, we are absolutely clear that there are issues of maritime cool climate, which means that there should be different solutions in parts of Europe, and the Commission and the European Court of Justice should allow those different solutions to happen.

Q104 The Earl of Arran: What have you learnt?

Andrew Clark: We have learnt a number of things. We have learnt that our agri-environment schemes in going for a broad and shallow approach are unique across Europe and have allowed farmers to feel proud about what they do in terms of environmental management and being able to contribute on a whole range of different things. We have learnt that we are ahead of the game in terms of agri-environment schemes. We are quite good in terms of voluntary activity, things like the voluntary initiative on pesticides; people are learning from us and farm assurance; people are learning from us on that. We have learnt from others in terms of consistency of approach and genuine partnership between farmers or farming and the Government, and not fickle changes on a political cycle.

Gwyn Jones: I think the other point is that it emphasises the need for a European framework but also for this flexibility, simply because the differences are enormous. Our water usage in agriculture in this country is 1%. It can be 60% or even as high as 80% in some countries, which is a very different scenario altogether. Then when you look at some of the stocking rates and some of the historic pollution through Holland, Denmark and parts of Belgium, you see that it is very different from what we do. Therefore, I think the framework needs to be very flexible in allowing us to treat this, as I said earlier, as a valuable recourse and not as a problem. It is more of a problem in other areas due either to their water usage or to the problems they have historically had. Having said that, I think the 1% we use needs to be protected because it is invaluable to us. It is either used in fresh produce mainly, where there are high-value fresh crops, or in intensive poultry for example, which is the staple diet of many people in this country. I think it is very important that we protect it.

Q105 The Earl of Caithness: In your blueprint, would you change the criteria that they have in the water directive that every single box has to be ticked to meet a certain quality?

Andrew Clark: That is a technical question. This “one out, all out” is a really difficult objective to meet. It is the classic one where everything is brought down to the lowest performing measure, even if we have made very significant progress in a large number of parameters measuring good ecological status. I think it is a good point. A more generous scoring system would encourage compliance rather than make us feel we are never going to make any progress.

Q106 Lord Lewis of Newnham: Would you not accept the fact that the directive itself is very much more generous in its interpretation of data than, as you rightly imply, the old nitrate directive and things of this nature? For instance, in the case of sedimentation in rivers, I believe this is now measured every three years, whereas under the old scheme of measurements they were done on a very much more regular basis, and so you were in a very much more uncertain position as far as establishing whether you could or could not continue this. Can I just return to nitrates? It is a problem that worries me tremendously.

²⁵ The EU-wide representative body for agriculture.

The nitrate directive, if I understand it correctly—and it seems to have still carried on into the Water Framework Directive—is concerned with the nitrate content in drinking water, the factor of 50mg/l. The main difficulty I see with nitrate is probably nitrification rather than anything else. The drinking water factor of 50mg/l is a figure that requires a lot, in my mind, of establishment. It has not really got the basis for it. Has this been questioned?

Gwyn Jones: It certainly has. That has been questioned ever since the day we first heard of it. I am not sure it is based on any real sound scientific evidence. We have been questioning it throughout.

Andrew Clark: We have questioned the basis of 50mg/l having any human health impact whatever. There is no evidence we have come across that 50mg/l, or even double that, has had any impact. There is reference to blue baby syndrome. It is one of these urban myths. I hear that there was a private borehole in the middle of the States that resulted in blue baby syndrome when people drank from it. This is not a common public health issue. 50mg/l is not a good basis for legislating. Going on to the drinking water directive, I have even more concerns. They are setting a 1µg/l limit in terms of active ingredient. There is absolutely no evidence that, across the board, all of the active substances that can be measured at that level cause public health problems; they are just detectable. Again, it is a frustrating situation that we find, where as a result of that you get products banned because we cannot farm to produce a detectable level or residue level that is so low, so that makes farming more difficult. We are effectively saying that the drinking water standard applies to the rivers that we extract water from, not the taps that we drink water from, which seems a bit of a strange situation.

Q107 Baroness Byford: On the figure you gave of 1% of usage of water on farms, I do not know why, but mine is 2%. Is it just one of those things that I am wrong and you are right, which I quite accept if I am? I know it is quite small, but clearly with climate change we are very keen to use our water to the best of our ability. Earlier in your evidence you were saying that water is a resource, which I totally agree with as well. I have a couple of questions on the use of water, and then I will go specifically to how that fits into CAP. Can you tell us a bit more about the water survey you are undertaking with Wessex because I am quite interested in that? Secondly, in your evidence, you say that “effective principles of good water management should be given a higher priority and embedded into the three strands of rural development”. Could you expand on that a little bit, because it is a little bit short in that? Thirdly, do you support the extension of cross-compliance to include the Water Framework Directive in its flexibility, which we mentioned earlier, as proposed by the European Commission?

Gwyn Jones: The figure we had in our water survey is 1% of water usage in agriculture.

Andrew Clark: The expert is sitting behind us.

Baroness Byford: I am not going to argue with you. I know it is a small figure for the total amount of water used, but even so it is very precious.

The Chairman: Perhaps you could send is a note on this.

Andrew Clark: We will send a note.

Baroness Sharp of Guildford: Your evidence, at paragraph 2, says 2%.

Andrew Clark: The key issue is that it is a small amount in the grand scheme of things. The key thing is that when you come to the summer, where we need to extract, we have a much

larger amount of a diminished quantity. What we are trying to represent is that it is key to have access to water at the key times of the year.

Q108 Lord Cameron of Dillington: On that, could more be done to encourage winter storage of water?

Gwyn Jones: Absolutely, and I think that is one of the problems we have. If farms are to invest in reservoirs, for example, they need some reassurance that they will be allowed to fill them in times of plenty, which seems to be quite precarious at the moment. It is a huge investment to make. Also, on the size of these reservoirs, there is quite a lot of uncertainty over water storage, which in some areas is quite critical to the way we should be looking to manage water resource and then utilising it sensibly and efficiently. We need to have some reassurances and some better understanding of what we would be allowed to do with such investments.

Q109 Baroness Byford: Do you see that being set at a European level or at a UK level?

Gwyn Jones: At the moment, it is mainly a UK problem with the Environment Agency.

Baroness Byford: It is not an EU problem as well?

Gwyn Jones: Yes, it would be part of a larger problem throughout Europe. Our issues with filling and building reservoirs would be to do with planning and the Environment Agency in this country, so it would not be on a European basis when it comes to those particular problems.

Q110 Lord Lewis of Newnham: Do people know what happens in Europe? In other words, do they receive subsidies if they build their own reservoirs?

Andrew Clark: Yes, they do. It was one of the points I was going to be making under your comments about integrating water management into Common Agricultural Policy and rural development regulations. The rural development regulation itself, which is obviously a pan-European measure, provides plenty of pegs on which to hang greater water efficiency and water conservation/water storage. Both currently and going ahead, as I understand it, there is no shortage of pegs to set an incentive-led approach across Europe, in the UK or in England. At our tenants' conference last week, Defra launched the farm and forestry improvement scheme, a capital grants programme. That includes measures about water efficiency, clean and dirty water separation, and some detailed capital support for slurry management. There are plenty of pegs there and we are keen to integrate that into the competition and innovation bit of the rural development type of activities.

The issue is not of principle; it is an issue of resource availability. This comes back to an issue for Defra: how much money do they want to set aside for biodiversity funding within agriculture-environmental schemes, and how much of it are they prepared to put into managing the water cycle or encouraging best practice on farms with water? It goes back to the point that in preparation for this, and we would perhaps like to bring it out more, our view is that managing the water cycle as a fundamental primary resource has potentially very significant benefits for a whole range of environmental outcomes, whereas what we tend to do is manage for farmland birds or a habitat. If we managed for soil conservation, water quality and nutrient management, we would get climate change and biodiversity friendly farming. We might get a different landscape, but it is going to be more suited to water protection. There is no reason why it should not be more accessible and there is no reason why the wildlife would not find new places in different combinations of habitat across the

landscape. Fundamentally, managing the water cycle has to be good for a whole range of different environmental outcomes.

Q111 Baroness Byford: Indeed it has. If I could just take you back to your last comment, you mentioned it would depend on how much money Defra allocates. We are looking at this from a European point of view, and I do not think we can be specific just for the UK, can we?

Andrew Clark: No. Every member state across Europe allocates different funding to different priorities.

Baroness Byford: They will set different priorities, though, won't they?

Andrew Clark: Yes. Experience has shown across Europe that some of them put much greater emphasis on competition and innovation and rural economy measures in the second pillar of the rural development regulation. Others, like us, have put greater emphasis—80% of it—into agri-environment schemes.

Baroness Byford: Are we wrong? Are there better ways to do it?

Andrew Clark: It depends what those agri-environment schemes are doing and what you want to achieve. The case I have just been making is that, if some of those agri-environmental schemes put greater emphasis on the outcomes of climate change and primary source care, some of things that they currently target, like farmland birds or SSSI protection, might be taken care of anyway.

Q112 Lord Cameron of Dillington: From our experience of existing EU water legislation, what lessons do we think we should learn?

Andrew Clark: I think one of the lessons that we have learnt is that prescriptive EU regulation where it sets the standard is not future-proof. In the nitrates directive particularly we have seen that, and it not only sets a standard but it then also says what you should do to address that standard. It says you have to address livestock farms, slurry storage and closed periods, and it gets really into the detail of that and decides whether a member state is compliant or not compliant. That is an old-fashioned way of addressing the challenges before us: the production and environmental challenges. That is the lesson.

Lord Cameron of Dillington: The EU Commission will seek to analyse past performance before producing the next blueprint. Are you concerned that blueprint might well suffer because in the first place the Commission will not have sufficiently assessed what past performance really has been?

Andrew Clark: I am tempted to say that. The Commission are probably trying to capture all the things that it thinks it has missed so far, as well as address things it would like to achieve in the future. Basically, instead of simplification, we are going to see addition.

Lord Cameron of Dillington: What would you feel inclined to draw to the attention of the Commission in its exercise of analysis of past performance that you would suspect it might not lay sufficient stress on?

Andrew Clark: The Commission talks about simplification; it talks about providing greater discretion to member states, setting a framework, looking to the future and sustainable development. The rhetoric is good, but the detail is often failing. They like detail; that is something that the Commission officials and bureaucrats generally are there to do.

Q113 Lord Giddens: Could you say a bit more about the old-fashioned versus new-fashioned approaches? What is the new-fashioned approach?

Andrew Clark: We think the Water Framework Directive provides an insight into what would be a more future-proofed regime.

Lord Giddens: Would that essentially be a regime of risk management?

Andrew Clark: Yes, it is looking at risks. It is looking at pressures and impacts. It is not saying what the measures should be to address those. It is saying, “Is it technically feasible to achieve those?” In that sense it is a more flexible and a more forward-looking approach. It sets the framework, process and broad outcome. In terms of good ecological status, it says that should be equivalence in different hydromorphological areas across Europe. Good ecological status in England would be similar to good ecological status in Germany, so therefore we should get similar cost impositions; that is good from a single market point of view, as well as being good from an environmental point of view. Not getting into the detail of how you achieve that, that is a more future-proofed approach.

Lord Giddens: When you say it should not be prescriptive, you mean because there is so much diversity.

Andrew Clark: To answer the earlier question, it is going back to our experience of looking at the nitrates directive and other directives that set a standard and says, “It is absolutely forbidden to go below or above that, and, if you do, you have to do X, Y and Z.” There is debate about what that standard should be: is there a public health reason or an environmental reason for it? Can you set a single standard across the whole of Europe and is that appropriate? That error is compounded by then going on to say, “And if you pass that, this is what you have to do.” That seems to me to be a really straitjacketed approach for approaching European legislation.

Lord Giddens: You have to have elements of prescription somewhere, surely. Somebody has to do that in relation to, for example, quality of water, or pollution or whatever it might be. Do you mean it should be the nation state?

Andrew Clark: The Water Framework Directive does have a level of prescription or a level of ambition that is clearly stated in terms of good ecological status and the sorts of things that would contribute towards good ecological status. In that sense it does have a common, shared endeavour to achieve that. We are covering 27 member states.

Lord Giddens: I am just trying to tease out what you actually meant when you said, “There should be no prescriptive element.” Do you mean there should be no prescriptive level coming from the EU level?

Andrew Clark: What I am saying is that current old-fashioned legislation sets prescriptive standards and prescriptive solutions to those standards that are not well suited to every part of the European Union.

Lord Giddens: I understand that, because of diversity and local conditions, but who therefore should set the prescriptions in your view? You obviously have to have quite a lot regulation of everything surrounding the use of water, pollution of water, management of water and so forth.

Andrew Clark: Going back to the Water Framework Directive, which is the subject today, the way that those standards are set is by member states coming together within the

framework established by the Water Framework Directive to compare standards and inter-calibrate those standards so that they are equivalent. Where we have a legal description in the framework that says that good ecological status is a slight or moderate change from pristine conditions, what does that mean? It is defined in discussion with member states at a technical and political level and inter-calibrated. That is probably one of the reasons it has taken quite a long time to get from 2000 to where we are now. That is defined in discussion with member states and the Commission at a technical level.

Lord Giddens: Do you think that is a good way to proceed?

Andrew Clark: It recognises that there are a lot of different situations, but we have to work towards a common belief or a shared understanding of what we are trying to achieve. In England we end up with a clear standard, and in Germany they have a clear standard, but how that is equivalent is sorted out in the backrooms. It is something that is appropriate to the geomorphic forms, climate, type of rivers, streams and ground waters that we have here.

Lord Giddens: That is what I was trying to ask you. Do you think therefore that quite a lot should be set at a national level?

Andrew Clark: Yes. Nationally we have a lot of knowledge about what is good—what qualifies as good, moderate or poor. That is a major contribution towards that. That still has to be calibrated with other assessments in other member states. It is all very well us having a clear idea, but if the French farms are farming to a completely different standard then that is not going to be good from our point of view in terms of business management, or from an ecological point of view. There is a need to then take that standard and compare it with others and see if it is equivalent. That is a technical discussion.

Q114 Baroness Parminter: You are opposed to the EU promoting water footprinting; could you say a bit more about that? If not that, what other EU initiatives would you support to deliver some of the water efficiencies that we need, given the success of footprinting in delivering reductions in carbon through the lifecycle of products?

Andrew Clark: We have not done so much work in terms of carbon footprint in water. One of the issues we have there in terms of labelling is being able to understand what the consumer needs and what the consumer will understand in terms of different carbon labels, and whether they would weigh up a carbon label with a welfare or organic production label. I was not quite sure about the beginning of the question.

Baroness Parminter: In your submission you say, “While NFU members welcome measures which help efficient economic use of resources, water footprinting is not in itself a helpful indicator.” I am asking why you are opposed to it, given the two sentences are rather light on detail.

Andrew Clark: We have worked with IGD on water footprinting, and it is clear that it is very difficult to have a robust measure of the amount of water used in producing a product. If we had sugar produced in the West Indies or Brazil and compared that with sugar produced in the UK, they might have similar levels of water footprint—I do not know because I do not have the figures to hand—but surely part of that needs to reflect how scarce the resource is in those countries. For example, 100 litres of water in Sudan is a darn sight more valuable than 100 litres of water in the UK. A simple water label like that—it would have to be simple, otherwise consumers will not understand it—just is not meaningful. It does not reflect the scarcity of that resource. That is some of the issue.

Gwyn Jones: It links to the previous question about good ecological status; it is going to be different in each member state, depending on their circumstance. The trick is to get a framework that allows them to achieve the best ecological status within the constraints and climate they have and the challenges they face.

Q115 Lord Giddens: I think your emphasis on the holistic point of view is a really good one. I would support that. It seems to me that you are probably still going to need some prescriptive elements at a European level, and you will always have the issue in European Union directives of how you translate the general into the specific, whether that is at the national or local level—whether you go directly to a local level for the prescription, for example. It does not necessarily have to be filtered through at a national level. When you are talking about most of these issues, you are going to have general standards of some sort lying in the background.

Gwyn Jones: Yes. We would agree with that.

Andrew Clark: Yes. There is always going to be a tension between the detail and—

Lord Giddens: When you say there should be no prescriptive element, I am not sure that is feasible.

Andrew Clark: It depends what we call a prescriptive element. Good ecological status to me sets a standard. Whether that counts as a prescription or not may be in the eye of the beholder.

Lord Giddens: I would say it does, yes.

Andrew Clark: In that case, that level of prescription is acceptable.

Lord Giddens: The European Union should be trying to do that. It should have underlying it the sort of model you are proposing. We need to integrate all these things into a simple system.

Andrew Clark: It is just a misunderstanding. We are at cross-purposes. My prescription is 50mg/l.

Lord Giddens: You were rather unequivocal when you said there should be no prescriptive element; that does not seem to me to be feasible.

Andrew Clark: Yes, okay.

Q116 Baroness Sharp of Guildford: This again picks up the degree to which the Water Framework Directive is prescriptive or non-prescriptive on the issue of governance. In your submission you say on the one hand that you think the UK has been investing rather too much time in trying to engage stakeholders in the process of planning and improvements for water management. Then you go on to say that the NFU supports the principle of engaging stakeholders to work co-operatively in the catchments where they live and work, rather than taking a top-down regulatory approach. Could you explain a little bit more precisely what you want to see done? In your view, alongside farmers and land managers, who are the stakeholders who ought to be engaged?

Andrew Clark: The passage that you read out is a reflection of the frustration. We would prefer if we knew where we were going to be at the end of the process. First of all, the stakeholders round the table need to be both the beneficiaries and the polluters, in a sense, with some ringmasters to ensure fair play, at a national, regional or local level—whatever is

the most appropriate level. Those are the people who need to sit round the table in terms of coming up with solutions and negotiating the solutions.

Going back to your earlier point about the frustration, I think what we have felt has been that when we started this process we understood from the Environment Agency that there was a very good understanding of pressures and impacts and relative apportionment. The more we dug into the evidence base in the stakeholder process, the clearer it became that there was not the detailed evidence base necessary for well-judged and targeted action. We are at that stage now where we know what we do not know—this whole Rumsfeld business: we know the unknowns. We know the generality of the scale of the problem.

Baroness Sharp of Guildford: You were dealing here with the Environment Agency, and you felt that the Environment Agency first of all did not engage sufficiently with enough stakeholders or that they started with a set idea of what they wanted to find out.

Andrew Clark: In hindsight, we all—I think the NFU as well—perhaps felt we knew more than we did. It was only when we came to exercise the process that the Water Framework Directive rightly sets out that we realised what we did not know.

Baroness Sharp of Guildford: On the whole, was it a useful exercise?

Andrew Clark: Yes. I can honestly say it was a useful exercise. However, perhaps all of the players around the table could have been a little bit more honest about what we did not know.

Q117 Lord Lewis of Newnham: In your section on research and innovation, you refer to the communication to farmers and land managers of relative and useful research that has been carried on. How is that done at the moment and is it being done to any large extent? It is section 30 of your submission.

Andrew Clark: In terms of research, again I think we are better placed now than we were five years ago, with the creation of AHDB, the Agriculture and Horticulture Development Board. There is also now recognition of the importance of agronomists, and companies like Syngenta, Hutchinsons and Masstock—the major agronomy companies—and Kingshay in the dairy sector. In agriculture we have a much better understanding of how we can get to farmers, landowners and farm workers with new knowledge and new research. With AHDB working as a single-levy company rather than a separate set, there is opportunity there also for common research and common marketing principles and communication to be brought to bear. I think we are in a better situation now than we were previously: able to intervene on a rationale basis, on a reasoned basis, and to use those organisations to better effect, both in the private and public sectors.

Baroness Sharp of Guildford: So they in effect act as the knowledge exchangers. Research is done by Syngenta, for instance, and they explain that research to the farmers and the landowners.

Andrew Clark: Yes.

Baroness Sharp of Guildford: You may or may not know that we have just completed an inquiry into innovation in agriculture.

Andrew Clark: Yes.

Baroness Sharp of Guildford: One of our major conclusions was that we needed to have a much stronger advisory system in the UK than we have at the moment. You were talking earlier about Wessex Water and the work done there in terms of the nitrates and how helpful it is to change farming methods, and the role of advisers here in helping farmers to change their methods.

Andrew Clark: It is absolutely critical, and the Committee's report on innovation captured it very well: the importance of the advice and knowledge transfer function. It is not enough just to do the innovation or the research. For it to have an effect, it has to be transferred to farms and support given to implementing those ideas, otherwise it is lacking. It is a particular issue in England because we do not have a national advisory service in the same way as they do in Scotland or to some extent through Farming Connect in Wales. The result of that is we tend to mix and match, or patch, in an English context. Having said that, it does mean we are a bit more innovative, and we are thinking, "How can water companies help us do the job?" Water companies also think, "How can farmers do the job?"

Gwyn Jones: I think it is fair to say that it is not just on farms; look at some of the road maps that are being produced and worked on in the supply chains. In dairy, for example, you have two, three and even four different grades of water in processing factories, which are used for different purposes. There is a big overlap here between work done on climate change and water use. It is all interlinked inevitably, isn't it?

Baroness Sharp of Guildford: Yes. Thank you.

Q118 The Earl of Caithness: Do you see any chance of the Commission using their reform of CAP as a vehicle to be more prescriptive on water policy for the polluting farmers?

Andrew Clark: To be honest, it is very difficult to know how they could use CAP to deliver the detailed solutions that we have been talking about in the Committee today. It is interesting that they say they are going to introduce Water Framework Directive requirements into cross-compliance when the last member state implements the Water Framework Directive; I am not an environmentalist, but I think progress at the slowest is quite an interesting concept. From a farming point of view, when it comes to cross-compliance your payment depends on it, so the obligation has to be black and white. It goes back to some of the discussions we have had about prescription. We can see the value of farmers having soil conservation plans, nutrient management plans and water management plans, and, better still, an integrated resource protection plan for the farm. We can absolutely see the value of that. Beyond that, actually saying what it should do goes into the stage where prescription goes a step too far.

The Chairman: Thank you very much.

Andrew Clark: Thank you.

National Farmers Union Scotland (NFU Scotland)—Written evidence

Background

1. NFU Scotland welcomes the opportunity to submit evidence to the House of Lords inquiry into EU freshwater policy.
2. NFU Scotland was formed in 1913 and is Scotland's leading agricultural organisation. We represent 9,000 farmers, crofters, growers and other supporters the length and breadth of the country. Our purpose is to promote and protect the interests of our members by influencing government, the supply chain and consumers in order to secure a sustainable future for Scottish agriculture. We work alongside sister organisations in England, Wales and Northern Ireland, as well as other rural, business and consumer groups, to deliver on our purpose.

Strategic objectives of EU freshwater policy

3. NFU Scotland agrees that the aim of future EU freshwater policy should to ensure “sustainable use of good quality water in the long term”. Critically, it must attempt to balance the role of freshwater in providing key environmental services alongside quality food production and sustainable economic development.
4. NFU Scotland considers the current cyclical process of river basin planning to be a sound method to ensure integrated and adaptive planning and action. It facilitates action and reflection and action, and mitigates the complacency bred by simple long-term targets.
5. NFU Scotland is concerned that current thinking on freshwater policy within the EU institutions (amongst others) does not yet demonstrate widespread understanding of the significance of food security. Pressures on and from freshwater seem likely to increase, and we are concerned to ensure that there are appropriate policy frameworks in place to manage the competing pressures to minimise negatives impacts in either direction.

Adding value

6. NFU Scotland believes that the EU can add value to Member States' efforts in freshwater policy through setting appropriate water management standards that put Europe on a good footing. Policies must be developed and communicated in such a way that they assist Members States and Regions develop joined up policies (e.g. understanding the need to balance environmental services with food security and sustainable economic development).
7. There is huge diversity across the EU in terms of the pressures on and from freshwater. EU policy must have the flexibility for Member States and Regions to be able to set thresholds and approaches that fit local circumstances. These must then be able to be adjusted to take account of changes (both positive and negative) in circumstances.

Future policy

8. NFU Scotland believes that EU freshwater policy must change so that it encourages policy makers and regulators to view land managers as key contributors to success, rather than as they often do at present, blocks to progress.
9. Problems of water scarcity and drought are thankfully ones that do not, in the main, affect Scotland. In fact, we often suffer from an excess of water, and our farmers and others would rightly question the value for money and effectiveness of water footprint labelling. This illustrates the diversity of circumstances that EU freshwater policy must account for, and consequently the need for local adaptability within an overall policy framework.

Research and innovation

10. The EU's future research programme can most effectively support freshwater policy and innovation in sustainable freshwater management by focussing on understanding the trade-offs that must be made in terms of land and water use, and how these can best be managed. It should also focus on increasing efficient use of resources and the meaningful sharing of best practice.

Other policy areas: agriculture and cohesion

11. NFU Scotland firmly believes that sustainable use of land and sustainable use of water are inextricably linked – this puts land managers at the heart of any future policies and mechanisms. To this end, we believe that Pillar 1 and Pillar 2 of the Common Agricultural Policy should offer land managers incentives for good practice, complementing a system of baseline regulation.
12. NFU Scotland would oppose negative approaches to tackling environmental issues (e.g. further restrictions on input use). Where we have seen the most positive changes in land manager behaviour in Scotland has been when they have been positively engaged and encouraged by the Scottish Environment Protection Agency (SEPA) to tackle diffuse pollution. If land managers are respected and rewarded for what they can offer, the trade-offs that will be required to deliver environmental services, food security, and sustainable economic growth will be achieved more quickly and in a more meaningful way than we have seen to date.

1 September 2011

Natural Environment Research Council Centre for Ecology and Hydrology (NERC)—Written Evidence.

The Centre for Ecology and Hydrology is the UK's centre of excellence for integrated research in terrestrial and freshwater ecosystems and their interaction with the atmosphere. As part of NERC, we provide National Capability based on innovative, independent and interdisciplinary science and long-term environmental monitoring, forming an integral part of NERC's vision and strategy. Working in partnership with the research community, policy-makers, industry and society, we deliver world-class solutions to the most complex environmental challenges facing humankind.

Our views are submitted under the **issues** and **specific questions** requested in the call for evidence.

Strategic objectives of EU freshwater policy

The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?

1. The overarching goal to ensure ‘*sustainable use of good quality water in the long term*’ is generally valid. The achievement of ‘good status’ for European water bodies is a clearly stated goal of the Water Framework Directive (WFD). It must be stressed, however, that the terms ‘sustainable’, ‘good quality’ and ‘long term’ are all open to interpretation and have no clear scientific definition. It is clear, however, that the management of Europe’s water resources requires consideration of demand-led resource allocation with a focus on conserving water, using it more efficiently and accounting for the need for a healthy fresh water ecosystem.
2. Quantifying the water required to sustain the natural environment is a considerable challenge. For example, what is the quantity (e.g. flow in a river or water table depth in a wetland) which is needed to maintain ecosystem services or to prevent a long-term damage to those services? It must be recognised that is not sufficient merely to maintain minimum flows, or water levels, but that all aspects of the flow or water level regime are important for aquatic and wetland ecosystems including flood magnitude, frequency, duration and timing as well as periodic inundation of floodplains. Environmental damage due to water stress may not be incremental and we know little about possible ecological thresholds or ‘tipping points’.
3. Coping with extremes (floods and droughts) and the frequency with which extremes may occur provides a major challenge looking to the future. The potential for climate change to affect the location, frequency and intensity of rainfall means that historical hydrological behaviour may no longer be an appropriate basis to assess future flood and drought risk (this is known as non-stationarity).

4. It is worth emphasising the difference between ‘water scarcity’ and ‘drought’ in the context of water resource sustainability. Water scarcity can be a result of low rainfall but can also result from too high demand relative to rainfall. Drought is a short term phenomena which can occur in areas with no long term water scarcity issue. Both of these phenomena will change in the future due a range of external pressures (climate, population, land use and management, etc.) changing the location and nature of currently water scarce regions and the frequency and duration of droughts.

5. Consideration needs to be given to the challenges that surround both increased water supply options (e.g. more farm-scale storage ponds, reservoirs, transfers, etc.) and demand management options (e.g. water efficiency measures with regard to agriculture, buildings, products, etc.). There is a clear need for robust scientific evidence to support any case for developing new water resources but this becomes increasingly challenging in the light of uncertainty around future socio-economic and climate conditions.

6. Long –term ought to be a view to at least 2050 based on win-win adaptation options. That is, demand management and technological advances to reduce water use must be robust and flexible compared with infrastructure solutions to water supply problems. It is worth noting that a time horizon of at least 30 years must be incorporated given the long planning cycle for major infrastructure projects. On the other hand, uncertainties around climate and socio-economic projections over longer time periods can lead to difficulties in decision making and planning legislation.

7. It is worth noting that most of the stated targets in the HM Treasury UK National Infrastructure Plan 2010 (e.g. in the area of Flood management, Water and Waste) go through to 2015. This may flag the potential for mismatches between national and European planning and policy horizons. Alternatively, this may also provide opportunities to nest five year planning cycles (such as further described below in relation to WFD) to meet national requirements within a longer term 30 year strategic vision.

How adaptable to emerging new challenges is the current policy framework likely to be?

8. The WFD promotes the integrated management of water resources within a river-basin framework to support environmentally sound development. As it stands, this current policy framework is adaptable to meet emerging challenges (e.g. implementation, climate resilience, resource efficiency, policy integration, etc.) based as it is on a five year cycle of planning and review. It requires the integrated water demand of all water use sectors within a river basin and appropriate water ‘accounting’ and modelling frameworks need to be made available to facilitate the necessary planning and management of the available water resources.

9. One specific issue relating to implementation of the WFD relates to the scientific basis on which ‘programmes of measures’ are agreed and implemented to achieve ‘good status’ within a water body. For example, land use management measures implemented to protect against water quality degradation and groundwater depletion and to deal with possible climate change impacts, may not have clearly identified and quantifiable environmental impacts within a 5–10 year timeframe. This is particularly important with respect to longer term ecological responses.

Adding value

How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

10. Many aspects of policy relating to surface water resources, notably surface water abstraction, flooding issues and water quality, are conventionally and conveniently managed at the level of river basins. Groundwater resources, however, often extend beneath more than one river basins and infrastructure to transfer water between basins exists requiring policy relating to droughts, and the associated water resources management, to be focused at regional or national level.

11. As with CAP policy, member states should be given flexibility to allocate funding relating to water policy in a way which best suits the requirements of their own regions. For example, under certain conditions, financial support to farmers (e.g. in East Anglia, UK) to build small scale reservoirs for rainfall and flood harvesting is needed and could be cost effective at both national and EU level.

Future policy

In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

12. There is a need for measures to cope with climate change that should include alternative water supply options such as wastewater re-use, brackish water use and desalination to cover agricultural, industrial and domestic demand. In this respect, there is also a need for more flexible policy with regard to abstractions for dealing with droughts and for adaptation to climate change, for example, licensing consumers to abstract water during summer high flows to top up reservoirs. The possibilities for artificial aquifer recharge should be fully explored.

13. There is a similar need for policy on the use of waste water during droughts (e.g. in cooling towers), and the use of less water demanding and drought tolerant crops to cope with drought periods. There is also a need to link water scarcity issues to agricultural policies and to an EU policy with regard to biofuel/energy crops and their impact on water availability. In general, the opportunity needs to be taken to link policies aimed at land use, food security, energy security and water security within nested, harmonised or compatible spatial and temporal frameworks.

What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

14. The integration of water scarcity and drought into sectoral policies is an issue that should be introduced into policy in the future. Measures to cope with climate change, especially drought, must include the use of alternative water resources although an assessment of the risks and impacts of options such as desalination, brackish water and wastewater re-use must be fully quantified. The need for alternative water supply options

will undoubtedly grow in the future due to climate change and the reduction and/or changes in seasonality of water availability in many countries and regions.

15. Management of drought across Member States has to date been reactive rather than proactive. Water scarcity and drought remains under-addressed as a major policy issue and there is no clear future regulatory action aimed at combating the impact of droughts. Several EU member countries do not have clear drought management plans. There is an opportunity for an integrated policy approach, including a hierarchy of measures prioritising water demand management, as part of the implementation of the WFD.

16. Existing water planning practices (mainly supply-oriented) have proven inefficient in coping with the adverse impacts of drought, leading to over-exploitation of water bodies and as a result, aquatic ecosystems have been adversely impacted (e.g. in southern European countries). Demand management strategies are currently not promoted as obligatory measures in the WFD to reduce water consumption and increase water use efficiency during drought events.

17. Most EU countries do not perform forecasts of water scarcity and/or drought events on a seasonal basis, mainly because weather forecasting on this time scale is highly uncertain. Monitoring networks for precipitation, river flow, groundwater and soil moisture, however, can be used to estimate the current water storage and availability. Given the high degree of uncertainty in climate change projections and the growing pressure on water resources, it is essential that these hydrometric networks are maintained to facilitate effective drought management.

18. The concept of a water footprint for consumer products and activities is being increasingly used to raise the awareness of consumers on the water consumption associated with their lifestyles. It is a little known statistic amongst consumers that 62% of the UK's agricultural water footprint is overseas (i.e. more than half of the agricultural produce consumed in the UK is grown using another countries water resources).

19. Much care needs to be taken in the use of water footprints, however, as importing crops grown in countries where water is plentiful, despite apparently large water footprints, should be seen as positive use of EU water resources rather than negative. Water footprinting should be used as one tool in an effort to consider the optimisation of EU agriculture in areas where the water resource is abundant and/or where other water demands are lower. Such issues lay at the heart of ensuring water, food and energy security at EU and global scale. Consumers already face many choices including fair trade, carbon footprint, local production; care needs to be taken in adding another issue for consumer choice. Water footprinting may be best aimed initially at buyers (e.g. supermarkets).

Research and innovation

How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?

20. Research needs to be conducted with the full and active participation of all stakeholders (policy makers, environment agencies, industry, etc.) and needs to be clearly targeted at water resources management and at water policy support and implementation. An appropriate model for this was the Specifically Targeted Research Projects (STRP's)

funding mechanism employed in EU Framework Programme 6. Such projects can be tasked, for example, with providing clear management guidance (e.g. with respect to droughts), with developing scenario assessments (e.g. with respect to water scarcity and water resource availability) and developing pan-European environmental standards and indicators (e.g. with respect to freshwater ecology and ecosystem services).

21. In order that water resources may be managed to provide sustainable supply for all use sectors, there is a need for a focus of research funding into the 'valuation' of ecosystem services and the understanding of the ecosystem impacts of 'programmes of measures'. Without a full understanding of the value of the ecosystem, it is not possible to assess the proportion of water that should be allocated to the ecosystem function.

22. In terms of droughts and water scarcity, focussed research is needed to help develop specific river basin plans that explicitly deal with drought conditions, adaptation to drought and distinction from water scarcity. The research needs to consider current climate variability, future climate change and needs to take into account the dynamic state of the storages in the river basin. Common indicators (e.g. preventive, operative, management/organisational) need to be developed to address different conditions and different drought phases (pre, during and post drought). The measures for mitigating drought impacts need to be assessed according to the severity, duration and spatial extent of the event. The implications for aquatic and wetland ecosystems of climate change and drought and how this affects their response to abstraction, impoundments and discharges, needs further research.

23. There needs to be a specific research focus on developing seasonal forecasting for droughts at EU scale. Methods for reducing uncertainty in forecasts are urgently required and the forecasts need to be appropriately linked to actions within a management plan. Additionally, more work is needed on the down-scaling of future climate scenarios to make them appropriate for local impact analysis, especially on eco-hydrological processes.

Other policy areas: agriculture and cohesion

How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

24. If we can fully understand how changes in managing the land/agriculture or social/economic behaviours will affect the water environment then legislation in these areas provides a further option/tool for sustainable management of water. The important challenge for policy makers is then to develop a higher degree of interdependence of different policies across the agriculture, water, energy and environment sectors. More effort should be focussed on sectoral integration of water policies. Integrating the WFD elements into CAP is important as both policies follow very different regulatory philosophies. Policy on renewable energy sources and targets for biofuel production have implications for water use and water quality and it is important that the future policy development in this area is harmonised with water policy objectives.

25. There is also a need to adopt the concept of the Green Economy in the water policies, where growth in income and employment is driven by investment that reduces

Natural Environment Research Council Centre for Ecology and Hydrology (NERC)—
Written Evidence.

carbon emissions and pollution, enhances energy and resource efficiency, and prevents loss of ecosystem services.

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Natural Environment Research Council Centre for Ecology and Hydrology—Oral evidence (QQ 52-97)

Evidence Session No. 3.

Heard in Public.

Questions 52 - 97

WEDNESDAY 16 NOVEMBER 2011

Members present

Lord Carter of Coles (Chairman)
Baroness Byford
The Earl of Caithness
Lord Cameron of Dillington
Lord Giddens
Baroness Howarth of Breckland
Lord Lewis of Newnham
Baroness Parminter

Examination of Witness

Professor Alan Jenkins, Deputy Director and Water Science Director, Centre for Ecology and Hydrology.

Q52 The Chairman: Professor Jenkins, good morning and thank you very much for coming today. If I may, there are some formalities to start with. You have in front of you a list of interests that have been declared by Committee Members. This is a formal evidence-taking session of the Committee, and a full shorthand note will be taken. This will go on the public record in printed form and on the parliamentary website. We will obviously send you a copy of the transcript, and you will be able to revise minor errors. The session is on the record, it is being webcast live and it will subsequently be available on the parliamentary website. I wonder whether you would like to start by just making a few general comments and talking about your background, and then we will go on to the questions.

Professor Jenkins: It is my pleasure to help you in any way I can. My current role is director of water science at the Centre for Ecology and Hydrology, which is a wholly owned research centre of the Natural Environment Research Council. I should state at the outset that I have no formal role in managing water, and I have no formal role in developing policy around water. My role and that of my institute is to undertake science that hopefully is relevant to policy and management, and we produce tools and data for a variety of stakeholders involved in water management and policy.

I also have some roles at a European scale. I sit on the Water Supply and Sanitation Technology Platform and am in charge of a pilot programme on extreme events and their impacts—floods and droughts. I also represent the UK at the moment on the governing body of the new water Joint Programming Initiative, which aims at aligning national research programmes in water to get two and one to make four to make more of national resources. I also have a formal role with the WMO as hydrological adviser to the permanent delegate, the UK Met Office. My background is mainly in hydrology and water quality. I am not an ecologist, but I have taken advice from my colleagues who are. I do my best to represent them.

Q53 The Chairman: Thank you. If I may, I will go to the first question. I suppose it comes to these issues of “sustainability”, “good quality” and “long term”, which you refer to in your written evidence. The first point is whether those three elements, in the context of water management, should be defined in the EU Blueprint.

Professor Jenkins: A definition of those three elements would be useful. I do not think that the Blueprint will reach a definition of those three elements. Of course, “sustainability” is subject to much research at the moment: the sustainability of ecosystems, ecosystem services and so on. We are perhaps at the early stages of understanding those issues.

“Long term” is perhaps easier to define. We seem quite comfortable discussing the impacts of climate change perhaps 30 or 50 years from now. Perhaps that is a misplaced comfort, because many people seem to have forgotten the uncertainties around climate change, but that is probably the timescale that “long term” ought to cover because of the lead-in for financial investments. Uncertainty is no reason for not doing anything. I believe that we can quantify uncertainty to an extent. It has to be taken into account; it is a risk in any investment. That is the kind of timescale.

To finish the question, it is unlikely that the Blueprint will offer us a formal definition of those three concepts, but I believe it should aim to highlight the need for a much greater understanding of how good status is related to the sustainability of ecosystem services. That would be a good start.

Q54 The Chairman: Just a couple more then. We have been told in other evidence that 75% of water bodies are assessed as not reaching good ecological status. The question is what these criteria should be, how we arrive at those, and what “good” looks like.

Professor Jenkins: I believe that the standards for setting the boundaries between high, good and moderate ecological status were based on very good scientific evidence. They are relatively robust. One comment I should make is that the Water Framework Directive, as I am sure you will know, was quite a departure in the way that policy was based. It was previously more sectorally based, or more targeted; the Water Framework Directive is more all encompassing. As such, it has always been running ahead of scientific understanding. There is the real issue of whether those boundaries are defensible—whether good status, as it is defined, is really correct.

As far as the UK is concerned, I would say that we have a wide variation of water status. In Scotland and Wales, we have lots of waters that are effectively pristine; they have a very high quality status. In the more densely populated areas, particularly in the south and east, of course, we have some departure from pristine, so those waters are deemed, by the terms of the classification, to be below good status. The issue, of course, is whether good status should represent that deviation, or whether some other element, perhaps around ecosystem

sustainability or the sustainability of the ecosystem service that those waters provide, would be more appropriate.

The investment to bring many of those lowland waters to good status would probably be high. We live in a highly altered landscape in the south and east of the country, and we must expect our surface waters to be highly altered. This is true not only of the UK. If we look across Europe, you could argue that Scandinavia has lots of very pristine waters; if we move to central and eastern Europe, lots of waters are going to fail to meet good status because of agricultural and population pressures, and so on. Some 75% of waters fail that boundary. One would have to ask whether that boundary is appropriate, and there could be more work to define the good to moderate boundary, but just moving the boundary does not address the problem. The issue is what service the waters that are failing good status are not providing.

The Chairman: Yes, it is a question of effectiveness, and then you put cost-effectiveness with that. Thank you very much. That is very helpful.

Q55 Lord Giddens: Could I dispute something you said? You said, “Many people seem to have forgotten the uncertainties around climate change”. As someone who works in the field, I do not think this is true at all of anyone who pays attention to data. The IPCC, for example, as you know very well, has numerous scenarios. One of the issues we have to face around all this is how you plan ahead against the backdrop of uncertainty where some of the uncertainties are very high-risk scenarios. We can be pretty confident about many of the shorter-term impacts of climate change, some of which are probably already affecting our water, so far as we know. A generic issue that I think is going to face all water management is how you construct a robust framework. Obviously most people tend to argue in terms of resilience of one sort or another. The issue will be a fundamental one for us, I think.

Professor Jenkins: The issue I was perhaps rather clumsily trying to get to is that climate scientists fully understand uncertainty; I have no doubt about that. The issue that I see is around the use of climate model outputs to make water resource assessments for the future, or to assess how frequent flooding or droughts might be in the future, and using those forecasts of how the climatology might change to assess how the water system may change.

Q56 Lord Giddens: Sorry, I do not mean to interrupt, but I am afraid it is more complex than that, because the scenarios, as you know, also involve the human response, and how systematic and structured that response is, because you are dealing with a kind of reflexive, moving system here. The level of risk depends on how much we successfully cut down carbon emissions, for example.

Professor Jenkins: That is correct. I would say, however, that my institute has been involved in a number of assessments looking to the future on climate change impacts alone. One of my hobbyhorses is that that is not the way to do things, because climate change will probably not have as big an impact on water resources and water availability as population change and potentially agricultural change, or food demand, but that is another issue.

The issue about water resource assessment is that we have taken the uncertainty from the climatologists, but there exists a much bigger uncertainty in the downscaling of the information we get from the climate models. The climate models produce rainfall and temperature fields, data that are at too big a spatial scale for us to use in our assessment models. The grid squares are too big, so we employ bias corrections and downscaling techniques so that we can use that information.

The issue is whether the techniques that we use are really appropriate and what the associated uncertainties are, on top of the uncertainties that we get from the climate scenarios, which we all take on board. For example, when we look at the impact of future climate change on floods or droughts, the climate models that reproduce the last 20 years of weather do not do so well. We know why that is; they do not contain convection very well and do not do blocking anticyclones particularly well, and so on and so forth.

Q57 Lord Giddens: Climate and weather obviously differ anyway.

Professor Jenkins: I was not taking a swipe at GCMs or climatologists.

Q58 Lord Giddens: I was just trying to put it the other way round; an important issue is going to be how one plans against a backdrop of uncertainty.

Professor Jenkins: Absolutely, and the way forward is not to do what we have done. It is not to take the outputs from those models and simply spray them into our current catchment-based models; it is to turn it around and say, “What is the question in water management that you wish to answer? What scale of information do we need to do that?”, and then ask the climatologists, “How could we best get this information from those models?”. There is just a slight difference; it is a question of reversing the way we ask the question, rather than simply taking what we are given and putting it into our existing methodologies. I recognise that, in the UK anyway, the climate change influence on water may well be only as big as the changes that we are likely to see because of increasing population demographics and so on. That is a tough one.

Q59 Baroness Parminter: I have two questions. In referring to climate change and the other challenges that are facing us as a society, you say, “The opportunity needs to be taken to link policies aimed at land use, food security, energy security and water security within nested, harmonised or compatible spatial and temporal frameworks”. How do you see that being addressed and, frankly, what challenges to good quality water resources are there if they are not addressed?

The second question is this. We have seen carbon footprinting as a very useful way of helping the industry to bring down carbon. How soon do you see there being an equivalent water footprinting for the lifecycle of products?

Professor Jenkins: On the first question, for many years now various organisations have moved forward the concept of integrated water resources management. It came about in the 1970s, probably, with an understanding that it is impossible to manage water on its own. We have all understood that. However, we do not understand how all these sectors of society influence water quality and supply. Truly integrated water resources management remains a goal, but we are not there yet.

As to what I was trying to express in that perhaps overly ambitious sentence, the Government Chief Scientist only last year or the year before talked about the perfect storm in which we have a problem with food, energy and water, and of course increasing population, changing economic situation, and changing climate. It is hard to disaggregate even the issues around energy, food, and water security. It is very difficult to grow much food without any water, and much of our renewable energy strategy will revolve around water and its availability.

One of the problems I see is that policy tends to be by sector. However, the Water Framework Directive has the capability to operate at really rather a small scale. It can work

at the level of individual farmers. The Common Agricultural Policy—not my specialist area—does not seem to lend itself to that very local-scale issue, but perhaps it is more applicable on a broader scale. I am not sure where renewable energy policy is going. What I was trying to get to there is that when we have modelling and data frameworks, we need to ensure that they are capable of operating at both regional and local scales to deal with the issues. If the agricultural issue is more on a regional scale, there are some aspects of water quality that are local scale but need to be addressed at a much bigger, regional scale.

Therefore there is an opportunity to pool these things together. We should not operate in silos; we should not manage agriculture, manage water, manage renewable energy. The tools are out there; I am not saying that the tools are interrelated at the moment—they need some work to do that—but the opportunity is there.

The other case that I would state is that in water management, at a local level, there is often a discrepancy with what is required at a basin level. It is sometimes necessary to get farmers upstream to change the way they do something to improve the lot of water demanders downstream. We have to retain the ability to demonstrate to those farmers why we wish them to change to a behaviour for which they see no apparent benefit. Somehow these systems have to provide a way of giving an overview so that people can buy into the bigger picture. We will never solve all these problems at the very small scale, but we have to manage the problems sometimes at a very small scale. I was trying to get across this need to bring sectoral policies together and to cope with these different spatial skills.

Q60 The Earl of Caithness: Can I just come back to the point you made in reply to Lord Giddens about changes in future weather patterns? Is the UK, with its maritime climate, fairly unique in Europe, as we have found with agriculture, and if that is so is enough cognisance taken of that in the Water Framework Directive?

Professor Jenkins: Is it fairly unique? Yes, although we are probably very similar to Ireland in uniqueness, but the answer for the British Isles as a whole is probably yes, sitting where we do, at the latitude that we do, at the extreme western edge of the continent. Is enough cognisance taken of that? Probably not, because we have a very big gradient of not just population but also weather within the UK. For example, the north of Scotland receives 2.5 metres of rain per year; we in London probably get 0.5 metre, or a little over. That is a pretty big discrepancy. In theory it can be coped with within the Water Framework Directive, but, because the Water Framework Directive works on those thresholds, we suffer perhaps a little more than some other countries in the interpretation of those thresholds.

Q61 Baroness Parminter: And water footprinting?

Professor Jenkins: Sorry, your other question was around water footprinting. There is a big drive towards water footprinting at the moment, which my institute has stayed out of. In my experience, industry—the food industry in particular—has made a big issue of water footprinting and whether industries can have a badge to say they are good water stewards or not, whatever that means. Yet there is a lot of discussion over how the water footprint should be calculated. There ought to be some more generic guidance on that, that industry buys into to normalise the way in which people look at these water footprints.

The reason for looking at water footprints needs to be that we are genuinely interested in using water resources where there are available water resources, and not using them where there are no water resources and they are needed for other things, and are not simply encouraging the public to buy one product over another because it has a badge that says it

has a low water footprint. It is not really enough to say that some product has a low water footprint, because it has to be normalised to how much water is available in the area in which the product is produced. Therein lies an issue with virtual water, which is another hobbyhorse of mine, which I think has perhaps been taken in the wrong direction. It is not a bad thing to grow beans in an area of the world or an area of Europe where there is abundant water. We should, in fact, applaud that, and we should buy and eat more of them. That is good EU water policy, in my opinion. It is probably a bad idea for us to consume beans that are grown in areas of acute water shortage, where the water could perhaps be used for other sectors: human demand, for example. That is a bigger issue, and that is why one needs to consider not just the water footprint or the embedded water or the virtual water. In fact, the footprint needs to be normalised by the water resource availability in the area in which you are making the footprint.

Q62 Lord Lewis of Newnham: Is any attempt being made to do exactly what you say, because the concept of virtual water seems to have hit the headlines. Some of the figures one gets are enormous. In fact, in your paper I think you imply that 62% of the food in this country is imported and involves water being used from other parts of the world. Your suggestion that this should have a normalisation factor involved seems eminently reasonable.

Professor Jenkins: I do not know about that happening at the moment, but the eminent scientists responsible for the concept of virtual water are fully aware of that and agree that that needs to happen. The idea that something has high virtual water content—that phrase is difficult for me, because virtual water does not exist; it is by its nature virtual—is not always a bad thing. That is the message that needs to come out. In the calculation itself, it is not just normalisation that needs to be looked at. There are other aspects of virtual water. The water that is responsible for a cup of coffee that we hear about—so many litres of water to produce a cup of coffee—went through the coffee plant and probably evaporated, or transpired, from the leaf surfaces. It must be somewhere. It does not disappear. It is still in the water cycle. We have not looked at that enough to be able to say what virtual water really represents. I think it should be interpreted with caution. I would like to see somebody research that a little more.

Q63 Lord Giddens: A propos of what you said about population, I think it is also worth emphasising that population projections are notoriously uncertain. It was not long ago that we were worried about a declining population in the UK; now we are worried about it increasing to 70 million, but that is based simply on projections of current trends, and so many things can influence future trends when you are talking about a single country like the UK. In some ways we can be more confident on a global level than we can be about the UK. In all these things a lot of uncertainties mesh. It is a fundamental issue for us to work out how you get a framework, and a robust one, especially against the background of privatised industries here, to generate an effective future planning system.

You mentioned something about European comparative evidence. We are looking for what sort of evidence we might find from other EU countries that would be relevant to this inquiry. Is there an organisation or research group or something that you think we could turn to that would be useful? I am thinking of information comparing different EU countries' clean water practices, or whatever it might be.

Professor Jenkins: I would say that the European Environment Agency would be the first port of call. In particular, it hosts a very fine information system called WISE, the Water Information System for Europe.

Q64 Lord Giddens: You could advise us, if necessary, on which individuals we might talk to.

Professor Jenkins: I could indeed—my organisation could.

Q65 Lord Giddens: Thank you. The main question here relates to what you say about the relationship between the Water Framework Directive and the CAP, where you say they are based on different regulatory philosophies. Could you tease that out a bit, and also at this point turn to a few more practical implications? You have mostly talked at a fairly high level, and we have to investigate the impact of European legislation and European planning frameworks on water management. It would be helpful if it could descend to a more practical level at the same time, if that is possible.

Professor Jenkins: The Common Agricultural Policy is not my area of expertise. I would say among scientists in my field that there is a commonly held view that the Common Agricultural Policy has led to an expansion in agricultural production in the EU over the last 10 years. That expansion has largely come about often by using methods that are not ecologically sound.

Q66 Lord Giddens: Such as?

Professor Jenkins: The heavy use of chemical fertilisers, chemical pesticides, herbicides and so on. The use of those chemicals is tightly controlled by legislation, but the understanding of how those chemicals degrade in the environment is not perfect in all cases. We are always surprised to find residues of certain chemicals in drainage waters from agricultural systems in concentrations that we are told by manufacturers should not happen; the degradation process should be quicker. Of course there are almost undoubtedly metabolites, residues from the degradation process, that could have ecological impacts that we do not know much about.

The Water Framework Directive is very much based on the concept of “the polluter pays”, if we believe that is possible. Of course the Environment Agency spend a lot of time trying to work out, if there is a pollution problem, who is responsible for it and fining that person. The Common Agricultural Policy is not really based on that same way of thinking, to my understanding. It is at a bigger scale; farmers are paid to keep land in production, and rightly so. Again, I am not an agricultural economist or an agronomist, but I would have thought that there would be a way to link those subsidy payments to wider environmental benefits, especially targeted at water. For example, it seems clear to me that, in certain parts of the UK, on-farm storage should be increased. I am mystified as to why many farmers, particularly in East Anglia and central England, do not have on-farm storage for periods of shortage. On-farm storage has another benefit in that if one was very clever about where it was sited and how the system was put together, it could also be used to reduce pollution from run-off from milking areas and other agricultural areas.

Payments or subsidies could be made that would be targeted at encouraging farmers to bring about on-farm storage. It would help. It would have helped during the water shortages of March and April this year, which caused some issue in the east of England. Some kind of balance of CAP payments being brought into line with farming sustainably seems a possibility to me.

Q67 Lord Giddens: Do you think there is a tension between the grand reach of the CAP and the local emphasis of the Water Framework Directive?

Professor Jenkins: I think there potentially is, yes. A water course can be polluted from a relatively small area, and that is why it has to be dealt with at rather a local scale. The farming subsidy tends to be at a much bigger scale.

I could also add, my Lord Chairman—sorry to jump in—that the notable successes we have documented came about from some of the targeted policies that happened before the Framework Directive came into being. The Urban Wastewater Treatment Directive I think is now largely proven as being hugely successful in reducing phosphorous concentration in our lowland waters. Reduced phosphorous concentration is extremely useful in improving ecological function and the ecological quality of surface waters. Of course that directive was focused on phosphorous-stripping from smaller—well, big and relatively small—sewage works. That has been documented as being a good way to go about things, and is subsumed within the Framework Directive.

The Nitrates Directive, however—the nitrate vulnerable zones—has perhaps proved less effective as a targeted piece of legislation at reducing nitrogen inputs, possibly because the targets of nitrogen concentrations in drainage water were set too high to be ecologically effective, and because some of the tools for implementing that were not appropriate for farmers to implement.

Q68 Lord Lewis of Newnham: Can we turn to water scarcity and droughts? This is a point you make in your paper; you emphasise the difference between these two particular terms. You say that most EU countries do not perform forecasts of these events on a seasonal basis. In fact you go on to call for a specific research focus on the developing seasonal forecast for droughts at the EU level. Conversely, you also call for monitoring networks for, say, precipitation, river flow, et cetera, to be maintained. Can you say more about where you think the responsibilities should be for monitoring these networks?

Professor Jenkins: The first thing to say is that drought is usually a large-scale phenomenon. It would be unusual for Europe to experience a drought in only one country; it usually spreads beyond countries. In the UK, however, droughts have historically affected either the north or the south of the country. The reason for that is the north of the country is effectively served by surface water—there are few aquifers. In the south of the country, on the other hand, the water is predominantly from groundwater from aquifers. Groundwater is effectively recharged by winter rainfall. If we have a shortage of winter rainfall, we have a problem in the south the following year; if we have a shortage of rainfall in the summer—or the winter as well—then we have problems in our northerly basins. That picture is reflected—north and south—across Europe.

As to the responsibility for drought forecasting, drought forecasting at the moment worldwide is problematic. Our weather models—of which the UK Met Office model is, I would argue, one of the best in the world—has some issues moving beyond a five-day forecast, but in fact forecasts are made out to 60 days by the UK Met Office, by the European Centre for Medium-Range Weather Forecasts in Reading and by other meteorological services around Europe. Again, as we touched on earlier, the issue is around translating those weather forecasts. I am going to say that they have little skill, and I do not mean that in a bad way; it is very hard to predict the weather to those timescales. Trying to convert those forecasts into possible water availability—taking account of evaporation, soil moisture and so on and so forth—makes the idea of predicting a drought or a water shortage two months away very difficult. There is now a European Drought Observatory, which is being set up at the EU Joint Research Centre in Ispra, northern Italy, which has the focus of trying to bring together national forecasting systems to do a better job of predicting

drought across Europe. The responsibility for that forecast must remain with national met services, in my opinion.

At the moment the responsibility for monitoring in the UK lies predominantly with the Environment Agency. It has responsibility for measuring groundwater tables and river flows, and there is a joint Met Office and Environment Agency responsibility for monitoring rainfall. Some research institutes have a role in measuring soil moisture. That is an awkward thing to measure and will be largely facilitated by some new satellites, which will hopefully give us some very wide and detailed information in a few years' time.

On the interpretation of those data, the data have two uses. Data can be used and input into those meteorological models to help the forecast. That does not yet occur, and is something we are currently working on. They can also be used to tell us how far we are deviating from some historical normal position. That interpretation of the data is very much something my own institute does in co-operation; we help the Environment Agency to do that integrated assessment of water availability.

I guess where I am coming from is that in the UK I believe that the responsibility is entirely correct; the mix of Environment Agency, UK Met Office forecasting and appropriate research laboratories to help with interpretation of the data seems entirely correct. Those data, however, need to be made available widely, because drought management is rarely at a local scale; it tends to be at a much bigger scale. Drought management in the UK, in its extreme, will depend on water transfers from one region to another. Therefore one needs to know not just the water availability in one basin but the UK situation. In Europe that is potentially a bigger issue, because that means that water might need to come from other countries. There needs to be a coming together. The UK is slightly separate because it is unlikely that in a drought we would ever draw on water from anywhere else because of the difficulties of moving water around, because we are an island.

Q69 Lord Lewis of Newnham: Is there is a sufficient mechanism for the transfer of water in the UK? I assume it would be from the north to the south or the south to the north, from what you said earlier.

Professor Jenkins: The biggest transfer that we have been looking at recently is from the Severn to the Thames. That is not new thinking; that was around before my time, I am told by a previous director. From the north to the south, yes. Does the infrastructure exist? Probably not. There is also quite an issue involved in those water transfers because any transfer from one basin to another will require pumping. Pumping water is not very energy-efficient. It is not possible to do it with the output from a few windmills. It needs a stable fuel to do it. Carbon emissions will be associated with that, and they have to be factored into the whole thing. It is not easy, I am afraid, and we are not set up to deal with it at the moment.

Q70 Baroness Byford: In your written evidence you said that several EU member countries do not have any clear drought management plans. Is it easier to name the ones that do? Are you talking about half of them, and are they the newer countries joining us or are they the traditional ones in the European Union? Then you go on to say that someone has to be responsible for it, but surely that should be individual member states.

Professor Jenkins: Yes, it should.

Q71 Baroness Byford: Should we, therefore, as a Committee, be looking to recommend, through the European Commission or Parliament, that this is an urgent matter that should be addressed?

Professor Jenkins: To be fair, it tends to be the former eastern European countries that do not have formal—

Q72 Baroness Byford: Are you talking about four or five of them, or are you talking about more than that?

Professor Jenkins: Four or five, but also the northern countries, particularly the Scandinavian countries, because historically drought has not been a major issue for them. It would be harsh to expect them to put a lot of work into drought planning. Of course, one has to have an eye to the future. We can learn a great deal by looking at the drought management plans that they have in some of the southern European countries, the Mediterranean countries. They clearly have a bigger issue than we do, and their plans tend to be much more proactive. They have given a lot of thought to how they will behave in certain drought situations, where our plans tend to be very reactive. If we reach a certain threshold, a certain drought trigger, we will respond in this way. That is a slightly different way of thinking and I think there is a lot for us to learn there.

Q73 Baroness Byford: Clearly we are lucky as a country in being one unit. As you said earlier, we do not have to draw from the others, but some of the other countries do draw from the north and south.

Professor Jenkins: They do, and of course international river basins exist in Europe, the Rhine and the Danube being two of the bigger ones. There is a real problem in managing water resources in those basins.

Q74 Baroness Howarth of Breckland: The east of England did have a drought this spring. The east exists as well as the north and south. This takes me into a question about the transfer issue and the long-term planning and the position of the water industry. It is a question I wanted to ask at some point. When we heard evidence from the industry, it was pretty gung-ho about it, saying, “We can work together, and if we need water in one place we can get it from another”. As a member of the Committee, I felt a little sceptical about the way the system was set up, and whether it would happen. We really were very interested to know whether countries in Europe—some countries have privatisation on a different basis, but many of them have state-owned water systems—have better longer-term planning for the sharing of water. These are quite small geographical areas—East Anglia is not far away from the north of England. Could we learn from Europe as to how we might do that kind of sharing better as and if the variation between regions becomes more difficult?

Professor Jenkins: In this country the water companies could indeed share resources. An infrastructure would need to be built. Engineers, in my experience, can build anything, and they love to build things, so we could charge them with doing that and I am sure they would do a good job. It would cost money, and it is not clear to me who would pay for that. I could not see the water companies paying for that infrastructure.

Q75 Baroness Howarth of Breckland: Do you think that is likely? They have a five-year planning cycle and some of these are 20-year projects. What are the prospects for sharing water?

Professor Jenkins: The prospects at the moment are not great, in my opinion. I agree with you. The water companies, if you ask them, are very keen to share. I do not know whether it would happen by sharing. I am speculating now, and I probably should not. There would be a price to pay; one company would have to buy from another. That would have an

implication. In the end the consumer would pay, I am sure, and that has social implications and so on.

If we are going to put those kinds of plans into place, maybe the question that we ought to be looking at comes back to the uncertainty over the future. If we are really convinced that there is a risk that these situations are going to occur in 20 or 30 years, there must come a point when we accept the uncertainty and say that we have to deliver something that would enable us to cope with it. At the moment I do not think I could point you to a situation anywhere in Europe where there has been sharing across international boundaries of water supply systems. Of course, the international commissions for the Rhine basin and the Danube basin talk about sharing water equitably, or at least making sure that nobody takes too much out of the Rhine or Danube as part of supplying whatever demand is necessary. There are good things to learn from those bodies. Certainly Spain is implementing a very big water transfer system to take water from the north to the south. It is using a combination of engineering and natural river drainage to enable that to happen. There are lessons to be learnt there.

Q76 Lord Lewis of Newnham: You referred earlier to the fact that you thought that one of our major problems is population growth. Associated with population growth will be problems such as housing. How far do you think housing is going to provide you with real problems, particularly in the south, where there seems to be a major programme for house-building development, and yet as far as I understand there is little recognition in that particular programme of water requirements. What sort of imposition is this going to place on the water position in the country?

Professor Jenkins: Perhaps I was wrong to talk about population growth as the issue; population growth, particularly in the south east, is a major issue. In 2005 and 2006 we had two quite dry winters in a row, and the water supply and the water resource situation in the Thames Water area, in the Thames basin if you like, was approaching crisis. There was much discussion of how we would cope with a third dry winter. By luck or whatever, it did not happen. There was no third dry winter, so the groundwater was effectively replenished. We do not have many documented occurrences of three dry winters in a row. Curiously, it last happened in a series of 10 years around the turn of the last century, between the mid-1890s and 1905, when there were several dry winters in a row. A recurrence of such a situation would cause real problems in the south-east of the country.

In terms of housing, we perhaps ought to think a little more innovatively about how we are going to supply all the population in new houses in the south and east of the country with a sustainable water supply. There are options, of course; rainwater harvesting is now practised quite extensively in India, for example. We do not tend to use it here very much. A lot of rain falls on the roofs of all those houses in the south-east of England. It goes promptly down the drainpipe and gets transported very rapidly via the run-off system, drainage system, into the river and out to the sea. I am not an engineer, but it seems to me that that is a resource we could tap. There are, of course, groups that are looking at that.

We have the option to look at more recovery from wastewater; we have the option, which has been picked up here, to look at desalinisation, but there are issues around carbon emissions from desalinisation. Again, this is another example where innovation means there are other options for providing water, but it may have an impact on carbon emissions and energy requirements. It could be that the innovation in engineering, water treatment technology, rainfall capture and the reuse of grey water should be factored into the future

rather than perhaps rushing headlong into looking at infrastructure to transfer water from further afield.

Q77 Lord Cameron of Dillington: You have been dealing with my question already to some extent when you have been talking about drought management or water management generally. I was going to take one step back and look at the governance systems that are set up. You talk about river basin management, which is a fairly obvious way of doing it; groundwater is slightly more difficult, because it tends to be even more trans-boundary, trans-basin, as it were. How do you meld a European framework into the desire to have a polycentric governance of water on a more localised basis? We are an EU Committee; are there any good or bad examples within the EU?

Professor Jenkins: Again, I would say that there are good examples around those international commissions for the protection of the bigger rivers—there are good examples of how countries, regional Governments, have worked together. There is much to be learnt from that. There are other smaller international river basin districts in the UK, of course, between Northern Ireland and the Republic, where we seem to manage okay. We have shared river basins with the devolved Administrations—between Scotland and England: the Solway and the Tweed. There is good practice there in how those managers and those responsible for management communicate and manage together. I think we could draw on some good examples that would help us.

Q78 Lord Cameron of Dillington: In an eco-strategy for water, obviously water issues are implicit in every aspect of one's life, from agriculture and industry to domestic usage, and it can be a cause of water problems and a result of water problems on both sides. In your written evidence you talk about water demand management and demand management strategies. Could you elaborate a bit on those and how we ought to bring those into the overall water framework?

Professor Jenkins: Much of the water management tends to be supply-oriented, particularly in times of shortage. The supplier would, for example, bring about a hosepipe ban in an effort to preserve supplies. A good deal can be done, and has been proved to be done, by trying to manage the public's misuse of water. In times of drought many water companies—Thames Water in particular—work very hard to encourage the public not to misuse water and to make their demands less. We are told they have been shown to work very well. A lot more could be made of that in times other than drought, if you follow what I am trying to say.

One of the problems that we have right now is that over the last few years—perhaps brought about by the Water Framework Directive—as we, and the world, start to talk more about sustainability of ecosystems and ecosystem services, people now understand that ecosystems need water to function. The question is how much water they need. It is increasingly turning out that they need quite a lot of water. That ecological or ecosystem demand is now being factored into the demands of agriculture, industry and humans. When there is not enough, it is usually the ecosystem that loses, because we would not reduce the flow to those other sectors. That makes sense to me, because we would not preserve an ecosystem at the expense of preserving human life, for example—that probably would not be defensible—and history tells us that the ecosystem recovers. We have very few examples of ecosystems irreversibly damaged by drought stress.

The problem is that as we move into the future we do not know what those thresholds or tipping points might be. It would be a little bit blasé simply to reduce the amount the

ecosystem has every time there is a shortage. But in terms of demand management, I think there is a lot that can be done to make the public more aware. The use of meters in homes is now proliferating, and it is probably a good thing. I am a little sceptical in my discussions on this with water companies, because my water meter is under a grate in the middle of my driveway. When my daughters are taking their third shower of the day, they do not see a water meter spinning. If they did, I think I could easily convince them not to do it because they would understand, but because it is out of sight, it is not there. Maybe again innovation is needed. In my workplace we have a meter that, when I arrive in the morning, shows me how much water we used yesterday. Immediately you think, “Maybe I could use a little bit less”. I think there is a lot we could do as a society to try to make our demands a little less.

Q79 Lord Cameron of Dillington: Could I go back to my earlier question about governance just for a moment? You gave us some good example in the UK—or Great Britain, as it were—but you also mentioned earlier the fact that in some countries, particularly in eastern Europe, some of the governance structures are not quite right. Is there anything that the EU should be doing to encourage better governance and transnational or trans-member state governance in order to make the overall long-term management of our water better? Sorry, that is a huge question.

Professor Jenkins: There are issues around which EU approach is required. It particularly comes to a head when there are droughts, because some countries will have water and some will not, so one needs to manage at a much bigger level, beyond national boundaries. The EU level is probably the way to deal with that. That means that all countries should be encouraged to monitor their water reserves in a transparent way, so that we have an overview at the European scale and know where there is water resource and where there is not. The virtual water issue requires an EU approach, in my opinion. The EU should be encouraging industry to be located, or certain agricultural practices perhaps to be targeted, in areas where there is appropriate water resource. That would make sense at the EU level. Of course, notwithstanding what I said about the UK earlier, it is a little awkward for the UK because we are not physically attached. Therefore, while we would be subjected to it, it would be very hard for us to be formally involved in that water policy, because we stand a little to one side. The virtual water issue we can be involved in.

Q80 Baroness Howarth of Breckland: You have talked quite a lot about the Water Framework Directive, but can we bring that together a little and talk about what works and what needs to change from your perspective? Could you set out for us what you see as those aspects of the Directive that work well and which should be retained or strengthened? How far will the proposed catchment management pilot projects in the UK show how integrated and strategic approaches can be used to meet the Directive’s requirements? What are the main problems that you see with the Directive, and what shortcomings have they produced in EU freshwater policy? We ask those questions in the capacity of the last remark you made, in that we are not attached, in the UK, to anything else, and there is a little bit of concern in the Committee that we have a problem that is a UK problem, and that Europe has other issues. One of the things we really want to look at is how the Water Framework Directive helps us in the UK overall, and how we can in fact learn from or offer advice to Europe on the whole framework.

Professor Jenkins: One of the Water Framework Directive’s successes is it has been a major step forward in bringing stakeholders together—all those people who use the water environment and who are responsible for the water environment. It brings together farmers, manufacturing industry, people who discharge stuff to water, the Environment Agency, the

water companies. There is still a long way to go on that, but the ethos of the Directive is that we work together to provide the solutions to bring the water up to good status.

Q81 Baroness Howarth of Breckland: Do you think that would not have happened without the Directive?

Professor Jenkins: I do not think it would have happened to the same extent with the sectorally targeted legislation that we were following, so that is good. I think the idea of having a European measure of quality, a standardised tool for looking at the quality of our water bodies across Europe, is excellent, and we should have it. That standardised tool is particularly useful for looking at the status of our water bodies within the UK. I am not sure that that tool is appropriate yet for us to compare easily our water bodies with Spain's or Greece's water bodies. There are still some issues around defining those boundaries, which are left to member states, of course. I guess, because of the situation you have just mentioned, that because our waters do not tend to drain into any other country, we do not gain that much from comparing our water status with the rest of Europe's status from an operational point of view. We are, however, European citizens, so we need to show that our water is as good as anywhere else in Europe. But there are issues around those tools perhaps.

Q82 Baroness Howarth of Breckland: In relation to that, we have heard that one of the issues in the framework was its lack of flexibility on some of the testing issues, which can cause difficulties in the proportionality between cost and quality. Do you have a view about that?

Professor Jenkins: That is indeed correct. I subscribe to that. I think the tools, the tests, are a little stringent. I believe that 20-odd ecological or biological indices come into play in classifying a water body. The system is that if you fail any one of them, then you have failed. That seems scientifically a little stringent to me. That could be looked at. As I said earlier, the basis of the Framework Directive was really way ahead of the science to underpin that policy, and we are still playing catch-up. There is work to be done there, I have to say.

Q83 The Earl of Caithness: If you were the Commissioner, and looking at it now, what would be the two things that you would say were the most important areas for countries to tackle?

Professor Jenkins: I believe that the most important thing is to find an explicit relationship between good status, which is currently defined as a deviation from some good level, and sustainable use of that water. I think we probably have to accept that a large proportion of surface waters in high population density countries are not going to achieve good status as it is currently laid out. The economics of solving that do not add up. I think we should, as I said, work a little harder on trying to work out how those waters are fulfilling the ecosystem services that we require of them. Perhaps they do not have to have a perfect diatom assemblage, as they have in pristine waters; perhaps they do not have to have the same macro-invertebrate characteristics. They could still perform what we need of that water body for recreation or as receiving waters for drainage and so on and so forth. Moving forward, good status is a good step along the way, but we need to accept that good status will not be achieved everywhere. Therefore we need another measure.

Q84 Baroness Byford: Slightly following on from that, I follow your logic—I do not know that I like it, but I follow the facts—but when my colleague asked earlier about population change and you referred to the south-east of this country, could I take that generally across

Europe? The population changes will be growth in urban areas and a reduction in rural areas, which will obviously make the problems greater because you have greater building and everything else that goes with it. That is one of them. The second thing you mentioned earlier on in your evidence to us was the way in which we can use what I call “wastewater” better; you particularly mention Spain. I wonder whether you could tell us a little more about the research you think might be necessary to look at that angle. Thirdly, if I might, do you see a value in the proposed European innovation partnership on a water-efficient Europe? Three separate questions.

Professor Jenkins: I think the last two questions come together. We need innovation in wastewater treatment technology, but I think we are moving very much in the right direction. We are close to major breakthroughs in membrane technologies and reverse osmosis. A lot of new techniques are being tested that should enable us to make more use of wastewater through better treatment, and with no excessive carbon emission or power usage cost.

Q85 Baroness Byford: Is that in the UK or throughout Europe?

Professor Jenkins: The UK is up there, yes, absolutely.

Q86 Baroness Byford: Which other countries are up there with us?

Professor Jenkins: The Dutch are very good; the Germans are high up there. In my experience, it is the usual suspects; the big contributors and main drivers are the French, the Germans, the Dutch and the UK. I very much welcome the European innovation partnership. It is an interesting idea: a European innovation partnership on a water-efficient Europe. Many of my colleagues have said that we need a more efficient partnership on water innovation, which is a slightly different way of looking at it. We work a lot with European partnerships, funded by the European Union. Those partnerships are not always very efficient; the funding models are not always very efficient. Innovation is definitely needed; innovation is possible. A stumbling block exists in the UK over innovation, particularly for the water industry due to its relationship with Ofwat. The Technology Strategy Board has been looking at establishing a fund to take forward innovation in the water sector in the UK for some time. So far it has not been able to do that because the water industry is not so interested in investing in innovation, because, if they come up with ways of making more money, they are not allowed to have that money.

Q87 Baroness Byford: And that problem does not happen in other countries?

Professor Jenkins: It does not happen to the same extent because of the way the water governance happens here with the water supply industry. Those are issues that I do not fully understand, but we have a lot to learn from Europe, and we should work with the Europeans. The UK sits at the top table of water research, but there is more for us to gain from working together with our partners in research in other European countries.

Q88 Baroness Byford: Can I go back to my other question: is the research being done into where you are getting more populated areas? Is there specific research into that or not?

Professor Jenkins: Not so much, although that is coming out a little more in DG Research’s plans for the new framework programme for research in Europe—there is more of an emphasis on research into urbanised and heavily populated areas.

Q89 The Earl of Caithness: You have used a term a couple of times that I have to confess I do not fully understand the meaning of. What do you understand by virtual water?

Professor Jenkins: Virtual water is the amount of water that is required to produce a product. A loaf of bread, of course, comes effectively from a cereal crop, wheat, and that crop uses water in its growth cycle. Of course, when you get your loaf of bread, it is effectively dry—it has very low moisture content—but one has to produce all the cereal that is required to make the flour that goes into that bread. You can estimate the amount of water that passed through the field of plants that went to make that loaf of bread. That is given as the virtual water content of that particular loaf of bread—or a cotton T-shirt.

Q90 The Earl of Caithness: Is that fully understood and agreed throughout Europe? We are talking about the same thing, the same language?

Professor Jenkins: Pretty much, yes.

Q91 Baroness Howarth of Breckland: But you said you had difficulty with the term “virtual water”, because it is not water at all—it is virtual. Earlier on you made a comment about that.

Professor Jenkins: Absolutely, it is a misnomer to say, “This T-shirt has a virtual water content”. It is absurd; it has no water—it is completely dry. Water is used in its production and it was used by the plant in generating the cotton. Do not forget that it is also used in turning the cotton into a T-shirt; there is water in the whole supply chain. That is perhaps where there is no consistent approach to the virtual water content. In fact it goes further than that, because one could consider the virtual water not just in the manufacture of the product but in getting the product on to a supermarket shelf. That is not necessarily factored in, whether they use a lorry that runs on biodiesel or whether they send it by train. There are discrepancies around the virtual water content.

Q92 Lord Cameron of Dillington: And of course it depends on the ecosystem it came from. Cotton from Uzbekistan and Kazakhstan has destroyed the whole of the Aral Sea, which does not exist anymore.

Professor Jenkins: Absolutely, and that is why we have to come back to normalising against what water was available to produce that crop.

Q93 Lord Giddens: What is the European Network of Freshwater Research Organisations? Would that be a useful source of data for us?

Professor Jenkins: There is EurAqua, and in fact I represent the UK on that particular body. It may not be useful, because it is entirely focused on aligning the research that we do nationally such that we can avoid any duplication of effort, for one thing, and we can focus our expertise in areas where we are experts and draw on European experts to add the other bits. I would not necessarily think that would be a source of information for this Committee. We do not run a particularly good information system associated with that network; it is rather informal. There are other networks. The Water Supply and Sanitation Technology Platform would be a good source. It is heavily industry-biased, but it is a good source of information. Again, I would point you to the EEA’s Water Information System for Europe.

Q94 Lord Lewis of Newnham: When we talk about water as a whole and the application of it, as you see from the questions, we tend to concentrate on agriculture. In

point of fact, when you look at it from the total usage of water, it is not a great user of water, comparatively speaking. What other areas do you think we ought to be asking questions about? Immediately one thinks of sewage, industry, energy production, things of this sort. Where are the other big components?

Professor Jenkins: The biggest user in the UK is definitely not agriculture. I forget the percentages, but less than 10% is used for irrigated agriculture in the UK. You have a number obviously, but it is small. That is not the case worldwide, of course. Agriculture is one of the biggest water users worldwide, around 70% to 80%, largely associated with rice production. In the UK, of course, public water supply is a big user; the manufacturing industry is less of a user than it was. A lot of water is taken for cooling—power generation. Most of the big fossil fuel power stations tend to be on major rivers, obviously, because they need water for cooling their systems. Much of that water goes back, of course—not so much of it is lost—but it has an ecological impact when it goes back. Those are the big sectors, I would say, but definitely not agriculture in the UK.

Q95 The Chairman: Just finally, going back to the earlier points, could you give us any guidance on a regulatory regime in Europe on water that combines a longer-term view and also drives the innovation that is going to be needed to bring about some of these changes—or perhaps one or two?

Professor Jenkins: No, I could not give you that example. None of my peers in other countries would say that they exist in a situation where they could provide a good example for what you are asking.

Q96 The Chairman: But if they were pressed to?

Professor Jenkins: It would be an interesting question to ask.

Q97 The Chairman: It is very difficult for us, because in a sense we can see that the evidence that we have is the five-year framework that we have been hearing about. We are trying to get beyond that. Anyway, if the answer comes to mind, we would be grateful.

Professor Jenkins: I could not give you one at the moment, sorry.

The Chairman: Thank you very much. It has been a stimulating session, and we are really grateful for your time. Thank you.

Ofwat—Written evidence

Key messages

1. There is an opportunity for future policy to be formulated and implemented to help ensure long-term sustainable supplies of water. This means taking into account the relative availability and value of water at different places and at different times.
2. By building flexibility into directives, the European Commission can help allow Member States to find the best value solutions for differing local water challenges. This would deliver much better and more tailored results than proposals that are target-driven, rather than outcomes-based, particularly for water efficiency.
3. The disproportionate cost provision, as defined within the Water Framework Directive (WFD), could be used more effectively within the WFD and extending it to other directives would be very beneficial in helping to ensure that water bills are affordable – something that is essential to underpin continued investment.
4. Meeting European Union (EU) freshwater policy requirements can have a carbon impact (for example, through increased treatment). Future policy and its implementation should take into account the emissions and their costs, as well as the need to adapt to a changing climate.
5. Better outcomes can be achieved by avoiding some of the barriers that have been present in previous EU directives, such as the ‘one-out all-out’ rule in defining good ecological status under the WFD.
6. Currently a large proportion of the costs of meeting environmental standards fall on water customers. In future these could be more fairly apportioned to reflect the ‘polluter pays principle’ (as under article 9 of the WFD). This could help keep water bills more affordable, underpinning legitimacy of the sectors with water customers, and ensuring long term stable income to fund investment.
7. There may be substantial benefits from more work to incentivise and reward farmers and landowners for delivering environmental goods, such as improving water quality, where this is in the interests of water customers, and to deter poor practices that reduce water quality.

Introduction

8. We welcome the House of Lords EU Agriculture, Fisheries and Environment Committee call for evidence into European Union (EU) freshwater policy and are pleased to have the opportunity to contribute to the inquiry.

9. Ofwat (the Water Services Regulation Authority) is the economic regulator of the water and sewerage sectors in England and Wales. The sectors comprise 22 regional and local monopoly companies and 5 new entrants (new appointments). Ofwat has been in existence since 1989.

10. Our main duties are to:

- protect the interests of consumers, wherever appropriate by promoting effective competition;
- ensure that water and sewerage companies properly carry out their functions; and
- ensure that the companies can finance their functions.

We are also required to contribute to the achievement of sustainable development, a requirement we meet by ensuring that the decisions we take now serve the interests of water customers today and in the future.

11. One of our regulatory tools to protect customers is to set limits on the prices that water companies can charge them. Complying with the requirements of EU-level freshwater legislation is a significant driver for company expenditure and – as a result – the bills that customers pay. Therefore, we have a strong interest in any European legislation that sets requirements for the water environment and impacts upon the obligations of water companies.

12. The system of water regulation that we have in the United Kingdom is unique within the EU. The sectors differ greatly compared with other EU Member States in a number of significant ways, including:

- the structure of our industry as privatised monopoly providers;
- the existence of an independent economic regulator;
- the comparatively high quality of our infrastructure and low, but increasing, levels of metering; and
- the fact that unlike most European countries, all investment in the sector is paid for exclusively through customers' bills without any tax payer subsidy.

Background

13. Since privatisation the UK has had a good track record of improvements to the water environment. When the companies were privatised in 1989 the UK was regularly referred to as the 'dirty man of Europe' in reference to polluted beaches and rivers, and neglected water infrastructure.

14. The stable regulatory regime put in place at privatisation meant that the water and sewerage companies have been able to invest more than £98 billion (in today's prices) to repair, maintain and upgrade infrastructure, improve services to consumers and make improvements to the environment. This has included £30 billion invested specifically to deliver environmental and water quality improvements.
15. This investment has led to substantial improvements in the quality of our water environment to the benefit of wildlife, landscape, leisure and amenity, albeit at a cost to water customers. Today:
- over 80% of bathing waters around England and Wales meet the highest EU guideline standards for water quality, compared with just 32% in 1990;
 - 99.96% of drinking water complies with tough EU standards;
 - over 70% of English and nearly 90% of Welsh rivers are rated 'good' or 'very good' for water quality. This is compared to about 50% of English and 80% of Welsh rivers in 1990;
 - 119 beaches across England and Wales meet the Blue Flag standard, compared with 12 when the scheme was launched in 1987;
 - 125 species of fish have been recorded in the River Thames, with record numbers of sea trout (there were none 50 years ago); and
 - leakage levels have fallen by about 35% since their peak in the mid-1990s.
16. As a result of water companies being required to meet further obligations, our price review in 2009 approved company plans to invest a further £5.3 billion (including work on the Thames Tideway and associated projects) by 2015 to improve the water environment. This is in addition to expenditure to maintain what has already been achieved.
17. Much of this investment is to comply with EU legislation such as the Water Framework Directive, as well as EU directives governing:
- urban wastewater treatment;
 - freshwater fish; and
 - bathing waters.

It also includes about £340 million for schemes to implement the EU Habitats Directive.

18. The water and sewerage sectors now face a new set of challenges which may require a different response to those of the past:

- a changing and unpredictable climate, with the anticipated increase in extreme weather events putting more stress on water resources, drainage systems and infrastructure;
- a need to reduce greenhouse gas emissions to help mitigate climate change;
- population growth which could lead to rising water use, particularly in south-east England where water is already scarce;
- rising consumer expectations (such as for more tailored, bespoke arrangements, as in other sectors) and lifestyle changes; and
- a growing risk of some people not being able to afford water bills.

19. In order to meet these challenges we are changing the way we regulate to:

- be more proportionate in our response to the risks to customers and the environment;
- incentivise innovative and efficient investment; and
- ensure companies focus on what their customers want, in order to deliver sustainable and affordable water and sewerage services.

20. The framework of EU freshwater policy could promote a flexible and innovative approach which further supports the sector to deliver for its customers.

Strategic objectives of EU freshwater policy

The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”.

- Would you agree that this should be the overarching goal of EU freshwater policy?
- What particular challenges should seek to be addressed by the policy?
- In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?

21. We support in principle the European Commission’s objective to ensure a “sustainable use of good quality water in the long term”. This should encompass environmental, social and economic sustainability. The aim of our sustainable water strategy is to achieve a water cycle in which we are able to meet our needs for water and sewerage services while enabling future generations to meet their own needs.

22. In addition to ensuring sustainable use we also believe that sustainability of supply is vital, particularly given the expected impacts of climate change, a growing population

and changes in lifestyle. By being mindful of the need to preserve sustainable supplies, we can ensure that customers and the environment have sufficient resources in the future, at a sustainable price.

23. Sustainable supplies means that we need to take into account the relative availability and value of water at different places and at different times. This is as opposed to promoting ‘one-size-fits-all’ solutions on water use or efficiency that may not represent good value in those areas where water is relatively plentiful.²⁶ By understanding the value of water we can promote more sustainable decisions by water users, including water and sewerage companies, businesses and households, and contribute towards the goal of sustainable use.
24. Sustainable use can be achieved through ensuring the most efficient balance of supply and demand. This is preferable to simply prioritising demand management without fully considering how supply can be made more efficient. The European Commission’s 2007 ‘Communication on Water Scarcity and Drought’²⁷ which is due to be developed within the EC’s forthcoming Blueprint for Water, promotes a focus on demand management, which could be a costly approach and miss the benefits of supply-side measures.
25. In our view, the best way to ensure this efficient balance of supply and demand is through the use of market mechanisms which facilitate the most efficient responses. They do this by exposing the true costs of activity and generating price signals to drive efficient choices about the abstraction and use of water. For example, we are considering using market tools to encourage greater trading of bulk water alongside financial incentives to discourage environmentally damaging abstraction. This will mean that companies with surplus supplies can sell water to help other companies meet their customers’ demands, thereby reducing that company’s need for new investment in supplies.
26. We suggest the Commission’s definition of ‘long term’ should cover periods greater than 20 years into the future. The changes due to climate change will become more distinct from those caused by natural variations over these longer timescales and better allow effective responses to be planned. The exact period of time should vary according to factors such as the operational life of particular assets. Taking a short term view may lead to responses that appear appropriate under current conditions, but turn out to be unsustainable, including for investors who have contributed to their development, over the entire life of the solution.

²⁶ Commission to the European Parliament and the Council - Addressing the challenge of water scarcity and droughts in the European Union (COM/2007/0414 final) July 2007 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0414:FIN:EN:PDF>)

²⁷ EC Communication on Water Scarcity and Drought 2007: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0414:FIN:EN:PDF>

How adaptable to emerging new challenges is the current policy framework likely to be?

Focus on outcomes

27. We believe that there is real scope for the European Commission to implement outcomes-based proposals, particularly to tackle water efficiency. We are, however, concerned that the current focus appears to be concentrated on setting targets.²⁸
28. The challenges that Member States face are likely to be very different across 27 different countries and will vary from region to region even within countries. Setting prescriptive targets risks losing the necessary flexibility to provide the best value solutions for these differing local water situations. Instead, policy should allow the space for national bodies – such as water companies and regulators – to find efficient and innovative solutions that meet the required outcomes and deliver value for money.
29. We are reviewing the way we regulate to ensure that, as far as possible, we incentivise and hold companies accountable for the delivery of outcomes, rather than specifying outputs and targets. This should provide scope for more innovation and tailored approaches, including alternatives to short-term, carbon-intensive solutions. An EU target-based approach would risk cutting across these solutions. For example, it is vital that the Commission’s proposals do not prevent the future development of market and regulatory mechanisms that reflect the availability and value of water in different places and at different times.
30. Revealing the value of water in this way should drive:
 - more sustainable investment choices by the water companies and others;
 - more sustainable decisions on the location of water-intensive industries;
 - more sustainable decisions by water users; and
 - the development of markets for eco-system services, involving local buyers and sellers of environmental goods.

Fair apportionment of costs

31. Moving forward, EU policy frameworks should be developed so as to be proportionate and allow effective apportionment of costs. Under the Water Framework Directive (WFD), for example, all watercourses in England and Wales must attain ‘good ecological status’, as defined in the Directive, by 2027 at the latest.

²⁸ European Commission - Webpage on ‘A Blueprint to safeguard Europe’s Waters’ (http://ec.europa.eu/environment/water/blueprint/index_en.htm)

This is likely to have major on-going cost implications for the water companies and their customers. In the first cycle of river basin management plans (RBMP1), the companies (and so their customers) are due to meet more than 82% of the costs²⁹.

32. The WFD contains within it a disproportionate cost provision in order to recognise that substantial investments are likely to be necessary to achieve its objectives. In practice this means that if reaching a particular objective would be disproportionately costly, the deadline may be extended or the objective relaxed. This allows objectives to be adapted to take account of the financial impact of meeting them, particularly on water customers, who pay for water company activities in this regard. The disproportionate cost provision could be used more effectively both within the WFD and extended to other directives.
33. In terms of deriving the most economic benefit from expenditure on the WFD, there is a strong argument for focusing first on those areas where there is evidence of solid customer support and willingness to pay for water quality improvements. These are often areas near major centres of population or areas where water quality is currently poor, as suggested by the National Ecosystem Assessment (<http://uknea.unep-wcmc.org/>).
34. Diffuse pollution, particularly from agriculture, remains one of the major causes of water quality problems in this country yet the contribution of the sectors responsible towards meeting the costs of the WFD has been negligible to date, compared to the burden placed upon water customers. This suggests that the 'polluter pays principle', as enshrined within the WFD, is not always being implemented in practice.
35. Customer legitimacy is crucial in England and Wales because all of the costs of the sector are met by customers through their bills – there is no cost borne by the taxpayer. So it is vital that customers are aware of and willing to pay the fair costs imposed on the sector.
36. If water customers' bills are driven up by EU legislation and this is widely seen as being unfair, it could lead to more customers resisting paying their water bill. This would increase bad debt in the sector and undermine the sectors' ability to invest in environmental improvements.

Resilience to climate change

37. Climate change is expected to have a significant and permanent impact on the water cycle. EU legislation – and its implementation – will need to be adaptable enough to

²⁹ Water Framework Directive river basin management plans for England and Wales, published December 2009 (online at <http://www.environment-agency.gov.uk/research/planning/33106.aspx>).

take into account both the impact on carbon emissions and the need to adapt to a changing climate to avoid unsustainable investment. Currently, the directives do not then make any allowance for adapting quality standards in order to reduce carbon emissions

38. The Urban Waste Water Treatment Directive, for example, requires compliance with fixed emission standards, irrespective of the environmental impact of wastewater discharges. This means that expensive, carbon-intensive investment in treatment may actually deliver little over-all environmental improvement.
39. If future legislation is outcome-based it will be sufficiently adaptable to ensure that Member States can find ways of meeting obligations in a manner that is sustainable economically, environmentally and socially. This would help avoid the risk of inefficient expenditure or increases in carbon emissions requiring subsequent abatement and the consequent impact on water customers' bills.

Future policy

In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

40. As the primary directive relating to water quality it would be most beneficial to make improvements to the Water Framework Directive. We believe the following changes would help ensure environmental improvements, whilst at the same time keeping costs for water customers as affordable as possible to ensure legitimacy and stability.
 - A fairer apportionment of costs, reflecting the 'polluter pays principle', so that a disproportionate burden does not fall on water customers.
 - A more flexible approach, including in application of environmental quality standards, to encourage innovation and allow for locally tailored cost-effective responses.
 - More effective and widespread use of the disproportionate cost provision (and its extension to other Directives).
 - Removal of inconsistencies and barriers to optimum outcomes and efficient implementation, such as the 'one-out all-out' rule in defining good ecological status. Under this rule an individual catchment can meet almost all of the criteria for good ecological status, but still be classed as failing. This can result in disproportionate and costly measures to counter such failures when more benefit could be derived from seeking a range of improvements elsewhere.

What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

41. One area where the EU can help develop efficient and sustainable responses to water scarcity is to agree frameworks for the labelling of water-using products, such as bathroom fixtures and fittings. This provides information that can help customers in their decision-making.

Other policy areas: agriculture and cohesion

How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

42. Diffuse pollution is the biggest single challenge to enhancing the country's water quality. The National Audit Office's report, 'Tackling diffuse water pollution in England'³⁰, identified that farming is one of the most significant causes. The report identified poor application of nitrates, phosphates and pesticides and poor storage of manure as of particular concern.
43. Treating water to remove diffuse pollution from agriculture costs taxpayers and water customers millions of pounds every year. It also requires energy-intensive processes which have significant implications for both embedded and operational carbon.
44. EU agricultural policy could do more to encourage, incentivise and reward farmers and landowners for delivering public environmental goods, such as water and soil quality and, conversely, to deter poor practices which cause water quality problems. One way to achieve this would be to make the Common Agricultural Policy and the WFD mutually supportive, by rewarding agricultural practices that help achieve WFD objectives.

October 2011

³⁰ National Audit Office Report: 'Tackling diffuse water pollution in England' published July 2010 (online at http://www.nao.org.uk/publications/1011/water_quality.aspx)

Ofwat—Oral evidence (QQ 167-182)

Evidence Session No. 6.

Heard in Public.

Questions 167 - 182

WEDNESDAY 25 JANUARY 2012

Members present

Lord Carter of Coles (Chairman)
The Earl of Arran
Baroness Byford
The Earl of Caithness
Lord Cameron of Dillington
Lord Giddens
Baroness Howarth of Breckland
Lord Lewis of Newnham
Baroness Parminter
Baroness Sharp of Guildford

Examination of Witnesses

Keith Mason, Senior Director of Finance and Networks, Ofwat, and **Noel Wheatley**, Director of Environmental Policy, Ofwat

Q167 The Chairman: Mr Mason, Mr Wheatley, welcome. Thank you very much for coming to see us. For the record, I have to repeat what I said to the other witnesses. I think you have in front of you a list of interests that have been declared by the Committee. This is a formal evidence-taking session of the Committee. Full shorthand notes will be taken. They will go on the public record in printed form and on the parliamentary website. We will send you a copy of the transcript and you will be able to revise it in terms of minor errors. The session is on the record. It is being webcast live and will be subsequently accessible via the parliamentary website.

If I may, I would like to take the first question. Really, it is about the cost of EU legislation. I think you say in evidence that complying with the requirements of EU-level freshwater legislation is a significant driver for company expenditure and, of course, as a result the bills that customers pay. I will take two questions first, if I may. How easy is it to distinguish between the costs of complying with EU legislation and the costs of complying with the requirements from the UK statute? Secondly, are there elements of the EU legislation that you think are unjustified? Perhaps you might give us an example of that; that would be helpful.

Keith Mason: To take your first question first, yes, it is reasonably easy for us to distinguish what elements of a company's programme derive from the EU and what elements are derived from other elements of either statutory or other drivers of costs in increasing the customers' bills. When we ask companies to prepare business plans, we ask them to prepare clearly what they are looking to do, what outputs they are looking to achieve, but also what are the drivers for those particular outputs, and some of those drivers may well be requirements of the European Union. We estimated around £3 billion in the capital programme the last time we set price limits in 2009. That covers the period 2010 to 2015. That is £3 billion out of a total investment programme of about £22 billion. We think that added about £13 to customers' bills over that five-year period.

In terms of your second question, to an extent I would like to echo what Tony Smith has recently said. It is that what we would like to see is probably more flexibility within EU directives in terms of taking account of local circumstances. Even in the UK, even in England and Wales, there is a very different picture as you go geographically. The north and Wales and to some extent the west have plenty of water; the south and the east probably have less water. To have a uniform system even across England and Wales, let alone across the whole of the EU, probably does not permit the degree of flexibility that we are looking for. That is not to say that the improvements are not needed, but I think it is that particular degree of flexibility that we are looking for. As an example—and this is one that has already been mentioned—the “one out, all out” rule in relation to the Water Framework Directive is one that we would probably like to see disappear.

The Chairman: We have heard that from a number of witnesses.

Q168 Earl of Caithness: Can I just ask you a quick question. What percentage of the £3 billion, which you cost as EU legislation, would have been implemented anyway by the UK if it had not been in the EU?

Keith Mason: That is quite difficult to estimate because obviously we have the EU directives. To an extent they are transposed into UK legislation in any event. What you are then saying is sort of “what if” speculation; if there was no European legislation what requirements would primarily the Environment Agency be looking for in terms of improvements? Noel, I do not know whether you have a further view on that?

Noel Wheatley: No, we can quote the figures, of £3 billion—

Baroness Howarth of Breckland: Chairman, can I just say that the witnesses should not trust the microphones. We are having difficulty hearing you. Behave as though there is no amplification.

Noel Wheatley: Yes. As Keith Mason said, we can quote a figure of £3 billion in the current investment period, and that is on top of around about £30 billion since privatisation. But to try to speculate as to what legislation would be in place nationally if we were not in the EU is not something that we—

Earl of Caithness: Certainly some of it?

Noel Wheatley: Yes. I think yes.

Q169 Lord Lewis of Newnham: Could I ask the question the other way round. Is there anything that you would not have done?

Noel Wheatley: Perhaps I can just answer that. Yes, I should make it clear that we are the economic regulator, so we do not set the standards—and Tony Smith said this for the Consumer Council for Water—and we are not water scientists. But what we look at in the Water Framework Directive are these questions around the fairness of who pays for what, these customer legitimacy points that were made earlier, the pace at which we are going, and whether the Directive is phrased in such a way that allows it to be implemented efficiently and in a risk-based way. We also can see that in some respects it is not coherent with some other EU measures. The EU wants to tackle climate change, quite rightly, but we reckon that the measures that are planned to be introduced in this investment period will probably add, in embedded carbon, the equivalent of nearly half a million cars to the road and about 45,000 additional cars for each year that the assets are in operation. We can see there are some tensions and trade-offs, and we do not want water companies to be having to make investments that are putting bills up when they are not necessary.

Q170 Baroness Howarth of Breckland: To come to those conclusions, although you are not scientists, you must have a view on what standards are sustainable. If the standards are sustainable, it would depend on the quality of the water being good enough and, therefore, presumably you have a view about what is good enough water in order to come to the answer about sustainability and flexibility.

Keith Mason: Again that does depend on the locale. We think that some standards, particularly drinking standards or drinking water quality probably have to be mandatory and at a relatively high level. In England and Wales the standard is extremely high. It is probably more difficult to have uniform standards in relation to river quality, river basin quality, and that does depend a lot on the particular circumstances of the particular location. I would agree that to achieve improvements you have to work to some sort of standards, but I think what we were looking for is more local flexibility to look at particular circumstances, and particularly pacing of improvements would be helpful.

To come to the Water Framework Directive, we think that was an improvement over previous EU directives in that it did include the possibility of economic analysis and economic instruments to be used and the idea of disproportionate cost, in a way that the previous EU directives in relation to water and the environment did not.

Noel Wheatley: Could I add on that point that, again echoing the evidence that was given earlier, if you go back to the 1980s we were seen as the dirty man of Europe. Our rivers were in very poor shape. A lot of very visible improvements have been made since then. We now have otters I think in every single English county. We have over 100 Blue Flag beaches. We have addressed some of the main problems. That is not to say there are not problems left to resolve, but they do not seem equivalent in scale and nature to those earlier problems.

Q171 Lord Giddens: Thanks very much for coming to talk to us. Quite rightly in my opinion, you stressed the importance of the long term, investment for the long term, going more than 20 years in the future. I just have two or three questions to ask you around that. How do you reconcile that with what appears to be a five-year investment policy, which one of the water companies told us in their view was quite constraining for longer-term planning? The second is something that exercises me a lot, having spent a lot of my academic career working on risk and uncertainty. How do we invest against a background of risk and uncertainty, produced not just by climate change but other social and economic changes? If you look at the very recent Environment Agency report, it suggests quite a huge lack of water in the future and talks about the introduction even of desalination plants and so forth.

In the case of climate change, we do not really know which of the scenarios are the most likely. There is quite a clear difficulty here. I do not know whether you support a “no-regrets” policy or something like that, or how you would prepare for investing against a background where the uncertainties are probably larger than they have been for any generations before, because we simply do not fully know until it is too late what the consequence of climate change will be. Thirdly, I do not want to pre-empt someone else’s question, but you seem to stress the importance of market mechanisms, but market mechanisms are not very good at dealing with the long term. To my mind, you almost always have to have a partnership between Government and markets if you are going to stimulate investment and if you are going to create long-term policies. How would you respond to that question? I think the limitations of a purely free-market system have been pretty well exposed over the last three or four years.

Keith Mason: I will take the first and third of those and hand over to Noel for the second, if I may. I will deal with the first one. I do not see it as a five-year investment programme. Certainly it is only five years in relation to price limits; we set price limits for five years. What is allowed within those five years is significant capital expenditure, and that expenditure builds assets that last for—well, if you think how old the mains and sewers are, it could be up to 100 years. A lot of the investments are in relation to assets that last at least 50, 60 years, if you think of the treatment works, water treatment works or sewerage treatment works. So I reject the accusation that it is for five years and so the investment programme is five years.

Lord Giddens: If I can interrupt, we had better put you in touch with the water company that said this to us.

Keith Mason: No, that is fine.

Lord Giddens: It is quite a substantial water company, which said it was a big limitation on future planning.

Keith Mason: I am very surprised because, again, City people who lend money do not lend money easily, and quite a lot of money is lent to water companies and a lot of that money is lent on terms of 20, 30 or 40 years. If they are lending on that sort of length of time, they genuinely will believe that there are assets there to support that lending. That is a feature and an important factor that the regulatory framework has allowed that lending to happen. With water companies, if everything was based simply on five-year terms, people would only lend to them on a five-year basis.

The water company may well be arguing that perhaps it does not have as great a certainty beyond the five-year period because price limits are only set for five years at a time, but even beyond that there are examples in both the United Utilities areas and in the Thames areas, where they have a programme or a particular set of investments that last, say, between five to 10 years. We have said, “We will allow what you are going to do in the first five years” and there is an understanding between us that the investment in the five to 10-year period will be allowed to go ahead as well. So they have committed the early part of investment, knowing they do not have the price limits beyond that to do it but knowing that we have said we will allow for it when we next set price limits.

Lord Giddens: I do not want to labour the point, but this is a point that was made to us. One example that was given, if I remember, was construction of dams, for instance, with a long-term investment cycle. We had better see if we can resolve this difference of views.

Q172 Lord Lewis of Newnham: Could I ask, why do you choose five years? You stipulated five years.

Keith Mason: Why did we choose five years? Since privatisation we have come back to this question a number of times. At the time of privatisation, price limits were set for 10 years with the idea that, once set, the companies could go away and get on with things and then we could come back 10 years later and do it all again.

What happened is there was a considerable amount of change within the period and what we were finding was we were having to come back every five years, because of the degree of change in the industry, and having to reset price limits because either what was required of companies or the costs of companies had got out of kilter with what they were allowed to charge. More often they were charging too much and reasonably often they were charging too little, but it did really depend.

So we consulted—at least twice to my knowledge—on whether we should have longer periods or shorter periods, but it came down to five years as probably about the right length of time, because that balances giving companies certainty about starting and continuing investment projects and, in a way, with customers planning their bills. It also allows for the changes within a period, and we can correct for those every five years as opposed to having to correct on a longer period. But it is something we are quite happy to come back to at any particular point in time.

Q173 Lord Giddens: I understand that the concern about the five-year period was expressed by Thames.

Keith Mason: It was Thames. As I said, we have an example of this—Deephams—and that is the exactly the investments that we have made. With regard to Thames, I do not know—

Lord Giddens: No, I do not want to labour the point.

Keith Mason: No, but with regards to something like a reservoir, that is very long-term planning and it is not simply for us to say whether that is “yes” or “no”. That is about long-term planning in terms of water resource management plans. Thames prepared a 25-year water resource management plan and when that was put to Defra, that reservoir—I think it was Abingdon it was planned for—was found not to be needed because the assumptions underlying the plans were perhaps not as good as they are supposed to be. I will hand over to Noel Wheatley for the second part of the question.

Noel Wheatley: I think the second part of the question was about risk and uncertainty. Yes, we absolutely agree that there are new challenges facing the industry or different challenges to those that it was facing before. Those include population growth and the impact of climate change, and there is a lot of uncertainty. So it seems to us that what we should be doing is making sure that we are removing any unnecessary barriers to action that are in place that may be necessary to remove to resolve those issues. For example, on trading between water companies, which was mentioned earlier, our research has estimated that interconnections between water companies could result in savings of around £1 billion over the next 20 to 30 years. Water industry research in the south-east of England—just in the south-east, which is obviously where the water scarcity problems are greatest—suggests that there could be savings of £0.5 billion. So removing barriers that may be there to water trading is something that we see as important.

We also see incentivising the right sort of action by companies as important. Perhaps I am straying into the next question here, but on the price signals, the market mechanisms, it seems odd to us that, for example, the cost of extracting water is more or less the same

across England and Wales, whether it is Kielder or in the south-east of England, despite the very different water scarcity issues. If you can take those into account, and also if you can move away from the system that we have at the moment where you can be licensed to take water that simply is not there, where water licences have no relation to the amount of water that is actually available—if you can address those sorts of issues, which the water White Paper does pick up, and we are very pleased to see that long-term abstraction reform—you can then start to affect the cost-benefit analysis and the metrics that the companies undertake to see what is the most worthwhile investment option. Addressing those two issues might make demand management more attractive in some instances. In others it might say that reservoir long-term investment is the right thing to do.

Keith Mason: I will just make a couple of points in relation to market mechanisms. We are encouraging market mechanisms and competition where it is most appropriate. To the extent that it is not appropriate or in areas where it is best that services are provided by a monopoly-type provider, we think that monopoly-type providers should remain. Water is probably one of the only areas where there is extremely little—well, I would say absolutely no—competition, and we think market mechanisms can help in a number of ways. In the earlier session, Tony Smith gave ideas about how business customers are not necessarily happy with the service they get from companies, and so at the retail end you can get that established choice. We think more importantly—and to echo a little bit where Noel was leading on to—upstream in the value chain for water, particularly in water trading, there may be a role for some market mechanisms.

I think what we are looking for is better signals about the value of water. At the moment it is an extremely scarce resource, an extremely scarce commodity, but there is no real value placed on water. The raw material is not valued. It is not valued in prices. The only value put on it is an administrative value, and administrative value is the cost of the Environment Agency in administering that system. As Noel Wheatley has just said, it gives you some peculiar outcomes, like Kielder, which is relatively new and was built in the 1960s. The Environment Agency is trying to recover that money, but there are huge amounts of water in Northumbria yet they pay a much higher abstraction charge than do Thames Water or Southern Water, where water is much scarcer. It is that sort of market mechanism that we are trying to encourage. It is about the economic signals and incentives where water is scarcer and people should pay more for it.

Q174 Earl of Arran: In his question Lord Giddens mentioned desalination and so on, about which we have heard very little evidence from our witnesses. What is your view on desalination? I know it is expensive, but where are we on that?

Keith Mason: It is expensive both in terms of its cost—in terms of cost per metre cubed of water resource—and in terms of its carbon use because it is very energy-intensive. It is used very little in England and Wales. The only recent example is the one that is locally in the Thames, so I do not think we will be encouraging anything along those lines. But again, to come back to the water resource and to come back to long-term planning, it is about having long-term plans and it is about identifying the least-cost set of solutions to do it. It may be that in extremis desalination has a part to play, but it would be to an extent in extremis because of: one, its high cost; and two, the high carbon costs.

Earl of Arran: It is a resource of last resort really, is it?

Keith Mason: You could see it in that way, yes, and to be fair I think that is how Thames uses it.

The Chairman: Perhaps I could move the discussion on, because we have about another 15 minutes.

Q175 Baroness Howarth of Breckland: You gave a comprehensive, complex answer about financial and economic mechanisms. But if East Anglia runs out of water, which with climate change is quite possible—last summer was a good example of East Anglia’s problems—and to the north, a few miles from Northumberland, there is a massive amount of water, what role are you going to have in ensuring that the market mechanisms are not only good economically but socially viable? As a regulator, do you have any strength to ensure that those kinds of movements happen? Going back to what Lord Giddens was saying, the water companies gave us the impression that it was just inconceivable because of the financial implications.

Keith Mason: Our strategies are about sustainable water, and as you know you can look at that as having three pillars. You can have the economic, the social and the environmental, and we try to balance all three. We are the economic regulator, so our remit talks in terms of the economics. But it is about having the long-term balance between all of those particular legs. I talked in a previous answer about economic instruments.

One of the things that can be used is something called a bulk supply, where one water company transfers water to another, generally under a long-term arrangement. At the moment there is no real incentive for a water company either to accept a bulk supply or to give a bulk supply. So, certainly going forward, what we are looking to do is to provide that incentive, such that there is a financial gain for the exporter and there could be a financial reward for the importer. What we have seen to date is that companies within their particular regions rely on their own resources and do not really want to take account, when they are balancing supply and demand, of what could probably be taken from neighbouring suppliers, because the cost of transporting water long distances is probably not very economic. We certainly do not have the infrastructure at the moment. There is not a national grid in water in the way there is in electricity and gas, but certainly between neighbouring regions that could be possible and that is the sort of thing that we want to encourage.

Q176 Baroness Howarth of Breckland: The water scarcity problem, which this is all part of, links also to the way in which we manage water in this country. We have talked a lot about the difference between other European countries, who manage it in a social sense, and this country, where we have privatised. I do not have a view about the value of either; it is the outcome that is important. Do you think that there is an issue about the governance? I just wonder what level of governance you think is important to ensure that the issue you have just raised in your last answer, about the water companies not necessarily looking at this in the long term, can actually be resolved?

Keith Mason: I will give the first answer and then ask Noel to come in. Water companies are statutorily required to supply water, and then the water and sewerage companies are—

Baroness Howarth of Breckland: And make a profit.

Keith Mason: And make a profit. They are also statutorily required to take away effluent and they must plan for these things for the long term. All we are saying, coming back to my point about valuing water, is that there are not sufficient economic signals—and this is not on the part of the water companies themselves—to say what is the true value of water such that it may be worth moving it from here to there, and that is what we are seeking to encourage.

The last thing that water companies want to do is to run out of water. So they must plan and they must have the proper resources to do it. We are here to prevent, because it is a monopoly, prices from getting too high to do that, and they only make a reasonable profit. But their first concern is about supplying good-quality water to all their customers.

Noel Wheatley: Just to add one practical example water companies are required to have 25-year water resource management plans. We are working with the Environment Agency, at the moment, to make sure that the guidelines for the next set of plans require companies to provide evidence that they have properly examined water trading options. That was not there before and I think you can expect to see it in the next guidance.

Q177 Baroness Howarth of Breckland: What regulatory powers would be in the Water Bill to be published early in the next parliamentary session implementing the water White Paper to ensure the sustainability of water resources? What do you want to see there?

Noel Wheatley: The main issue on environmental sustainability and ensuring the availability of water, I think, is the long-term plan for abstraction reform, which Defra have embarked on now. We have been working with them and with the Environment Agency; for example, we had a document called the *Case for Change* that set out these problems around water scarcity, which was published at the same time as the water White Paper, and that was a joint paper between us and the Environment Agency. So I am not aware that in the first instance that programme requires legislation. At the moment there is a lot of stakeholder engagement. I think they are talking about a plan that sees a new abstraction system probably in the middle of the next decade, which is a bit longer than I am sure all of us would have liked, but clearly there are a lot of abstractors who need to be consulted on that.

Keith Mason: I do not think that it is so much primary legislation that is needed as the regulatory framework, and the two are not necessarily similar. I think it is encouragement, which the water White Paper provides, that the use of market mechanisms and water trading, and the reform of the abstraction regime, will be underpinned, if necessary, by legislation. If we can get there by the regulatory framework and working with the Environment Agency, as Noel said, that will be important. Trying to frame stuff in legislation can, down the line, get you into more difficulties than you are trying to cure.

Q178 Baroness Howarth of Breckland: Very briefly, in terms of dealing with water scarcity, what is Ofwat's view of compulsory water metering?

Keith Mason: We think that metering is probably the fairest way to charge for water. In terms of compulsion, we have seen areas where they have taken powers to compulsorily meter and they by and large—I say “by and large”, but I think universally—are the ones where water is scarce. So Southern Water, Folkestone Water and South East Water—all along the south coast—are the areas where they have used compulsory water metering.

What we are looking to see—and Southern Water and South East Water are doing this—is that where that happens they are taking into account their customers' social circumstances. If people find difficulty in moving on to a meter, whether it is for medical reasons, whether they are vulnerable in another way or whether it is just due to a low income, the company should take that into account and propose suitable tariffs, so that the move to a metered supply is less of a cliff edge for them and they are moved slowly, and there are proper support mechanisms for those particular sets of customers.

So it is certainly in the right areas, particularly where there is water scarcity. I do not particularly think that we should say it is compulsion where the case is not economic, but certainly metering is the fairest way of charging for water.

Q179 Lord Lewis of Newnham: I believe you support proposals for spending about £60 million for water companies to look at catchment management schemes and investigate things like diffuse pollution. I think we have been concentrating at the moment on farmland, but I would be interested to know how you view the problems of dealing with urban pollution. We would like to know what you have learnt from these studies and whether you intend to continue this support. One of the things I personally find surprising is that you are paying farmers for an ecosystem service ensuring that drainage water is free from pollution. How far should this approach go? The use of the polluter pays principle, which we have discussed previously, would indicate to me, at least, that the farmers are responsible for this and in some way or another you seem to be recompensing for this removal.

Keith Mason: I will answer first and then hand over to Noel. Yes, we allowed them an asset price and it is £60 million, as you have said, for over 100 schemes in relation mostly to catchment management. What we looked at particularly there was: what is the cost and benefit to customers of doing that? I think we agree, very strongly, that the polluter pays principle is the right way to go and that tackling diffuse pollution is now probably the most important area we ought to deal with. This is probably a more difficult area than dealing with point pollution, but there are potential limits. It is relatively early days, but Noel is certainly more involved in that.

Noel Wheatley: Yes, by supporting over 100 catchment management schemes and investigations at the last price review, we are allowing the water companies to build an evidence base as to what works, because we can see that the potential in this area—stopping pollution at source, avoiding carbon-intensive additional treatment and getting lower bills for customers as a result—seems like a win all round. Some evidence is coming forward, perhaps not as quickly as we would have thought, but by nature some of these schemes are long-term. We can see that, particularly on a small scale, some water companies have identified particular substances used on particular fields and have negotiated with the landowners to change application or land management practices and have been able to demonstrate real, measurable improvements as a result.

What we would not be at all happy to see would be water companies entering into those negotiations with landowners to comply with their existing statutory obligations, or even perhaps with expected good practice, because obviously a lot of farmers and landowners will be doing that already. It is where there is something additional that it is in the interests both of the water companies—to stop perhaps a particular pesticide getting into the water supply—and of the farmer, who may have an interest in an enhanced wash-down area for his pesticide sprayers or something like that. So in specific circumstances we can see that there would be an interest for the water company and its customers in coming to that sort of agreement, but they need to provide the evidence to us to support that sort of scheme in terms of projected benefits.

You mentioned non-agricultural diffuse pollution, which is of course an important source of pollution. I think the Environment Agency's tables showing the causes of failures to achieve Water Framework Directive standards show that agricultural diffuse pollution is a particular problem, followed pretty closely by non-agricultural. I think that Defra announced in the natural environment White Paper that it was going to put an action plan in place to address non-agricultural, but certainly highways run-off, for example, is a difficult area.

So yes, we support the polluter pays principle. Yes, payments to farmers whether it is agri-environment schemes or by water companies are not really polluter pays principle, but we can see here that diffuse pollution is difficult to address, almost by definition, under the polluter pays principle. So if this results in a better deal for customers, we are reasonably happy to support it.

Q180 Lord Lewis of Newnham: How are you dealing with what I am calling urban pollution, which is, as you say, highways and things of this particular nature?

Noel Wheatley: Yes, it is a difficult area. We have not seen many innovative schemes. I am not an expert in this area. I do not know what water companies could be expected to be doing in terms of who they would be talking to to address these. I think we are looking to Defra to advance an action plan, which would clearly involve the highway authorities, local authorities, people who spray golf courses and so on, in addressing that issue. I do not think any of the water company catchment management schemes, which came forward from water companies' funding at the last price review, specifically addressed urban or non-agricultural diffuse pollution. It is a problem.

Q181 Lord Lewis of Newnham: Can I just ask a supplementary question? I believe that the Environment Agency, who are responsible for a wide range of monitoring such as sewerage and presumably things like the diffuse pollution, are no longer responsible for carrying out the monitoring but will be passing this over to the water companies. I believe this has either occurred or is about to occur in the immediate future. Have you any response whatever to the effectiveness of this? I mean, in a sense, of course, that to ask the Agency to relinquish this particular operation and pass it over—with no disrespect—to the people who may be the polluters is a rather peculiar situation to find ourselves in. Why are we in this situation?

Noel Wheatley: I understand. You are absolutely right that the agency is moving towards—I think they call it—self-monitoring. I would not wish to comment on how that might turn out. But I can see that, for example, when water companies have worked with particular farmers and actually demonstrated the amount of pesticide or fertiliser or even soil that runs off their land, they have had the farmers involved with measuring as well so they trust the results more, and that has actually had quite an impact on those particular farmers, who can see that materials that they have paid for or rely on ultimately for their livelihood are being washed away. So it may be that if it shows water companies more clearly the impacts of their operations as well—and we are not trying to claim that there is no impact—and it shows that that is still a sizeable contributor to the problems in some waterways, then it may work out well.

Keith Mason: I do not think this is the case in the most serious cases of pollution. The Environment Agency are still retaining their powers to prosecute but I think that, as Noel said, the water companies in a way are themselves best placed to know what is going on in terms of the lower category cases of pollution, and it is not dissimilar to the monitoring of drinking water quality. I do not think it removes the Environment Agency; they can do spot tests. I do not think they are going to do dawn raids or anything of that sort of description, but they retain their powers to check that the processes that the water companies are using to collect this data remain properly assured and properly controlled.

Q182 Baroness Parminter: I would like to ask a question on economic instruments. You told us that you are a big believer in water trading as a mechanism to give better signals about the value of water. Clearly, from what Defra have said in the water White Paper, they

seem to agree with you—and indeed in the natural environment White Paper. What do you think the European Commission’s view is about this approach, in terms of valuing water via economic instruments? Do you think they share that approach as one that could deliver improvements in the system?

Keith Mason: I think it comes back to having good information, good data and proper signals about where something is scarce, and what you need to do about it when it is scarce. Economic signals, generally price, are a good way of doing that, so that more people will think, “Perhaps I could supply here where the price is higher”. We do not think that water trading is going to happen overnight and we think that if it was introduced it would be certainly at the margins. So the water companies’ current way of trading would continue for quite a long while. That is why we are trying a number of approaches, particularly the bulk supply parts that I talked about in answer to an earlier question. Better trading between the companies of their existing supplies could also help.

What Tony referred to as “the twin track” is where we think we ought to go—working both on the supply side, which is what water trading is about, but also on the demand side in encouraging metering and encouraging water efficiency. Going along both tracks ought to end up with a better result than perhaps just concentrating on the one end of it, whether that is on the supply end or whether that is on the demand end. But it is not just simply water trading in that sense; the other things that we are trying and we put forward in our framework paper involve attaching a scarcity charge. This will be a notional scarcity charge but it will apply to abstractions that are less vulnerable. So if a company has a set of solutions—at the moment it is relatively cheap to abstract from an area that is very vulnerable environmentally—the way that incentive might work is to say, “Well, if we add a scarcity charge on top of the actual charge, then it does not become your first choice in a least-cost solution but moves further down the queue”. That encourages companies to take into account the environmental costs of sustainable abstractions. What we would not want to do is to pass that cost on to consumers immediately, because that would give the problem and the point about affordability of bills and legitimacy of the regime. The main importance is that this gives the signal to companies that they should not just always choose what on the face of it appears to be the least-cost piece of water.

Noel Wheatley: I should add, as a result of what Keith just described, that we are little concerned that the EU has a tendency to come forward with—Tony mentioned the phrase—one-size-fits-all-type approaches. It has talked about a water hierarchy, for example, whereby demand-side measures would always have to be examined first and only when all possibilities had been ruled out would you look at supply-side changes. To us it is more a question of which is the most cost-beneficial and cost-effective, and so that worries us a little. Similarly, having targets for water efficiency right across Europe from the Mediterranean and south-east England, which are water scarce, through to Finland, which is rich in water resources, does not seem to be particularly conducive to the most economic approaches.

The Chairman: Excellent. Thank you both very much.

Scottish Agricultural College (SAC)—Written evidence

Introduction

Strategic objectives of EU freshwater policy

1. *The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?*

The aim as quoted above does not read well as it appears to put the emphasis on sustainably using those water resources which are already of good quality, instead of striving for good water quality as a matter of course, and additionally ensuring that that water resource is used sustainably. However, the aim as quoted on the Commission’s website (http://ec.europa.eu/environment/water/blueprint/index_en.htm) does bring in these aspects, i.e. “[The Blueprint to Safeguard Europe’s Water] will aim to ensure good quality water in sufficient quantities for all legitimate uses”.

We would agree that the aim is relevant to be the overarching goal of EU freshwater policy. Nevertheless, that aim will be challenging to achieve, given that the policy will need to address issues affecting both water quantity and water quality, and reflect the fact that the issues around water management not only differ markedly from one area of Europe to another, but can also differ markedly between different regions of any one Member State.

We suggest that the *European Environment: State and Outlook 2010* reports (<http://www.eea.europa.eu/soer/europe/water-resources-quantity-and-flows> and <http://www.eea.europa.eu/soer/europe/freshwater-quality>) have clearly identified the main challenges which need to be addressed by the policy, in particular: the need for an integrated approach to water resource management; the need to strike a balance between the benefits of some policies (e.g. renewable energy) and the impacts on the ecological status of water bodies, adjacent land ecosystems and wetlands; the need for policies to reduce the demand for water and encourage demand management; the need to focus much more on natural flood management instead of on hard-engineered defence systems and to provide adequate space to slow and store water flows; the need to implement strong, cost-effective and timely measures addressing all pollutant sources; and the need to ensure that water resources are used in an efficient manner.

In addition, the policy must also recognise and seek to address the fact that there is a growing polarisation between a minority of Member States who consistently seek to implement current standards relating to water quality (or other environmental concerns) in a rigorous way and those Member States that prefer to apply these with a ‘light touch’. Although it is perfectly acceptable, and indeed necessary, for water policy to be implemented differently in different Member States, there is, however, a need for the new policy to ensure that implementation occurs in an appropriate way across all Member States. To this end, there will be a need for the new policy to set the context by setting out what it would

expect to be the minimum acceptable approach and standards implemented at Member State level.

The current focus on 2020 and 2050 are sufficiently 'long term' for now. However, we suggest that rather than remaining static around those dates, the Commission's long term should always be 40-50 years ahead of the present.

2. How adaptable to emerging new challenges is the current policy framework likely to be?

The policy framework needs to take into account challenges that we are already aware of (e.g. climate change, increasing global food demand, and a likely expansion of the cultivation of bioenergy crops) and be adaptable enough to cope with new, as yet unknown, challenges that will emerge over the coming decades. The impact of all these challenges will differ between different regions of Europe and within any one Member State. We suggest that the new policy will be adaptable to emerging challenges, provided that it: takes on board the need to take an ecosystem approach when assessing likely impact and considering how best to address any challenges; and ensures that implementation of actions to address these challenges can occur at the appropriate scale on the ground (which in many cases will be at the level of the water catchment). Building the ecosystem approach into the policy framework from the start should allow the policy sufficient flexibility to adapt to any new challenges and the scale at which they need to be addressed.

Adding value

3. How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

As indicated in our response to questions 1 and 2, the main way that the EU can add value is through ensuring that a consistent approach is taken across all EU Member States and through setting minimum acceptable standards which all Member States need to adhere to. The implementation of the actions needed to address the policy concerns do, however, need to be addressed at the Member State and regional level.

Future policy

4. In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

See paragraph 2 in our response to question 1 and our response to question 2.

5. What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

As *European Environment: State and Outlook 2010* makes clear, Europe cannot endlessly increase its water supply. Rather, it must reduce demand and policies are needed to encourage demand management. Demand measures could include: the use of economic

instruments; water loss controls; water-reuse and recycling; increased efficiency in domestic, agricultural and industrial water use; and water-saving campaigns supported by public education programmes.

Research and innovation

6. *How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?*

As already indicated, there is a need for a more integrated approach to water resource management and policy development. The Commission has already indicated (http://ec.europa.eu/environment/water/blueprint/ia_en.htm) that *The Impact Assessment of the Blueprint to safeguard Europe's Waters* will rely on an integrated analysis framework based on three main elements: the setting up of water and ecosystem accounts, at river basin level, enabling a precise quantification of pressures on water resources and of sectoral/geographical variations; an integrated modelling framework, linking land-use, hydrological and resource efficiency models and enabling the proper quantitative assessment of the scenarios and the policy options; knowledge mapping, identifying the key relations between driving forces, pressures, states, impacts and policy responses, and providing access to reports, research projects and case studies. Such mapping will also enable the identification of knowledge gaps.

Hence the future research programme would support freshwater policy and innovation in freshwater management effectively if it helped inform these three elements, pulled together already existing knowledge from the plethora of existing studies of relevance, and was built on the basis of co-ordinated work between DG Environment, other European Commission services, the European Environmental Agency and Member States. At the level of an individual Member State, we suggest that an approach akin to that currently taken in the Scottish Government's 2011-2016 research programme (<http://scotland.gov.uk/Topics/Research/About/EBAR/StrategicResearch/future-research-strategy>) would be an useful model to follow. Here, a particular focus is put on filling key gaps in scientific understanding through making water and renewable energy one of eight strategic research themes, while a Centre for Expertise on Water has been established to act as a way to develop innovative approaches to policy development through coordinated actions. Establishing a similar framework at other Member State level would provide a good base and context from which to jointly contribute to the needs of the wider European research programme.

Other policy areas: agriculture and cohesion

7. *How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?*

All need to be included in an integrated approach to water resource management. The Common Agricultural Policy could be used to help increase environmental standards across the EU27 (e.g. through a more rigorous and consistent approach to cross compliance standards relating to water resource maintenance and protection – there is move to require buffer strips next to watercourses and water bodies but currently no consistent minimum

width of these has been indicated) and, through appropriate funding and targeting of agri-environment measures, could help provide appropriate actions at the most appropriate scale on the ground.

October 2011

Scottish Environment Protection Agency (SEPA)—Written evidence

Strategic objectives of EU freshwater policy

- 1. The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?***

The overarching goal of ensuring “a sustainable use of good water quality in the long term” would seem a sensible aim. The challenges are to be able to manage the freshwater environment in a way that it is in the best interests of the member states’ citizens. In so doing Member States must be able to balance the often conflicting requirements between different sectors with different social and economic needs. The effects of climate change, and particularly the rate of change, are also likely to exacerbate existing pressures which will result in Member States facing difficult decisions on how best to provide for their citizens in an economic environment of diminishing resource. Political buy-in will always be an issue particularly where the solutions require long term investment beyond the lifetime of elected governments.

SEPA considers that aligning timescales between directives and policy would provide the most efficient method of delivering policy objectives and would therefore recommend that the ‘long term’ should link into the River Basin Management Plan objective of 2027.

- 2. How adaptable to emerging new challenges is the current policy framework likely to be?***

Where the current Directives are environmental outcome led and risk based, such as the Water Framework Directive, we consider that it is sufficient in dealing with emerging challenges. More prescriptive directives, such as Urban Waste Water Treatment Directive while delivering improvements in water quality, are unlikely to be as adaptable. For example the cost of providing and maintaining an asset to meet a Directive requirements that provides little or no environmental benefit may not provide the best value for money for Member States and is unlikely to receive political support.

Adding value

- 1. How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?***

SEPA does not feel it is best placed to consider this question.

Future policy

- 1. In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?***

A continuing move away from prescriptive Directives to more proportional risk-based and environmental-outcome led Directives is considered to be the most efficient system of delivering improvements. The Water Framework Directive is a good example of the latter where Member States have to consider socio-economic impacts of activities that may significantly impact the water environment and provides flexibility in timescales to achieve objectives where it is technically infeasible or disproportionately costly.

Several Directives have different timescales and reporting periods which if aligned would also assist in providing a more efficient delivery mechanism.

Lastly, focusing on source control of pollutants, such as providing clear guidance, labelling and where necessary banning certain products would prevent costly treatment systems.

- 2. What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?***

Promoting awareness, assessment and labelling of products on their water efficiency would always be helpful and a system similar to the use of labelling of buildings to class their Energy Efficiency for water efficiency may be beneficial. However, SEPA believes we currently have the potential at Member States level to promote efficiency, assessment and labelling and therefore there is little requirement for a European Directives to address this.

Research and innovation

- 1. How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?***

The use of innovative technology and practices that are both cost-effective and water efficient are likely to become more important as water users face greater difficulties in securing water, particularly as other resource costs are likely to increase. Likewise products and technology which would assist in providing a sustainable solution to flood risk will also continue to be required.

Greater knowledge and understanding of our environment will lead to better informed decision making by Member States therefore research into cost effective monitoring techniques would be extremely useful. Likewise, the use of environmental standards that directly link to protecting human health and freshwater ecology.

Other policy areas: agriculture and cohesion

1. How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

Two areas that SEPA considers could provide significant benefit if they were closer aligned to freshwater policy are source control and integration of land use policies.

Source control, such as the removal of certain pollutants at the production stage which then consequently find their way into the water cycle, could provide an extremely effective method of preventing pollution which would remove the need for costly treatment systems. Likewise, a holistic approach to water and land management could help align shared objectives and achieve multiple benefits. Given that a lot of the potential to manage the land to achieve improvement in the freshwater environment is within the agricultural sector, aligning the Common Agricultural Policy (CAP) to freshwater policy could help realise these multiple benefits.

CAP should therefore include a focus on actions to tackle issues such as diffuse pollution, flood resilience, soil protection, climate change mitigation, and biodiversity as well as supporting agricultural / forestry sectors for economic / social benefits. The CAP budget needs to be adequate to support the range of functions that land managers are expected to deliver, including environmental targets and food security. SEPA also recommends that the contribution of Pillar I to the provision of public goods is improved through the strengthening of Good Agricultural and Environmental Condition (GAEC) and cross compliance requirements. This includes increasing Water Framework Directive cross compliance requirements. CAP payments should include supporting the delivery of environmental services through the use of payments, capital investments, and support for knowledge exchange to help deliver the WFD environmental targets.

5 September 2011

Scottish Land and Estates—Written evidence

I. Strategic objectives of EU freshwater policy

1.1 The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?

- 1.1.1 Scottish Land & Estates believes that the overarching goal of EU freshwater policy is wider than to ensure a “sustainable use of good quality water in the long term”. Freshwater policies should not solely be in place to ensure “sustainable use” of water but also to ensure that the water environment is fit to support a diverse range of aquatic species. These species form the basis of a healthy water environment and the overarching goal identified by the EU freshwater policy fails to take their importance into consideration.
- 1.1.2 Furthermore, “good quality water” should not be the only focus of EU freshwater policy but rather it should aim to ensure that we utilise water resources in such a way that they do not become depleted in the long term. For example, when good quality water has been used for one purpose it may decrease in quality but would still be acceptable for use in industrial processes.
- 1.1.3 It is important that EU freshwater policy is capable of being flexible and adaptable to new challenges, such as changes in climate. Therefore, although an overarching “long term” approach may be beneficial, it is essential that policies can be responsive if circumstances change quickly. Also, “long term” will have different meanings depending on what objective is trying to be achieved as some issues will require a longer time period to be effectively dealt with than others.

1.2 How adaptable to emerging new challenges is the current policy framework likely to be?

- 1.2.1 Scottish Land & Estates notes the wide range of pieces of legislation which impact on the freshwater environment including the Water Framework Directive, the Floods Directive and the Bathing Waters Directive. Given the sheer amount of legislation in place, it is difficult to see how the current policy framework could be easily adapted to deal with new challenges in relatively short timescales. Scottish Land & Estates believes that in light of climate change predictions it is imperative that policies can adapt quickly and effectively. Therefore, policies relating to freshwater need to be joined up and consistent.

2. Adding value

2.1 How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

- 2.1.1 It is essential that Member States have access to sufficient resources in order to achieve the objectives of EU policies. Adequate funding must be made available for the implementation of policies and sufficient guidance must also be issued. If funding and guidance are not made available policies will ultimately fail.
- 2.1.2 Scottish Land & Estates believes that Member States should deal with the finer details of policy implementation as they will each have different challenges to address and therefore a one size fits all approach is inappropriate.

3. Future policy

3.1 In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

- 3.1.1 Scottish Land & Estates considers that EU freshwater policy needs to be more joined up to ensure that time and resources are used efficiently. For example, work conducted under the Water Framework Directive should link directly into work conducted under the Floods Directive where appropriate to avoid repetition.
- 3.1.2 Furthermore, the organisation believes that future policy should be flexible in its approach in order to accommodate unforeseen circumstances.

3.2 What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

- 3.2.1 Scottish Land & Estates advises against adding more labelling to products as it would be at great expense and it would be unlikely to have a significant impact on the choice of consumers. It would be better to educate people using other media such as television and radio about the importance of not wasting water. This would reach a larger number of people without putting the responsibility onto the producer to calculate the water footprint of products, which would increase their costs and require a significant amount of time.

4. Research and innovation

4.1 How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?

- 4.1.1 It is necessary to firstly establish what are most likely to be the future challenges to the freshwater environment in the EU and then focus research in these areas. The findings from this research can then be fed directly into future policy proposals.
- 4.1.2 In addition, it is necessary for the EU to review existing policies, identify those which are no longer relevant and replace these with more up to date thinking.

5. Other policy areas: agriculture and cohesion

5.1 How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

Scottish Land and Estates—Written evidence

- 5.1.1 It is essential that other EU policy areas work effectively together to achieve sustainable freshwater management. Contradictory policies result in frustration on the part of land managers and do not deliver the desired outcomes in terms of high quality freshwater. Land managers require clear signals about what is acceptable and what is not in relation to the water environment. Policies must be clear and joined up in order for them to be successfully implemented by land managers.

5 September 2011

Severn Trent Water (STW)—Written evidence

Context

1. Severn Trent Water (STW) welcomes the opportunity to submit evidence to this inquiry. We are the second largest water company in England and Wales, providing drinking water to 7.4 million people and waste services to 8.5 million people across the Midlands and mid-Wales.
2. Around 80% of UK legislation relating to the water industry is transposed from EU Directives.³¹ These Directives have been, and continue to be, a significant driver of companies' investment programmes and in turn, our customers' bills and our carbon emissions.
3. **Our priority is to ensure that we make our contribution to meeting the requirements of these Directives but in a way, and at a pace, that is affordable for our customers and that minimises the impact on our carbon emissions.**
4. The most significant new Directive in the last decade is the Water Framework Directive (WFD). Our evidence to the inquiry focuses on the WFD in particular and we respond to the questions raised in the call for evidence which are most pertinent to it.
5. We welcome the EU's current review of its freshwater policy and have participated in Deloitte's recent preliminary study as part of the 'fitness check'.

Summary

6. Meeting the requirements of EU Directives relating to the water industry is already expensive. Despite a £4.5bn water industry environmental programme in the five years to 2015 there will be little improvement in the number of water bodies achieving 'good ecological status' (GES) under the requirements of the WFD – currently nearly 75% are assessed as not reaching GES which will only be reduced to 70% by 2015.
7. Further significant costs are likely to be incurred in the future. We conservatively forecast that by 2030 the English and Welsh water industry will need to deliver an environmental programme of £17bn (c.£8bn of which relates to the WFD). The impact of this investment on our customers is a 19% real increase in bills³².
8. The impact of the investment required to meet the WFD on the UK economy more generally could be significant. Defra has estimated that the total cost of implementing the WFD could be between £30bn and £100bn in England and Wales by 2027.³³ If a

³¹ www.water.org.uk/home/policy/positions/european-directives

³² Severn Trent Water; Changing Course (April 2010); www.stwater.co.uk/changingcourse

³³ *Delivering sustainable water* – Ofwat's strategy, March 2010.

10% reduction in these costs could be achieved, it would have a NPV benefit of £3bn-10bn, the equivalent of a £120 - £400 benefit to each household.³⁴

9. There is also an impact on carbon emissions. In our current five year investment period, many of the reductions in green house gas emissions we will achieve through greater efficiency and renewable energy generation will be offset by the energy used in the increased sewage treatment required to meet quality standards. We forecast that by 2030, despite Government targets for carbon reductions, water sector carbon emissions could increase by 12% from 2010 levels.
10. STW is exploring innovative approaches to mitigate the carbon impact. We are undertaking a joint investigative project with our regional Environment Agency office to explore variations to treatment processes and consent regulation which could help limit the carbon impact of meeting the WFD. However, more needs to be done at a policy level to facilitate substantive change, including the linking of water quality legislation and regulation with carbon and climate change legislation and policy at a European level.
11. We do not wish to compromise the achievement of the environmental outcomes required by EU Directives, but believe that:
 - the timescales in which they must be achieved;
 - the approach water companies take to meeting them; and
 - the role of other parties who can also contribute to their achievement,

should be balanced in such a way that we can minimise the impact on our carbon emissions and the costs incurred by our customers.

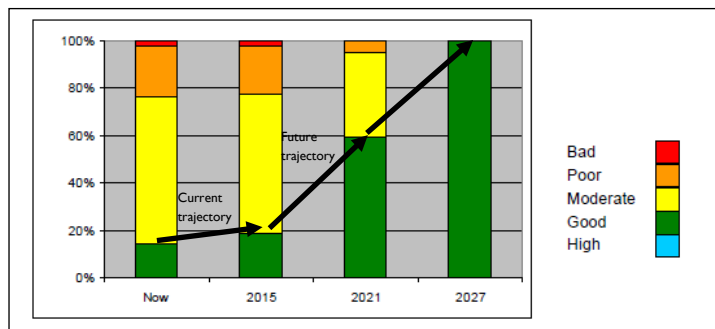
Strategic objectives of EU freshwater policy

The Commission states that the aim of future policy should be to “ensure a sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s long term be?

12. We support the overarching goal of the Commission’s freshwater policy but believe it should not be achieved without balanced consideration of issues such as the carbon and financial costs to society.
13. The WFD objective of 100% of water bodies reaching GES by 2027, based on the current pace of improvements, appears challenging if it is to be achieved at reasonable cost. As we note above, despite significant investment between 2010 and 2015 there will be a relatively small reduction in the percentage of water bodies not reaching GES.

³⁴ Although not all savings would be achieved through water bills.

14. A step change in the pace of improvement will be required in the next two six-year river basin management planning cycles. For example, the graph below shows that for the Severn River Basin District, draft targets for improvement from 2015 onwards would require a significant step change in the rate of improvement. Furthermore, a National Audit Office (NAO) report on diffuse pollution noted that although the Environment Agency expects more than 60% of England’s water to meet the standard by 2027, they consider that it will not be possible to achieve “good status” in all water bodies by that date using only current technologies.³⁵



Source: Severn River Basin District, draft River Basin Management Plan.

15. It is not clear if the rest of Europe will meet these timelines. Deloitte’s recent EU commissioned ‘fitness check’ found that some countries including Portugal and Spain were still consulting on their River Basin Management Plans.³⁶ And, whilst the flexibility accorded by exemptions in the WFD (which allow alternative objectives to be set or achievement delayed where achievement of GES is either technically infeasible or disproportionately costly) is welcome, there is uncertainty that the exemptions are consistently applied across Europe.

16. The original timeline of 100% GES by 2015 with two potential extensions to 2027 was established when the WFD came into force in 2000. Since then the 2008 financial crisis and the 2011 European sovereign debt crisis, have taken place. The impact of these crises on the original timescales for achieving objectives is not yet clear.

How adaptable to emerging new challenges is the current policy framework likely to be?

17. We forecast that climate change will make the achievement of EU Directives more challenging. Our Climate Change Risk Assessment, submitted to Defra in January 2011, highlighted the risk of river flows decreasing with increasing summer temperature and decreased precipitation. We would expect the Environment Agency’s discharge consents to become tighter in response.

18. We are concerned that seeking to achieve 100% GES by 2027 may not allow adequate time for robust cost/benefit analysis and consideration of more progressive

³⁵ NAO, *Tackling diffuse water pollution in England* (July 2010), p12.

³⁶ European Commission – General Directorate Environment: *Support to Fitness Check Water Policy* (14 July 2011) pp123-124.

solutions, such as catchment management, that may allow the same ends to be achieved but with a lower financial and carbon impact.

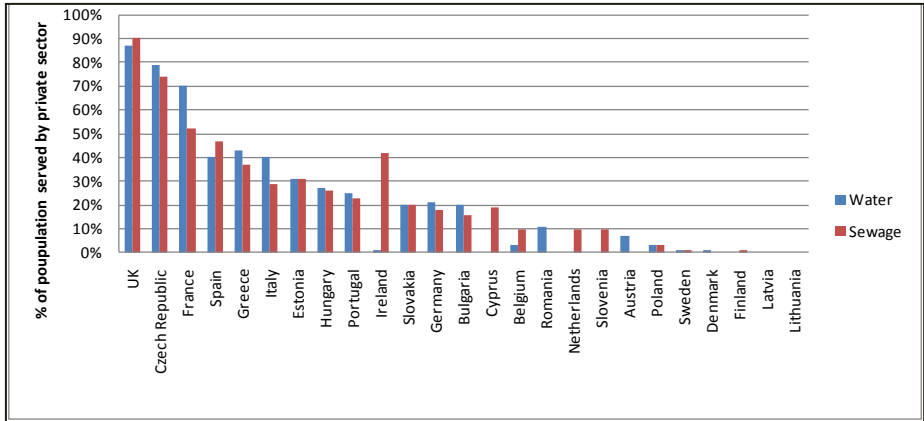
- 19. We need to be seeking and implementing the most cost effective solutions for the catchment. End of pipe solutions are a relatively easy and established way of achieving and demonstrating improvement in water quality and as such are likely to be favoured given the pace required by the WFD. These solutions frequently require construction of 60 year life assets, with considerable operational energy cost. The whole life carbon impact of these solutions needs to be taken into account – there is no provision to do so within the WFD.

Adding value

How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects are best dealt with at Member State, or regional level?

- 20. England is unique in its funding of water services through a fully privatised model. The chart below shows how few EU countries use the private sector to provide water and sewerage services.

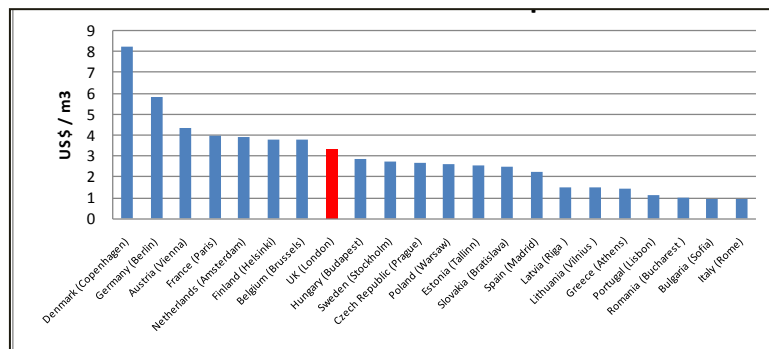
Private sector provision of Water and Sewerage Services across EU member states



Source: Pinsent Masons Water Yearbook 2010/11

- 21. This creates wide differences across countries in funding methods for capital investment, tariff pricing and the use of government tax revenues for water service provision. Given this wide variation, issues relating to financing investment and cost recovery for water services are best dealt with at a Member State level.
- 22. These differences are also seen in the average tariff charged across Europe. This is illustrated in the chart below.

Combined cost of both water and sewerage services across EU members' capital cities



Source: Global Water Intelligence tariff survey 2010, based on 10m³/month usage

Future policy

In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

23. It will be important to consider whether standards and timescales for implementation of existing EU Directives need to be reviewed as a consequence of: climate change; the changing financial circumstances of Member States; and growth in the scientific evidence base that underpins the setting of objectives.
24. New EU policies should be devised and implemented in a way that more broadly considers the issue of *what is sustainable?* This means not only what is sustainable for the environment but also how sustainable environmental improvements are in terms of financing and the impact on the wider environment through carbon emissions.
25. Any flexibility accorded by EU Directives needs also to be reflected in the way they are transposed into UK law and implemented through policy and regulation. This should also include greater consideration of the views of water industry customers. Under the current approach to implementing the WFD (which in England and Wales focuses on the actions of water companies) a substantial proportion of the costs falls on water customers, yet they have limited influence over the objectives achieved and more importantly, the pace at which they are achieved.

Other policy areas: agriculture and cohesion

26. We welcome Defra's recognition in its Natural Environment White Paper that the EU's environmental sustainability objectives should be integrated into all EU policies. We support Defra's intention to press for a climate change audit of existing EU policies and spending plans with the aim of reducing the risk that EU policies and spending inadvertently contribute to greenhouse gas emissions³⁷.

27. We believe there could be greater cohesion between the WFD and the EU's common agricultural policy (CAP). Whilst the provisions under the 2nd pillar of the CAP do place an emphasis on water stewardship, they do not yet appear to be

³⁷ HM Government, *The Natural Choice: securing the value of nature* (June 2011) p.53

Severn Trent Water (STW)—Written evidence

sufficient to counter the pressures placed on water quality by the agricultural activities financed under pillar 1. Further reform of the CAP, its priorities and the incentives it provides agriculture could be used to contribute to the objectives of the WFD.

5 September 2011

Severn Trent Water, Thames Water and Water UK—Oral evidence (QQ 24-51)

Evidence Session No. 2.

Heard in Public.

Questions 24 - 51

WEDNESDAY 9 NOVEMBER 2011

Members present

Baroness Sharp of Guildford (in the Chair)

The Earl of Arran

Baroness Byford

The Earl of Caithness

Lord Cameron of Dillington

The Earl of Dundee

Lord Giddens

Baroness Howarth of Breckland

Lord Lewis of Newnham

Baroness Parminter

Examination of Witnesses

Andrew Fairburn, Head of Public Policy, Severn Trent Water, **Howard Brett**, Wastewater Policy and Strategy Manager, Thames Water, and **Sarah Mukherjee**, Director of Environment, Water UK.

Q24 The Chairman: Welcome. I am Margaret Sharp and I am standing in for Lord Carter, who is the Chairman of this Sub-Committee but is unfortunately not able to be here today. On behalf of the Sub-Committee, I welcome the three of you to our evidence session today. You have in front of you, I think, a list of the interests that Committee Members have declared. This is a formal evidence-taking session and a full shorthand note will be taken. The transcript will be on the public record in printed form and on the parliamentary website. You will be sent a copy of the transcript, which you will be able to revise in terms of any minor errors. We are also being webcast live and this will be accessible subsequently on the parliamentary website. First of all, for the sake of the record and the webcast, would you please introduce yourselves? I do not know whether any or all of you would like to make a brief statement or whether you would prefer us just to go to questions.

Andrew Fairburn: We are happy to go straight to questions.

The Chairman: Could I ask you just briefly, then, to introduce yourselves?

Andrew Fairburn: I am Andrew Fairburn from Severn Trent Water.

Howard Brett: I am Howard Brett from Thames Water.

Sarah Mukherjee: I am Sarah Mukherjee, Director of Environment for Water UK.

The Chairman: Thank you very much. In the evidence that Severn Trent sent to us, we read that currently nearly 75% of water bodies are assessed as not reaching the good ecological status that is required by the Water Framework Directive and that planned expenditure by the water industry will reduce this figure to only about 70% by 2015. Could you explain to us why there are such disappointing assessments? How are the assessments undertaken for this country and how do they compare with those for other EU member states? What conclusions do you draw about the effectiveness and cost-effectiveness of standards of water quality that have previously been set under EU legislation?

Andrew Fairburn: Absolutely. The first point to make, for some context, is that British rivers are in better condition than at any time since the Industrial Revolution. I believe that that is what the Environment Agency would say. That is the context. The goalposts have changed. How we used to measure a good river is not how we measure in England and Wales what a good river is now. We have 27 different tests and a river has to tick all those boxes—not 26 out of 27, it has to tick all the boxes—to be classified as good. We question whether that is an appropriate or sensible way forward.

Q25 The Chairman: Is it the river system that one is looking at here—that is, the area that the river draws upon as well and its subsidiaries?

Andrew Fairburn: For a river to be classified as good, water samples are taken and there are 27 different measures that the water has to pass. You raise some broader issues, but one of the things that we question is the science behind those 27 tests. Clearly, some of the tests for a river to be classified as good will be absolutely fundamental; some might be less important, but to tick that box, we have to use a lot of carbon. You have to ask what the cost of that is to customers, because they are paying for that carbon—the electricity we have to use—so there is a financial element. It also has a huge environmental element. Through the engineering technology we have, it is relatively straightforward to clean up water. We can do it. However, to do that we have to pump a lot of water through filters and pump a lot of air into water, and that uses a lot of energy. What is the big picture environmental impact of using all that energy? The water industry is using more and more renewables. At Severn Trent we already generate 22% of our energy ourselves, through anaerobic digestion, wind farms and other technology; we will be up to 30% within the next year or two. Despite that, we project that our carbon footprint is going to increase, not because we are not doing absolutely everything we can to reduce it through our renewables programme, but because we are having to clean water to these new standards—standards that we question; nobody has been able to tell us the science behind them so we have commissioned our own report—which is having an environmental impact in terms of climate change. That would be our big picture.

Howard Brett: I have a couple of additional thoughts on that. You asked about the number of water bodies. There are 10 major basins or catchments, but they are broken up into smaller water bodies, of which there are several hundred. If you would like to know the precise number across the country, I will have to get back to you on that, but we are looking at several hundred water bodies that are all independently assessed. Picking up the earlier point about historic quality, in the Thames region, for instance, 80% of our rivers used to be good or very good quality, and that has now dropped down to about 20% under these new assessments, so it is a very different assessment of river quality. You then asked about assessments for other EU member states. I am afraid that that is something that I do not

have much visibility of and I am not sure that anybody on this side has. It is very difficult to find out exactly what is going on in other member states in terms of their current achievement and their ambition.

Andrew Fairburn: Just on that point, we have been desperately going round looking for best practice and trying to find out what others are doing. We have not been able to find out so we have commissioned our own report, which we would be very happy to share with the Committee once we have it in a couple of months' time. We want to know what others are doing. Are they using the same 27 tests? How are they implementing them? What are they finding? We do not have that research yet.

Sarah Mukherjee: The evidence that I have is semi-anecdotal. Water UK is a member of an organisation called EUREAU—of course—which is the European water industry group, and many countries are members of that organisation as well. The conversations we have in coffee breaks suggest that we are further ahead than many other countries. One presentation that we had in one of our working groups last week was by one of the Flanders companies. They assessed that 7% of their rivers were of good status and they were aspiring to between 10% and 13% by 2027. I cannot give you that as robustly assessed evidence but certainly anecdotally that is where some of our colleagues are.

The Chairman: Yet the aim is 100% good ecological status, is it not, by 2030.

Sarah Mukherjee: By 2027.

Andrew Fairburn: In theory by 2015.

Q26 Lord Lewis of Newnham: You have answered some of my questions. We are finding this very confusing. Your figure is that 75% are not of good ecological status, yet the Ofwat report talked about 70% of English and 90% of Welsh rivers being rated as good or very good for water quality. There is a difference here between the sets of data. These statistics are really quite disparate from the point of view of trying to assess what the situation actually is. You talk about 27 tests. If I understand it correctly, you imply that if one fails, then they all fail.

Howard Brett: That is correct.

Lord Lewis of Newnham: It would be interesting to know what your view is on that 27 and how far that number has grown over the last 20 years, from what may have been 8 or 10 factors. With regard to sampling, the Thames, for example, is rather a long river; if it fails at any one point does that automatically mean that the river fails in totality or do you divide the river up into various sections? Mr Fairburn, when you are doing your survey, I would very much appreciate it if you could find out the different techniques of sampling that are used in Europe. It seems to me that that is the critical factor. If you sample something, from there on the chemistry and physics can be absolutely perfect, but if your sampling has been incorrect, you get an incorrect answer to your question. I know that there is a tendency, as we have been told, to go towards a more biological type of sampling rather than a chemical form of sampling, but biological forms of sampling have within them a whole series of other associated problems, on reliability and how you assess the thing over a period of time. I just wonder if you have any comments on that. These figures that we are being presented with are so different and it is rather confusing to us to know exactly what we are talking about under these circumstances.

Howard Brett: You cover a very big area. To start with, on the opening comments about Ofwat's view of life and how good Welsh and English rivers are, that is the 80% figure that I

was quoting for the Thames. That is the older type of classification, which by and large used only four or six general parameters, so there was a big step change from relatively few parameters to 27. Those parameters did not include a biological or ecological test, although there was a parallel assessment for biology. Where we were at about 80% good in the Thames, the same sort of figure was assessed as good for biology as well. You also asked about the Thames and whether one sample makes the entire river fail. No, as you rightly say, the Thames is a long river and would be broken up into smaller water bodies. As I said, if you would like to know the precise number of water bodies in the UK, I am happy to find out and inform you in due course. You are absolutely right about the reliability of biological sampling. Of course, it has the benefit that the biology is there all the time and that gives you a more continuous assessment of the river quality than an instantaneous chemical test. Historically, the biological assessment looked only at invertebrates, which are a very good measure of ecological health, but in the Framework Directive assessment more emphasis is placed on plants, fish and, in particular, diatoms, which are microscopic algae. Some of those ecological assessments, because they are incredibly stringent and assume a condition that is almost unimpacted by humanity, are very difficult to achieve.

Andrew Fairburn: The situation is that under the Water Framework Directive you have to pass all 27 tests. Our question is: what is the science behind those 27 tests? Secondly, do they lead to perverse consequences? The amount of carbon energy that you need to spend to get a river up from 26 to 27 and tick the overall box might be wholly disproportionate to the actual benefit and will cost customers a huge amount of money—all this has to be paid for, of course. It costs the environment an awful lot of money, because you are using a lot of energy to get rid of that pollutant or whatever was in the water. There is also the environmental opportunity cost. If you have a stretch of water and to get the overall tick you have to tick all 27, and it is on 26 now, to get it from 26 to 27 is going to cost £1 million. You do get a benefit, but it is arguably a marginal benefit. However, if you spent that £1 million on another river which may be getting 10 out of 27, you might be able to get a lot more bang for your buck, a lot better value for money and a better deal for the environment. There is a lack of flexibility in the system and the way it is currently implemented in the UK. Our problem is not with the Water Framework Directive; our problem is with the way it is implemented. We think this lack of flexibility does not make sense for our customers or the environment.

Q27 The Chairman: Do you think that it is implemented less stringently in other countries? You mentioned the way it is implemented in the UK.

Andrew Fairburn: Anecdotally the answer is yes. We have commissioned a report, which I referenced earlier, that is looking at the science behind the 27 tests: where do they come from, does everybody use them and how are other countries implementing them? Within the EU, you have a huge range of rivers, geographies and habitats; for example, if I lived in Alsace I might be quite keen to know what was going on in Germany and how its rivers were affecting me. The fundamentals throughout Europe are so different. That is one issue. The second issue is that we suspect that it is not being implemented uniformly.

Sarah Mukherjee: This reads across to the wider point that we have a lot of discussions about within the industry. A one-size-fits-all solution is simply falling apart. With 27 countries, you cannot say that a solution that works in one place will work in another, be that efficiency targets or river basin management plans. I was talking to a colleague from Malta at our European conference last week. He told me that they need a river basin management plan even though they have no rivers. Presumably it is a very small piece of paper. It rather highlights the increasingly large round peg that is being squashed into a very

square hole at the moment. We feel that it goes to the heart of the Blueprint if we can increase the flexibility in the way that we are allowed to deal with this, to give our customers and the environment the best outcomes. That would be all to the good.

Q28 Baroness Howarth of Breckland: I just want to ask a supplementary question. If that is so, what is your solution? As a consumer, I clearly do not want to pay over the odds for my water, but I want clean water. In reading all your evidence, what came through to me was certainly your vested interest, if I may say, because you must have a vested interest as an industry. What I cannot clearly get, and I would like you to clarify through the rest of the questions, is what you would like to see that would meet both benefits. Simply to complain that this is an economic difficulty is not going to be helpful in getting your evidence together that says what would provide a better framework. We want to be absolutely clear what your solutions are as well as your analysis of the problem.

Sarah Mukherjee: Certainly at the national level this is something that we have been working quite positively and constructively towards with the water White Paper. At the risk of repeating myself, it depends; for example, for some companies, a catchment management solution is obviously the best way forward, and this slightly moves towards the question of whether water companies should be paying farmers for environmental improvements. Some companies would say, “Absolutely, that makes sense,” and they are already doing that, because that brings the best and most cost-effective solution for the customer and the environment. Other companies would not want to go down that path, because it would not make sense. For others, a treatment works is the best solution in terms of value for money. At a national level, with our regulators and with Defra, we are working towards a framework that allows you to do that, where the edges are to do with our core responsibility to provide clean, safe drinking water and to help with environmental solutions, as per the natural environment White Paper, where appropriate and where they make sense for customers, but to allow the flexibility to enable each company to find that solution at a local level with their regulator, within the framework of the standards that we would all wish to achieve. I realise that that only partly answers your question, but the very nature of this is that it is flexible and I cannot necessarily say, “If you put this and this together then you will get the solution”, because that is very different. What we need is a wide enough framework that we can all agree on and then we can all agree that we are mature enough to find the solutions, where they are right geographically and where they are right for customers.

Andrew Fairburn: Just for clarity, we are not arguing for lower environmental standards. We are arguing for higher environmental standards in the round, looking at climate change and carbon emissions as well as the state of the rivers—rivers that are of course improving, which is the context here. In terms of specific solutions, the catch-all solution is that we are saying that Defra should review how the Water Framework Directive is set to be implemented in the UK. Implementation has started, but it has not started in earnest. Now is our window of opportunity to implement. We would hope that the sort of conclusion to come out of that is a review of the 27 tests. Which ones are fundamental that every river must pass? Which ones are important but less fundamental? Maybe you could have a pass rate of 80% or 90% to allow a bit of inherent flexibility. Maybe before you go ahead with any big projects such as building or upgrading a treatment works, you ask, “What is the problem that you are trying to fix? Is there a problem to be fixed?” Some rivers are more sensitive to certain things than others. Secondly, you should ask, “What are the options?” As Sarah pointed out, sometimes you need an engineering solution and you need to use high energy to deal with a problem. That is absolutely fine as long as you have looked at the alternatives: “What about source management? What about sitting down with the farmers?” The two big

determinants on our rivers are what we as an industry put into rivers and what comes from agriculture: “What work could we do with farmers in that area?” The third question, which seems an obvious one, is the cost. Of course, we are worried about cost for our customers. You could argue that the water industry, with its vested interest, has an incentive to build as much as possible. We are arguing something that some would say is counterintuitive, but it is being driven by our customers—we have to worry about our customers’ bills. Look at the financial cost, of course, but look at the environmental cost. The state of our rivers is hugely important but it is the environmental big picture that matters.

Q29 The Chairman: That picks up another issue, which is that of the asset management plans and the periodic review that is coming up in 2014. On the point you were making about diffuse pollution and whether there are alternative solutions, under the 2014 periodic review will permission for water companies to pay landowners to cease deleterious practices affect catchments? Will you be able to pay landowners to undertake other beneficial measures that might be critical to achieving good ecological status? Perhaps this question is for you, Ms Mukherjee.

Sarah Mukherjee: Thank you, my Lord Chairman. I hesitate to say this, but again it depends. Wessex is a very good example of a company that has pursued a policy of working with farmers and, in some cases, paying them to help to achieve those environmental outcomes. For example, farmers would not use a pesticide at a particular time or build a shed for washing equipment close to a watercourse. Companies have seen the benefits of that in terms of not having to think of hard-engineered treatment solutions and therefore keeping costs as low as possible. In other areas the work has been less economically driven, so it is a process of engagement. However, it is not a completely motherhood-and-apple-pie solution. The first people engaged with tend to be those who are happiest to engage. From my previous job working in rural affairs for many years, I know that some farmers do not actually have regular access to electricity, so the thought of e-mailing them or asking them to take a photo on their BlackBerry and send it in is not going to be a solution. It takes time and it takes a lot of effort and resource that many companies are happy to put in. However, as we have said, in some cases it is simply not the best solution, so we would have to look at rebuilding or regenerating a treatment work. However, it very much depends. One of the things that on coming into the industry I have found so fascinating is the geographical diversity and the fact that for every valley and mountain there is a different solution that is the best one.

Howard Brett: I think that you have asked about the permission for water companies to pay landowners. Strictly speaking, I think that that is a question to ask Ofwat, which will fund us to do that. In terms of promoting such schemes, if we can see that there is an environmental outcome that can be achieved more cost-effectively by liaison with other landowners—achieving the same outcome as you could by adopting end-of-pipe treatment—I think we would be happy to promote them. Frankly, it appears to be a far more sustainable solution, but that is assuming it is a sustainable solution. That is one of the key tests. We would look for what is sustainable over the long term.

Andrew Fairburn: Of course, the people paying for it would be our customers through the bill process. As part of the process, we would have to go to our customers and say to them, “This is what is proposed. This is why we think it is a good idea. Here is the environmental case and here is the financial case.” If it passed all those tests, clearly the sensible thing would be to go in that direction. It comes back to responsibility and control by showing our customers that we have done the due diligence and that this would give them the best value for money in terms of the environment and in terms of their bills.

The Chairman: You do not actually ask your customers, you ask Ofwat, do you not?

Andrew Fairburn: We have to go to Ofwat with a business plan which ultimately gets charged to our customers. As part of that process, we rightly have to show that we have customer buy-in. If you are talking about long-term sustainability, it is right and proper that water companies should bring their customers with them. Ultimately our customers are taxpayers and the electorate. If we cannot show them that we are delivering good value for money—I am talking environmentally as well as economically—in the long term I do not believe that that is sustainable. That is the view we would take. We have to show them that the Water Framework Directive or any other measure we are looking at makes environmental sense and economic sense. If we collectively do not do that, in my judgment it would not last and we would actually damage the environment. That is why this is so important. We now have a window of opportunity, through the water Blueprint process in Europe and with Defra publishing a water White Paper in, it is likely, December, to put this on the right track both for the environment and for our customers.

Q30 Baroness Byford: How do you get any response from the buy-in? I understand that you have to justify what you want to do, but you are not going to be writing to each of us as customers saying, “Do you approve of us spending £500,000 or £1 million?”

Andrew Fairburn: You ask a really good question. We are just embarking on that part of the review where we have to develop the business plans and show customer buy-in. It covers everything from focus groups to quantitative measurement to getting customer representatives such as the Consumer Council for Water to come in. One of the questions we are asking ourselves now is how best can we engage with our customers so that when we go to Ofwat, our economic regulator, and say, “This is what we would like to do during the period covering 2015 to 2020”, in which the water framework directive is likely to feature very largely, we can also say, “Hey look, our customers totally support it,” or, “Hey look, our customers are not convinced”. It is our responsibility and Ofwat will hold us to account. We have to show that we have customer engagement.

Q31 The Earl of Arran: On a point of information, who owns Severn Trent Water?

Andrew Fairburn: Our shareholders. We are a public listed company.

The Earl of Arran: You are not owned by a company outside this country?

Andrew Fairburn: No, and this is another issue. Of the 10 major water and sewerage companies, three of us are listed on the stock market. That is ourselves, United Utilities in the north-west and Pennon Group, which owns South West Water in Devon and Cornwall. The rest of the major 10 companies are privately owned by banks and others.

The Earl of Arran: But by UK banks.

Howard Brett: No. For instance, Thames Water is owned by a consortium made up largely of pension funds not necessarily from the UK. A lot of them are overseas, and it is managed by an overseas investment bank.

Q32 Lord Giddens: As someone who myself works on climate change, can I ask you to elaborate a bit more on the implications? What are the main issues that you see as deriving from the likelihood of accelerating climate change over the next 10 to 20 years in terms of water management? We know that climate change will bring more extreme weather and unpredictable weather patterns, which are bound to impact on water flow in a considerable

way. We know that the margins that we are dealing with at the moment in water management are geared to a different type of relationship with the weather and the climate. Can you say something about what planning ahead you are doing to cope with those issues, where the limitations might be, how this links up with your point about producing carbon in trying to deal with these issues and whether you think that all this could be better handled in a different relationship between the EU framework and our national and local projects? Those are three questions folded in to one, as we spent so long on question 1. To my mind, this is a fundamental issue for the country.

Howard Brett: Let me kick off with one very quick observation: one of the issues with a Framework Directive is that by establishing the sort of quality we have now and not recognising that that may change in the future—

Lord Giddens: You make that point in your submission.

Howard Brett: By doing that, it is very clear that you could be trying to chase an unattainable quality standard because in future the quality may deteriorate due to climate change.

Lord Giddens: Not just in the future. There is now evidence from Peter Stott in Oxford that the floods in 2000, I think it was, can be modelled and shown to be about 90% likely to have been influenced by climate change, so that impact is here already.

Howard Brett: I accept that.

Sarah Mukherjee: This is just a brief observation, but all water companies have 25-year water resource plans which take into account climate change. They have adaptation plans as well. One of our difficulties is which models we should be looking at. There is still some uncertainty among our regulators, for example, about where we should be looking and which models we should be looking at. You are absolutely right to say that it is something that all companies are very aware of. Wherever you are in the country, there are going to be impacts, whether they are going to be far less water or, in some cases, potentially more, but at the wrong time or at different times.

Lord Giddens: Well, for ever, because there is no way back from it. We do not know of any way of getting greenhouse gas emissions out of the atmosphere, so there is no way back.

Sarah Mukherjee: Some of this goes to how we collect water and if we are going to have to look at catching it and storing it while we can. The infrastructure that we would need for that is inevitably going to be expensive. One of the discussions that we have with Ofwat is where we should be looking at those adaptation measures and what it is prepared to fund in terms of the certainty of the model for the medium term. These discussions take place on a very regular basis. As part of the water White Paper, we have been discussing with Defra how to build resilience into the system. You are absolutely right to say that it is potentially enormous, combined with population drivers, which is the other big, long-term issue we are looking at.

Lord Giddens: Forgive me for saying so, but that sounds a very vague answer, because we need to plan and invest now for 10 or 20 years down the line. You all know that, given the discussions around the Thames Barrier, where there seems to be a fairly coherent plan. If you are going to build more reservoirs, for example, or if you are going somehow to control watercourses early on to deal with these issues, we probably have to invest now for at least 10, and perhaps even 20, years in the future against a background of uncertainty because there is no certainty in modelling what will happen.

Howard Brett: You are absolutely right about the uncertainty. One of the difficulties that we face is that that uncertainty is sometimes manifested by an unwillingness to accept investment plans. I am not quite sure that that is the right way to phrase it but, as an example, you might say that there is a real threat in terms of water resources in the south-east. One option would be more reservoirs—you mentioned reservoirs a moment ago—but clearly that has to be justified to the greater public, to planning authorities and to our economic regulator to enable us to build now for the future.

Q33 Lord Giddens: Would it be fair to say that you are not very far down the line in thinking about that or in planning for it?

Howard Brett: What I would say is that this is a very broad topic area. We are looking at it from various different points. One of the concerns I have is about urban drainage and the capacity of our sewers to accommodate torrential downpours. There are two elements to that. One is that we have a lot of sunk infrastructure. How much would it cost to upgrade it? With that, what level of service would it be right to develop to? Should we assume that storms will get much worse in the future? Assuming that they do, is there an absolute expectation that there should be no sewer flooding, for instance, or do you have to accept that there will come a point where we have rain storms that will beat whatever we put in? It is a case of diminishing returns on the scale of your investment. We are looking at those topics, but it is a particularly broad area. What we are trying to achieve is—it is a horrible term—a no-regrets strategy that will enable us to be flexible to respond to those changes as and when they occur.

Lord Giddens: Forgive me pushing you—and I am not going to push you further—but it is a broad area and the impact is quite well known. Even if you look at lower-level risk scenarios—baseline risk scenarios—it is pretty clear what one has to do. If one produced more effective water management and influenced pollution, because if you get upstream flooding it can add to pollution that can then go downstream, those implications are very well known.

Andrew Fairburn: Absolutely. Perhaps I may give four specifics. There are lots of issues there. Do we have enough water in the UK, given climate change? One thing that we could do, which we have been advocating, is effectively to connect up more of the trade-in between water company areas. At the moment, water companies do not trade very much water with each other. We accept that water is not like electricity or gas. It costs more energy to pump it around the country, so it is not a silver bullet, but we absolutely believe—and we have technical papers, we have done the research and we have the case to show—that in many cases, instead of building a big reservoir or a big capital asset, sharing water would give customers better value for money and, critically for your point, more resilience. We are a bigger pool, so there are areas there.

Other areas include looking at the consents in rivers. At the moment, there is very little smart consenting. We do work in Florida—part of our business works internationally and we work in Florida—and there they have some excellent schemes with smart consenting. Say that it is winter time and the river is flowing high, the standards of what you put into the river can be more flexible because it is more diluted. If you have climate change and the river is flowing at a very low level, clearly you want to be a bit more careful about what you put into it because it is less diluted. Smart consenting—consenting on what the conditions are, not on some abstract concept—could help.

A third area, which goes to heart of the problem, is that we as an industry accept that climate change is out there, but we can stop it getting worse. We can generate more energy.

There are some basic controls. Let me give one practical example. Probably the most promising source of renewable energy for us is anaerobic digestion—getting energy from sewage sludge. Who could argue with that? It is proving hugely successful for us. We could do more, but we are held back by some relatively easy-to-fix regulations. For example, if I am a supermarket and I have a sandwich, I cannot put it in our digesters because I am mixing different sources, but if I flushed it down the toilet I could put it in the digesters. It just does not make sense. We should be able to just slightly tweak this. We have a list of things that we are advocating. The OFT has looked at that issue, so it is not just us who are looking at it. There is more that we as an industry could do. You have three specifics there.

The fourth specific is that of course we have to look at our assets. We have to look at our water treatment works and our other assets and make them more resilient, but that is only one out of the four things. There are other things we could and should be doing.

Howard Brett: I have one quick point. We are funded in five-year blocks, so it is quite difficult to make those long-term, 20, 35 or 50-year investments.

Lord Giddens: Therefore, that is another thing that should be looked at. I would have thought that it is not very sensible anyway because in water management you have to plan further ahead than five years, even without changing weather conditions. It does not make much sense to me.

Sarah Mukherjee: It was before I joined the industry, but I think that I am right in saying that there were several measures that companies suggested as part of their adaptation plans that were not funded by Ofwat in the previous price review.

The Chairman: It is extraordinary, is it not? If you are planning a new reservoir, you need to look 10 or 15 years ahead, do you not?

Howard Brett: Or longer.

The Chairman: Or longer, yes. This is something that we should certainly take up.

Q34 The Earl of Caithness: Notwithstanding the fact that you have a declaration of interests, we are required to declare our interests when we first ask a question. I did not ask one last week so I must declare my interests now. I am a trustee of a trust in Scotland that owns agricultural land. I also enjoy fishing.

This is a question for Water UK. Could you clarify who you represent in Scotland and Northern Ireland, and whether the problems you have addressed so far this morning are the same in Scotland and Northern Ireland, with their slightly different systems? Going on to all of you, you mention in your evidence the priority substances directive that the EU wants to ratchet up. Doubtless we will then gold-plate it for you in the normal UK fashion, just to make life easy. What are the problems here? Where do you see the concerns? My final thought is this. Lord Giddens has taken you on to the future, with further climate change, but what about the demographic change, with older people and all the drugs that we are now being given? Will that cause you problems in future?

Sarah Mukherjee: In Scotland and Northern Ireland, we represent Scottish Water and Northern Ireland Water. Interestingly, earlier this week I was at a conference on sustainable land management—“catchment management” as we know it south of the border. The concerns, for example about priority substances that we will come to, are very similar. Obviously the structure is slightly different because both companies, Northern Ireland Water and Scottish Water, are more closely allied to their Governments, so perhaps there

is a slight difference in emphasis in some cases. However, broadly speaking, from a Blueprint and EU point of view, the issues that I have spoken about to my colleagues in those countries are broadly the same.

I will move on briefly to priority substances and then ask my colleagues to comment more specifically. This is something that we have highlighted with the UK Government. I know that Defra is very aware of the potential cost of the possible new priority substances that the Commission proposes. The scientific evidence is available. What concerns us is its application. We are not convinced that the research body is available to give definitive evidence on whether these very low levels of particular substances, for example naturally produced oestrogens, will have environmental effects. This is not a public health issue, as the WHO has already made clear. It is an environmental issue. What worries us is that we will end up, as you rightly say, with a raft of new substances that the Commission's economic impact assessment has suggested could cost us £26 billion in this country alone over the next five years. This is why we have asked the Commission to put some of the substances on a watch list so we can generate more research to see if removing the substances is environmentally necessary.

Q35 Lord Lewis of Newnham: So you do not believe in the precautionary principle?

Howard Brett: The precautionary principle needs to be tempered somewhat. I suggest that what we have here is overprecaution. You start off by doing very sound research to identify at what concentration a substance might have an effect on the population, through test materials in a laboratory. You work back from that to decide what concentration—a lower concentration—will not have an impact. Then you say, “But we’re not really sure about that so we’ll add a safety factor on top of it.” You end up with concentrations of these things that are probably not that relevant in the environment, but are relevant because they are ubiquitous—you will always find them in sewage effluent. They will come largely from domestic sources. You cannot talk about going out and regulating nasty traders because it is things that you and I will use, take and have in the house.

Lord Lewis of Newnham: I think that a large number of people get rid of pharmaceuticals by putting them down the toilet.

Howard Brett: Clearly, there are already initiatives telling people not to do that but to take their drugs back to a doctor's surgery, which of course is absolutely the right thing to do. Even then, we have to consider what things are used. A common painkiller, ibuprofen, is now coming up the agenda as an environmental problem. What I do not see is the extent of that environmental problem. When you add safety factors and say, “Hang on, you must virtually remove the stuff from sewage effluent,” will you see a benefit from doing that? That is where we struggle. If there was a benefit, we would be quite happy to say, “Yes, this is something that needs to be removed.” But when you have to put in expensive treatment that customers will pay for, and increase your carbon emissions and then see no benefit, it is right to question and say, “What actually is the point?”

Q36 The Earl of Caithness: Who is listening to you? How do you get your message across, first to Defra from the English point of view and then to the Commission? Is the Commission listening? Is anybody else in Europe concerned?

Sarah Mukherjee: In fact, Howard is one of our expert representatives on EUREAU on this particular issue, which is why I have been looking in his direction quite a bit. Defra is very aware of the problem. We have regular meetings with officials, and Defra officials sit on the expert working groups that are looking at this. Again this is anecdotal, but at the European

conference I was at last week, we did exactly this exercise. We went around the table saying, “Where are our Governments?” Of the many countries represented, there were perhaps five or six who could give an assessment of where their Government stood on this issue. A lot of it was looking at the monitoring side rather than the economic side. In fact, the feeling of the meeting—again, anecdotally speaking—was very much that it was something that national Governments had not really seen on the horizon yet. But of course these regulations are potentially not that far away.

Q37 Lord Lewis of Newnham: I am not quite clear. Let us say that Defra and your committee decide, for instance, that when it comes to the problem of nitrates in water, which has been with us for many years and about which there is much argument, the regulation is too high. It would have to go back to Europe and get the whole of Europe to agree to that point. That debate over nitrates has been going on to my knowledge for the past 20 years. Only then would you be able to cross it off your list. Is that right?

Howard Brett: Yes, that is right.

Lord Lewis of Newnham: So you have an enormous mountain to climb.

Howard Brett: Yes.

Q38 Baroness Howarth of Breckland: Could I just clarify this? This is why you are asking for what you described earlier as a flexible framework. The question that I have about that is how we make sure that we have standard outcome measurements that give environmental and quality outcomes that everyone can relate to. That is the real difficulty: getting any definition. Any document that I read has not got a clear definition of what that outcome would look like.

Sarah Mukherjee: You could argue that at the moment the outputs are not equal across Europe. As we have been discussing, they are interpreted in very different ways by national Governments.

Baroness Howarth of Breckland: That is outputs, but I am talking about outcomes: the relationship with environmental, value for money and quality controls. How do you get that complex matrix into something that is manageable within the framework and understandable? One problem with this is that it is in the “too difficult” box because it is complex. How do we get the message across so that we can get good-quality water at a viable cost?

Howard Brett: My observation on that is that when these things are debated in Europe there is not enough recognition of the social affordability costs. It is driven largely on a purely scientific basis. I recognise that there is science behind it, but the issue is how that is interpreted in the light of the potential impacts. That step, to me, is often missing. There are meant to be committees in Europe that consider this. Despite that, we still see very stringent standards being promoted that we think are possibly unachievable. I am not sure whether that answers your question, but for me it is the missing step.

Sarah Mukherjee: I tend to agree. It is achieving the balance. When you talk to European policy-makers, the economic element sometimes appears to be missing.

Andrew Fairburn: I think that it boils down to the principle of how you develop good public policy. There are no simple answers. I would say that whatever system you have has to be simple, otherwise it will not work and will become too complex. Secondly, it must be flexible. There are those who would say that in its design the Water Framework Directive is

supposed to be flexible. That leads us back as an example to the question: is it being implemented in a flexible way, and appropriately in England and Wales? We would question that. The third point, which sounds a bit motherhood and apple pie but is absolutely true, is that we should engage with people early. The fourth point is, “Don’t be in a silo.” Too much policy seems to be made in a silo. The Water Framework Directive looks at the good ecological state of a river. Who could argue with that? Everybody signed up to it. But then you have to start balancing it against climate change and economics. So do not make policy in a silo: look at the big picture.

Q39 The Earl of Dundee: Severn Trent’s evidence indicates that water quality is under a huge amount of pressure from agricultural activities. Would you like to comment on what you believe to be the net impact of the CAP on water quality?

Andrew Fairburn: Probably the best people to answer that question would be the Environment Agency. They would have the bigger overview. We know from the Environment Agency that farming, agriculture and the water industry, which I guess is the aggregate of everyone else, are about equal in the impact that they have on the quality of rivers. Of course, it varies over time. In a dry period, there will be very little run-off from farm land—from agriculture—hence there will be very little impact on the quality of rivers. A downpour with lots of run-off from farms adjacent to a river can have a huge impact. That comes back to a point that was made earlier about when you take samples. A river after a flash flood will be in a very different condition from how it is in a period of drought.

The Earl of Dundee: How would you rank the United Kingdom among our European partners? Do you think it is better or worse or about the same?

Sarah Mukherjee: It is very difficult to say. Perhaps I could slightly widen the scope of the answer to talk about the reform of the CAP, which is yet another of those big policy drivers on the horizon. In our conversations with agricultural organisations in this country, we are not a hundred miles away from each other on this. We would like to see good soil, air and water quality at the heart of payments to farmers because there has been a tendency to concentrate on the indicator species, on particular specific biodiversity benefits. We certainly feel that if you get those building blocks right, a host of environmental, biodiversity and other benefits will flow. To slightly reframe the CAP to encourage farmers to get those basics right, rather than perhaps more specific things, would make an awful lot of sense. We have had a lot of conversations with conservation groups and farming groups in this country, as I have said, and we are all pretty much in agreement on that, as indeed are representative bodies in Europe. The question, of course, is the wider indicator. There is so much to be decided about the CAP on the widest level, including how much money there will be in the first place and who will get first dibs, if you like. We hope that some of those messages will get across, but it is very early days in terms of the financing.

Q40 The Earl of Dundee: Thames’s evidence implies that proposed EU subsidies to reduce agricultural run-off may still be inconsistent with the polluter-pays principle. If so, do you think that EU agricultural policy should simply set out to wield the stick—for example, cross-compliance requirements—and offer no carrots?

Howard Brett: No. I think that wielding the stick is probably an extreme way of putting it. In purest terms, you could say that it does not meet the polluter-pays principle. One thing that we have said is that you have to look at the bigger picture. It is about benefits and costs to society. I would not say that it should be all sticks and no carrots; I am not even sure that I would describe it as sticks and carrots. Perhaps it is different sorts of carrots.

Sarah Mukherjee: Bigger carrots—carrots with water in them. Perhaps I may add something to Howard’s point. It is very difficult to see how the polluter-pays principle works when you have a farmer on an income of £8,000 a year, who is producing his or her goods at below the cost of production. That goes to a much wider issue about who in the end pays for this: is it us as water customers; is it us as people who pay for the CAP; or is it us as people paying through the supermarket? Certainly, we at Water UK are keen to talk more to the supermarkets about the role that we can all play in supporting agriculture and getting the best solutions. Someone is getting the benefit and someone is paying to clear it up.

Q41 Baroness Parminter: Severn Trent’s evidence calls for a greater consideration of the water industry’s customers. What you are saying is that they do not set the objectives and they do not set the pace of change, but they are picking up the tab. I am sure that you are not calling into question the right of democratic Governments to set objectives, so what exactly are you calling for?

Andrew Fairburn: Democratic Governments can and should do what they judge to be best. I suppose what we are saying is that this comes back to the structure of ownership through Europe, where different countries have different forms of ownership, which matters. England is the only country to have wholly privately owned water and sewerage systems; in other countries, some bits are to varying degrees. That affects who pays. Our point is that as a taxpayer, if I do not like the way the Government are spending my money, I have redress. That is democracy. Our water customers have some engagement but if, at the end of the day, Ofwat, our economic regulator, says that these projects can go ahead and that they pass the test, our customers have to pay. Off the top of my head, water bills are typically 30% of what energy bills are for domestic customers, but they have risen and customers have a better deal with better quality water and what we are putting into rivers is much better quality. They are getting a better deal. It is easy to say to customers, “The water companies must do this and that, and you have a magic fund in your customers because they have to pay.” All we are saying is, “Factor in the customers more. Don’t forget them.” In some quarters they may have been forgotten for too long. We are saying that their willingness to pay has to be central and to do that we have to show them that we are getting our environmental bang for our buck, which comes back to the bigger-picture argument about the water framework directive, about priority substances and everything else. We are not saying, “Don’t do it.” We are saying, “Do it in a smart way and do it in a way that we can justify to our customers.”

Q42 Baroness Parminter: That is the analysis that you gave us in your evidence. What exactly do you want to see happen?

Andrew Fairburn: It is a cultural change as much as anything. We are saying to policy makers, “Do not treat our customers as cash cows.” Too often, we have thought about the policy and said that our customers can pay for that. Is there a silver bullet? No. Is there a specific thing? No. We are saying, “We should have a culture of awareness that customers pay for this, so don’t forget that.” That is the only thing we are seeking to do.

Sarah Mukherjee: Catchment management is a very good example of this. As we have said, in many cases it makes very obvious economic sense to have catchment management solutions. In some cases it does not and we feel that there is potentially a danger, with reduced numbers at the Environment Agency and very tight economic times generally, that companies could end up in some sort of catchment guardian role, with a lot of responsibilities, which eventually customers have to bear, not necessarily with concomitant customer benefits.

Q43 Lord Lewis of Newnham: Let me just take up a point on that. One thing that I find disturbing is the position in this country of building. If I understand it correctly, you have no influence whatever in governing the areas in which there should be building. You have responsibility to provide water to a house, but you have no redress as to where a house should be built in the first instance. That immediately comes back to the point that was made earlier about things like building on flood plains and so on. Do you have any influence whatever on the building industry as regards where they can build, the amount they can build or anything else to do with building issues?

Howard Brett: We have very little influence—virtually none—on the building industry per se. In the past, we have tried to forge good links with planning authorities and the regional planning assemblies. Of course, they have now disappeared. So it is a case of rebuilding links perhaps with the local authorities in terms not of where we can direct homes to be built but clearly there are some areas where you can say that it would be easier for the water environment and less damaging in some locations than in others. We have those discussions, but we do not have any statutory basis on which to insist on them.

Lord Lewis of Newnham: This comes back to the point that I think you made earlier that the south-east was one of the more difficult areas from the point of view of the production of water, yet it is an obvious area in which one is considering building to a very large extent. This must touch back to your previous arguments about reservoirs, transportation of water and things of that nature.

Q44 The Chairman: Are you involved at all with the local economic partnerships? You were saying that there used to be the RDAs. Their successors, who are more fragmented, are these new local economic partnerships that are being built.

Howard Brett: I am not sure of the extent of our involvement with them at the moment. Obviously we liaise with local authorities in terms of their intended house building and where they are planning for those houses to be built. We have lost that overall regional structure.

Q45 Baroness Byford: I have a couple of questions and then will move on to the water framework directive. I do not think that Severn Trent goes as far as East Anglia—or perhaps it does.

Andrew Fairburn: We go up to north-east England, to Lincolnshire. We border Anglia.

Baroness Byford: Okay. Lincolnshire will do fine. Obviously, with changes in climate, one of the big questions for farmers is about being able to irrigate in the way that they have been able to in the past. A general question to all three of you, although perhaps not to Thames, is: have you had discussions on reducing when that water can be used? For example, if you used it at night it would not burn off so quickly as it would during the day. Have there been discussions on that? Have there also been discussions on trying to get more water, as you mentioned earlier, from other sources across to some of those areas?

Sarah Mukherjee: I will have to find the figures for you and I would be very happy to do that. From what I understand from previous conversations we have had as part of the water resources summits with Defra on the public water supply and the agricultural water supply, the Environment Agency gives licences to agriculture separately in order to provide water. In terms of the crossover between water that water companies supply to farmers, I am afraid that I do not have those figures.

Baroness Byford: Would you not be involved in those discussions at all?

Sarah Mukherjee: We were involved in discussions on water resources earlier this year with Defra in as much as we are part of the water picture. But I would have to go back to our members and ask specifically whether there are companies that directly supply farmers. I believe that, in the vast majority of cases, the relationship is between the Environment Agency and the farmer.

Baroness Byford: I just wondered whether you as water companies have an input into those sorts of discussions.

Andrew Fairburn: I do not know the specifics of whether we have sat down with farmers. I would be surprised if we had not. That seems a very good point. We certainly have teams of people who sit with people and advise them on water efficiency. Severn Trent has sought to champion—it is not a silver bullet but it is part of the solution—the whole area of water trading and water distribution. If one area has sufficient water, which is all relative of course, from a suite of options, one option is to distribute that to other areas. We have set up what we hope is a practical framework of how that could work, add to environmental and climate change resilience, and save customers money.

Baroness Byford: Have any costings been put on that? We are often told that moving water is hugely expensive.

Andrew Fairburn: It is expensive in terms of finance because water is heavy and you have to use a lot of energy to pump it, which of course has a carbon cost. We have done some very detailed modelling. Essentially our argument is: will it sort out every problem? The answer is no. But is it part of the suite of options? The answer is yes. We have put some prices in our modelling on different options, such as building a reservoir, to ensure that water is available. In our report—we would be very happy to share our detailed expert reports on this—we have demonstrated that in many cases water trading is practical and that, although it is probably not the cheapest option, it is not the most expensive option. In a market system, you would have used the cheapest options already. It is part of the suite of options and we think that that is one of the solutions.

The Chairman: I believe that Anglia Water does a certain amount of this, does it not? It sort of shuffles water down.

Andrew Fairburn: Yes. It is not like gas or electricity but we believe that we have expert reports and models to show that it is practical. The Victorians started the process of moving water from one part of the country to other parts of the country. Within our regions we shift water around, which is dynamic. One day we might do it in one way and on another we might do it in another way, depending on the circumstances. If we can do it within regions, why on earth can we not do it beyond the regions or our own areas?

Q46 Baroness Byford: I was very interested in that, but we are running short of time. Turning to the Water Framework Directive, my questions are: what works well? What would you retain? What would you strengthen? More importantly, what would you drop?

Andrew Fairburn: What works well? The fundamental principle behind the Water Framework Directive is that we want to clean up rivers and we are not looking at individual elements. We are looking at the whole river. We are sure that it is absolutely the right principle as well as the fact that it brings different former directives into one box. Our point is that it does not go far enough. The quality of rivers is vital, but carbon and climate change

are also vital. I would say that it needs to go further in that direction. We do not have a problem with the Water Framework Directive per se. We have concerns about how we believe it is set to be implemented. As I have said, it has not been implemented in earnest in the UK at the moment, which is why the inquiry is so timely. This is why we are asking Defra to carry out a review of how it is being implemented in the UK. Our suspicion is that it is an implementation issue. I wonder if one reason behind that—I would put it no more strongly than this—is partly cultural. Are we using all the levers at our disposal?

Howard Brett: My observation is that, as my colleague said, the Water Framework Directive is an excellent aspiration. My feeling is that it is too complex. We started out today saying, “But you are at only 20% or 25% compliance.” Has this set unrealistic expectations? You might be expecting to get to 100% in the next few years and I ask whether that is realistic. I suspect not. We have noted that it is water-centric, so it does not think of the other media. It does not say, “Okay, you improve water, so what happens to soil and what happens to air?” That is a failing. On the good side, it addresses all the possible measures that you should be looking at to improve water quality. It is not just focused on point sources. It is looking at not just agriculture but urban pollution and diffuse pollution from various sources. There is scope to apportion the effort much better than has been done in the past, which is a real positive.

Q47 The Earl of Caithness: Can I just follow that up? Do you find any sympathy for this in the Commission? There are a number of directives that affect water. Is it beginning to look at this more holistically? In my question, we talked about tightening up one area but, again, it will ratchet up carbon. Following on from Lady Byford, do you see any movement in the Commission?

Howard Brett: The Framework Directive has a lot of the older directives as basic measures, some of which are due to be repealed. A bit of streamlining is already in place.

Sarah Mukherjee: I do not have an awful lot to add to what my colleagues said on the Water Framework Directive. Perhaps I may go back to Lady Byford’s point about farmers. One thing that we can offer is our expertise. Some months ago we made an offer to the NFU that if we as companies, who are very used to managing our resources, can be of help to the farming community, we are very happy to do so.

Q48 The Chairman: Do I understand you correctly? You were saying that on the whole it is absolutely in the right place but it does not go far enough and needs to go further. Essentially, what you are saying is that we need to put more emphasis on controlling what goes into the rivers as distinct from the end-of-pipe stuff.

Howard Brett: I would say that we need to do both. I am not saying that more cannot be done on end-of-pipe treatment but clearly there is currently a large amount of non-compliance that is due to diffuse pollution, be it from agricultural or urban run-off, or what have you. Tackling both those sources is important.

Q49 Baroness Howarth of Breckland: We have run over time and we are grateful to you for your time, but I think that two themes have run through the discussion. One is the cultural change and the other is whether or not we understand what is going on sufficiently well from a scientific point of view, and therefore know how to implement the measures that would make a difference to the questions that have been raised. To raise this to the European level, if you can change behaviour at the Commission level, you might have more chance of changing behaviour through the chain. I noticed that the Thames evidence calls for greater co-operation with the Commission on information gathering and exchanging best

practice to help the policy-making process. Water UK and its pan-European counterpart are seen to have the potential to play a more prominent role in assisting the Commission to further develop its evidence base. Do you think that the Commission listens or does it have a closed door to research inputs from the water industry? Because we are short of time I am going to put my questions all together. How should the EU focus its support for research? How effective are independent competency groups in integrating scientific knowledge and local experience? You talked a lot about gathering local information and getting people engaged. Do you see value in the proposed European Innovation Partnership on water efficiency in Europe? I am sorry to speed that up.

Howard Brett: Let me deal with the last point first. I think that getting involved in the European Innovation Partnership should be a good thing. In the UK, the way we are organised is unique in Europe. We have commented that we are the only member state that has largely privatised waste water. Because of that, we have a relatively large amount of expertise—for example, collectively across this table—whereas in other member states that is much more diffuse. There are very few foci of expertise, so the matter is driven more by regulation in other member states. Therefore, it is quite difficult, I would suggest, for the UK, and certainly for the UK water industry, to make its voice heard in Europe. It is more difficult than it perhaps might be.

Sarah Mukherjee: That is one reason why we are members of EUREAU, because, as we were told by Peter Gammeltoft last week, we are seen as a gold-plated super-stakeholder in our European form. To partly answer your question, it is up to us if we want to provide that evidence. Again, anecdotally speaking, talking to officials they are not being overwhelmed by a huge amount of evidence coming from across Europe on all these issues. That is all the more reason for us and our sister research body, UKWIR, to provide that evidence to make the case that we have been making on priority substances. Because Howard and I were sitting on the same body, we managed to do it very quickly because we saw that the need was there. We have got agreement across companies to release what could be conceived of as confidential information, put it all together and present it to the Commission saying, “This is how much it will cost to do this.”

Baroness Howarth of Breckland: Do you think that it listened?

Sarah Mukherjee: Yes. I had a call the next day thanking me for that. Those figures have been used in other areas by the Commission, so it does work. We can make that first step.

Q50 Lord Lewis of Newnham: One emphasis that seems to have come forward was that research is just not being done in certain areas. Do you, as a group of people, take any responsibility for doing research? Do you compare results within your various components of industry or do you look upon it as very much a private affair?

Howard Brett: We do quite a large amount of research, particularly, as Sarah just said, on the priority substances. We initiated a large amount of research and data gathering across the industry, which was then used by Defra when the first priority substance directive was being adopted, so we do generate that research. My earlier point was that there is a lack of attention being paid by the Commission to the social and affordability issues as opposed to the raw research material, if you like. We and the Commission are very good at technical data gathering but we have to consider how that data might be interpreted. The work that we have done included that interpretation and stated, “If you do this, this is how much it will cost.”

Q51 Baroness Howarth of Breckland: I have one final point on all that. On the structure of the industry, you have made the point several times that the industry here is very different from the industry in much of Europe. You could say that some of the European countries may have more opportunity to do things such as sharing water because they are one huge company. You have made the point that innovation is more likely to take place if you have different bits of the organisation, but that depends on this sharing taking place. Are the companies prepared to share very sensitive information if it is going to benefit the environment and give value for money? Can you demonstrate that?

Sarah Mukherjee: Perhaps I could give an example, although it is not directly concerned with environmental improvement. As someone who is relatively new to the industry, I have been pleasantly surprised by its collaborative nature. That is partly due to the geographical monopoly structure in that you are not competing for the same customers and therefore sharing information is easier. When we were looking at putting infrastructure through the sewerage system, for example high-speed broadband for rural areas, it became very clear early on that you need a fairly big sewer—this was in my first or second month; I had no idea how big a sewer you needed—for a fairly small cable to ensure that there are no snags and that the sewerage system does not get blocked. However, we lacked maps. We had a group of people working on a consultation round the table. I said, “We have no maps. We cannot just take this on trust. We need to show people.” A gentleman from one company stayed up all night and drew up a map for his region, showing where the relevant sewers were. Of course, the answer was that they are in the towns. They are not situated in rural areas, where you want to get the broadband. Talking to colleagues of mine who work in other sectors, I know that it is rare to find that sort of collaborative approach. Of course, that made the point for us absolutely.

The Chairman: Thank you very much indeed. I am afraid that we have run over our time. It is very good of you to have stayed on and answered our questions and we are very grateful to you for that. As I was saying earlier, you will get a copy of the written record of this and be able to make one or two changes. We would be grateful if you could return that as quickly as possible. Thank you once again very much indeed. This has been a very interesting and good session for us.

Severn Trent Water—Supplementary written evidence

At yesterday's evidence session I undertook to get back to you about how physically we sample for water. The lead body on this is of course the Environment Agency. I have asked them for more information about how they actually carry out the tests and will report back to you as soon as I hear from them. Meanwhile, I thought you might be interested in the article below published on the EA's website.

It makes the following points:

- The quality of water in our rivers has improved considerably in recent years;
- but under the WFD the goal posts have changed – and hence the discrepancy in 'pass rates'

The points I would wish to underscore on our part are:

- We are committed to continuing to work to improve the quality of our rivers yet further and very much support the principles that underpin the WFD;
- Our concern is twofold: (a) that the WFD is set to cause a significant increase in our carbon emissions and (b) that it will push up our customers' bills unnecessarily.
- We therefore propose that DEFRA should review the directive's implementation in England and Wales to see if there is more scope to introduce it in a more environmentally and economically sustainable way.

Andrew Fairburn, 10 November 2011

Environment Agency article on water quality

(<http://www.environment-agency.gov.uk/research/planning/34383.aspx>)

Water quality has improved significantly over the last two decades.

By working with the water industry and other interested organisations, the Environment Agency have dealt with many of the major sources of pollution that are affecting our waterways.

They are now changing the way they measure the quality of the water environment to help focus on other sources of pollution so they can continue to protect and enhance the health of the public, animals, plants and habitats.

How did we use to measure water quality?

For the last twenty years, the EA used a general quality assessment (GQA) scheme to assess river water quality in terms of chemistry, biology and nutrients. GQA has helped drive environmental improvements by dealing with the main sources of pollutants, such as discharges from sewage treatment works. They now need a more sophisticated way of assessing the whole water environment that will help direct action to where it's most needed. The European Water Framework Directive (WFD) will allow them to do this.

River water quality

River water quality has generally improved over the past couple of decades in terms of chemistry and biology (Indicator: rivers of good or excellent quality). There has also been a fall in the amount of nutrients in our rivers over this time (Indicator: rivers with high levels of nutrients).

Biological quality - an indicator of overall health of rivers

The aim is to get as many rivers as possible classed as excellent or good. In 2008, 72 per cent of English rivers were at this level - the best on record, this is up from 55 per cent in 1990.

88 per cent of Welsh rivers were of good or excellent quality - again, the best on record, compared with 79 per cent in 1990.

Chemical quality - an indicator of organic pollution in general

In 2008, 79 per cent of English rivers were at excellent or good quality, up from 55 per cent in 1990.

95 per cent of Welsh rivers were of good or better quality, up from 86 per cent in 1990.

Nutrient status - phosphate and nitrate in rivers

The aim is to continue to reduce the number of rivers with high concentrations of nutrients. High concentrations are classed as greater than 0.1mg/l for phosphate and 30mg/l for nitrate.

In 2008, 51 per cent of English rivers had high concentrations of phosphate compared with 69 per cent in 1990. High concentrations of nitrate were found in 32 per cent of English rivers in 2008 compared with 36 per cent in 1995.

8.5 per cent of Welsh rivers had high concentrations of phosphate in 2008, compared 26 per cent in 1990. High concentrations of nitrate rarely occur in Welsh rivers.

How does this compare with classification results for the WFD?

Under the EU Water Framework Directive (WFD), water quality assessments are being published using a new, tougher methodology. WFD monitoring, known as classification, is risk-based and focuses where there is likely to be a problem. It uses a principle of 'one out, all out' which means that the poorest individual result drives the overall.

It also is based on a far wider range of assessments than GQA classification. It reports on over 30 measures, grouped into ecological status (including biology and 'elements' such as phosphorus and pH) and chemical status ('priority substances'). The WFD also covers estuaries, coastal waters, groundwater and lakes as well as rivers.

Differences in the data

The changes to the assessments means that WFD results appear significantly different to GQA data. We need to be careful when comparing the two. To make this easier, the EA are running the WFD and GQA classifications at the same time for 3 years. In 2011 they will follow the WFD classification only.

The important point is that they are using a more sophisticated way of measuring the water environment that looks at the impact of all pressures and allows them to deal with the biggest issues.

WFD classification

Using the new classification system, results for assessed rivers in England and Wales show that for overall ecological classification 26 per cent of rivers are good or better, 60 per cent are moderate, 12 per cent are poor and 2 per cent are bad.

Results for all assessed surface water bodies show that 29 per cent meet good ecological status or better, which includes 36 per cent of lakes and 27 per cent of estuaries and coastal waters (Figure 1: status of all water bodies).

Results for assessed groundwaters show that 65 per cent meet good quantitative status (in relation to groundwater abstraction pressures) and 59 per cent meet good status for chemicals.

These figures include the ecological potential where water bodies are artificial or heavily modified. Some water bodies will never achieve good ecological status because they have been physically altered for a specific use, such as navigation, recreation, water storage or flood protection. Ecological potential is based on the quality that can be achieved given a waterbody's changed conditions.

10 November 2011

Laurence Smith, Dr Dylan Bright, Dr Hadrian Cook, Alex Inman, Dr David Benson and Professor Andrew Jordan—Written evidence

Laurence Smith, Dr Dylan Bright, Dr Hadrian Cook, Alex Inman, Dr David Benson and Professor Andrew Jordan—Written evidence

[Submission to be found under David Benson](#)

**Laurence Smith, School of Oriental and African Studies (SOAS)—
Oral evidence (QQ 1-23)**

Evidence Session No. 1.

Heard in Public.

Questions 1 - 23

WEDNESDAY 26 OCTOBER 2011

Members present

Lord Carter of Coles (Chairman)
The Earl of Arran
Baroness Byford
The Earl of Caithness
Lord Cameron of Dillington
Lord Giddens
Baroness Howarth of Breckland
Lord Lewis of Newnham
Baroness Sharp of Guildford

Examination of Witness

Laurence Smith, Head of the Centre for Development, Environment and Policy, SOAS, University of London.

Q1 The Chairman: Mr Smith, good morning and welcome. Thank you for coming today. A formality: this is a formal session to take evidence and it is being broadcast in audio form on the internet. A transcript is being prepared which will be sent to you in due course to make corrections as appropriate. A declaration of Members' interests has been made available in a paper form but since this is the first oral evidence session of the inquiry, Members will state their interests for the record when they first ask a question. I think, for that purpose, I should state mine as a farmer in Hertfordshire. I turn, if I may, to ask the first question, and I will give Lord Arran an opportunity to ask a question as well.

The first question really has three parts. Can you say more about the land use that has the most impact on water quality and how it varies between member states? The second part is about the ecosystem approach: how that provides a framework and how the adaptive management framework can be used to deal with the uncertainty. The third part concerns the extent of economic valuation of ecosystems. I doubt, frankly, you can cover all of that unless you are very quick, so you may like to pick out the main issue. Probably the land use at the beginning would be very helpful.

Laurence Smith: Our research has focused on non-point source pollution, so diffuse pollution, in rural areas, for which the major source is agriculture. This point about the importance of land use is talking about that particular context; clearly point sources of pollution from industry, sewage treatment and urban run-off are also very important. Within agriculture the problems arise from intensive farming. It is intensive arable with high input use of fertilisers, organic manures and agro-chemicals; in livestock farming, it is intensive livestock and again the disposal and application of manures. Areas that are sloping, areas with high rainfall events and areas with uncovered soil are typically more vulnerable. In terms of Europe, I am not an expert on all of the farming systems of Europe, but clearly it's similar to the UK in northern and north-western Europe, we have been looking at programmes in Germany, the Netherlands, France and Denmark. Northern Europe shares a similar climate and agricultural systems; they have exactly the same problems. I have not looked so much at farming systems in the Mediterranean where you have large-scale irrigation. Maybe there are some different pathways and mechanisms, but the same principles apply. Where you have high input use, exposed soils, particularly where you have got sloping land, then this is going to be a source of non-point source pollution and have a degrading effect on water quality.

Q2 The Chairman: With the push to sustainable intensification, we have a dichotomy; we are putting more and more inputs in. Have you seen any areas where that issue is being tackled satisfactorily?

Laurence Smith: Yes, we looked at programmes in Australia, the north-east United States and those countries I mentioned—Germany, Denmark and the Netherlands. The solutions come from working in partnership with farmers through promoting the adoption of best management practices. There is really a hierarchy of measures. There are some things that are win/wins; good progressive farmers should already be soil testing and having detailed fertiliser management plans but it is surprising perhaps how many are not. That will typically be a win/win; it will improve the farmer's bottom line and it will help to protect the environment. Fencing of streams can improve the health of stock and save costs there. However, there are additional capital costs for the fencing, capital costs for an alternative water point; therefore, we move up the hierarchy: can the farmers afford those additional capital items? Are there grounds for assistance? Some of the programmes provide assistance, as does Catchment Sensitive Farming here, with some capital grants. Some of the programmes, particularly for groundwater protection for drinking water supplies, have to go further in compensating farmers for income foregone by switching to organic agriculture or to lower intensity production systems. There is that trade-off, and it is not easy to generalise, but it is difficult to have high-quality water and high-intensity production.

Q3 The Chairman: I think that answers my third question in a sense: can there be economic trade-offs and other mechanisms to incentivise people to do these things?

Laurence Smith: The mechanisms either exist or can be developed, but the trade-offs are definitely there. Catchments vary a lot, so it needs detailed assessment and planning at the level of an individual catchment, and close work with farmers. Let us see how far we can get with the win/wins and the best management practices, and work our way up that hierarchy.

Q4 Earl of Arran: I am married to a landowner and farmer in Devon. My question concerns economics, water use and the "polluter pays" principle, but perhaps does not pay enough. I have three questions, one which you have already touched on. Can you first comment on the state of the water market in the UK and further afield? Secondly, do you see water foot printing as a useful measure for introducing the polluter pays principle more

effectively into water policy at the EU level? Thirdly, you have touched upon the introduction of water pricing; how will it affect farmers in the UK and their incomes?

Laurence Smith: You talk about the water market. Our focus has not been the water market per se but I am an environmental economist, particularly working on water resources management. My view of the water market is that people need to pay more for water. Industry is probably pretty efficient, well metered and pays a reasonable cost. In the domestic sector, we have to move to compulsory metering; we need to have progressive increases in prices in real terms to meet the costs of environmental improvements we want to see. That is a political question; the economics is fairly clear. In agriculture, farmers pay extraction charges; they are licensed; those licences are capped. Farmers do not waste water because they pay the cost of pumping it as well. That is relatively efficient. You might introduce some sort of licence trading scheme to promote efficiency, but I think that solutions for the water market are relatively clear. Other countries do it better: Germany, for example, has a much lower level of household use per capita than we do.

When we are talking about non-point source pollution, I think we are really talking about the food market. To me, the polluter pays principle as espoused by economists, while it is nicely alliterative, does not actually make much sense. If we want a good environment, a good ecology and water protected at source, we have to pay more for our food. It is difficult to do that in the context of global markets. We do not have a level playing field; the Water Framework Directive helps to promote something approaching a level playing-field for environmental standards across the EU, but not beyond that. So we have to support farmers in other ways, and the costs have to be shared. To the extent that we can establish common standards of good practice, then farmers should bear the costs of meeting those, and cross-compliance goes some way to achieving that. But, if we want higher standards, at the moment the consumer has to pay. The consumer has to pay as a taxpayer because as yet it is not possible, or not very easy, to do it through the supermarket.

Q5 Earl of Arran: Just incidentally, is the use of boreholes coming more into effect in the farming industry for water provision?

Laurence Smith: Farmers are looking for increased and alternative sources of supply, so, where they can get permission, I am sure they will be seeking to exploit that. There is a growing interest in building on-farm storage. In particular, the dry spring this year has encouraged a lot more irrigation by farmers in eastern and central England. I do not have any particular details on demand for boreholes.

Q6 Lord Lewis of Newnham: Could we just follow up your points on water quality in agriculture, which was established as one of your major interests, if I understand correctly. Can you say more about how agriculture impacts on various other sources? To what degree, for instance, is diffuse phosphate pollution caused by agricultural activity as opposed to, say, domestic septic tanks and things of this particular nature? Is the picture in the UK similar to that in the EU? How effective are available tools for assessing and mitigating risks in land management? I believe the kite tool is one such operation. Finally, should the EU devise innovative market-based mechanisms to protect water against these threats? One such suggestion, perhaps, would be a carbon market to restore peat beds, and things of that nature.

Laurence Smith: I am not a natural scientist, but from what I understand there is considerable variability across catchments in terms of the contribution of agriculture to the phosphorus loading—between 20 and 70%—but Defra has quoted figures of 40-50% on

average. Agriculture is a very significant source of phosphorus. Septic tanks, if you excuse the pun, are a bit of black hole. There is not much information about them. There has been some recent work by Linda May from the Centre for Ecology & Hydrology and Paul Withers from Bangor University; they are starting to show that it can be very significant. They estimate there are about 2 million septic tanks in the UK and Ireland. They have only done some fairly small-level studies, but they estimate that the contribution could be 20%. That can be worse during high rainfall events, when poorly maintained systems will overtop and discharge directly to streams and so on. They can certainly see improvement where people have been put on to mains sewage systems or community-level package treatment works have been installed.

Are you thinking about the kite mark in relation to branding and the behaviour of consumers? I am sure there is some potential there. I mentioned catchment-sensitive farming; it is a wonderful phrase and that, you think, could be a good brand: I only want to buy my milk if it is being produced through catchment-sensitive farming. But one hears jokes from comedians about the dilemmas of the consumer, going into the supermarket and having to think about food miles and free trade and additives and their diet, so can we really expect people to differentiate products based on that type of scheme? I think the potential is limited. It comes back to this issue about the food market, but with us as taxpayers having to pay more to see the food produced in the way we would like it to be produced. There may be some scope for developing stronger regional brands and speciality products—so say a cheese or a meat associated with a particular region and the health of the environment in that region. That could come about through a more localised catchment-management approach, where the people engaged with the land and water management are also thinking about those marketing and branding opportunities. But it is clearly difficult to have that sort of product differentiation for the staples, such as milk and cereals. If a farmer grows winter wheat, where does it end up? With food processing and livestock feed, for example there is not that traceability. I think we should not rule it out but I think the scope is limited in some ways.

My Lord Chairman, I did not really respond to your point about ecosystem services but I think it provides a very good conceptual and analytical framework to think about what we want our rural landscape to deliver and, within that context, though it is perhaps difficult to operationalise, there is some scope for some innovative market mechanisms—payment-for-ecosystem-services type schemes. We are starting to study and work on these; we are partnering with the Westcountry Rivers Trust, which is leading the way in trying to develop a scheme in the south-west of England. There is some potential but, again, it is about getting a mixture of measures: a hierarchy of base regulation, voluntary action and some capital grants and compensation for farmers. Perhaps, for some particularly vulnerable areas that we want to target—the peat lands on the uplands, the River Tamar where we are working and where there are back wetlands along the valleys that are not very productive but which the farmers farm—could we take those out of production and use that type of scheme to provide the additional compensation required for what will effectively be permanent land retirement? There is scope. I am not quite sure what the EU can do apart from helping to provide the knowledge base and perhaps some of the funding mechanisms, but the science is developing to provide the knowledge so that we can design these types of targeted schemes.

Q7 Lord Lewis of Newnham: I should have declared a point of interest before I started. I chair the Advisory Board of Veolia Environmental Services. Can I just continue here? If you

take the phosphate, which you seem to be interested in, how far is phosphate associated with sewage? Do all sewage works now require tertiary treatment of their sewage?

Laurence Smith: I do not have all the detailed information. As I understand it, the standards of treatments still vary. The detailed work that we did for the River Tamar showed that some of the smaller community systems have very little tertiary treatment, and investment in phosphorus stripping as a tertiary treatment would have made a very beneficial contribution to reduction of the overall phosphorus loading in the catchment. South West Water was one of the stakeholders engaged in that exercise with us. It acknowledged that it was an area where it could invest more and the cost per household would not be out of order; it was of the order of 60 pence or £1 per household per year to provide that sort of investment.

Q8 Lord Giddens: I am Lord Giddens. I am a poor pathetic creature with no interest to declare. Can I just ask you about the impact of accelerating climate change which you discuss on the second page of your submission? I realise you have to pick and choose how to answer these questions because they are fairly general. The first is on the potential impact of climate change on management of water in the UK and the EU more generally. Obviously the difference between northern and southern Europe is so massive that it is hard to comment in a general way, but any comments you have I would be interested to hear. The second question is: what consequences and implications do you see for accelerating climate change in terms of its impact on agricultural practice—again, either in the UK specifically or the EU more generally? We are required to look at differences across Europe, not just the UK, in this committee.

Laurence Smith: The general outlook, I guess, is not a good one. Clearly there are large margins of uncertainty surrounding the predictions of climate change, so we have to be cognisant of that. The general predictions for the UK and, I guess, most of northern Europe, are for warmer temperatures, drier summers and wetter winters, but, perhaps more crucially, higher variability and potentially more severe rainfall events, more extreme events. So, coming back to the water market, we can see an increase in demand, particularly domestic demand, in hotter periods. In terms of relation to water quality, it is rainfall events that tend to increase pollutant loadings, because they wash the contaminants off the soil through surface runoff, a lot of the pollutants are carried with sediment or they are flushed through drainage systems, so pollution loadings spike with high rainfall events. That will be a cause for concern. In dry periods, we will have lower base flows, so they may be receiving a lower pollutant load but the existing load will be more concentrated. That is potentially problematic as well.

An area that tends to be overlooked is the importance of groundwater. If we do see more variability of rainfall and particularly perhaps fewer prolonged periods of steady rain that we are very familiar with in the UK, there are predictions of recharge being reduced by of the order of 5% to 15%. So groundwater levels, the concentration of pollutants within that groundwater and the availability of groundwater as a resource for drinking water supply or agriculture will also be major concerns.

To be honest I do not know the detail of all the predictions across Europe and how they vary but I would imagine those concerns map fairly consistently across north-west and northern Europe. Southern Europe, as you highlight, is different and the implications are potentially more alarming because they are likely to face the hotter summers and reduced rainfall and even more water stress, but I have not looked at that in great detail.

Q9 Lord Giddens: Before I move on to question 2, can I ask you for your views? As someone who works on climate change myself, as you say, there are quite wide divergences on predictions, although these divergences are produced as much because of unknowns in human responses as they are by our knowledge of weather patterns. But we have to deal with quite extreme differences. It does depend what the world does: how far it reduces its carbon emissions, for example. At the moment we are not doing that at all. How do you think we should deal with the fact that it may be much worse than the low-level predictions indicate, and therefore we might get really extreme weather patterns, perhaps in the shorter term, than many people think? How does one prepare for a future where there is such uncertainty and variability in prediction?

Laurence Smith: I think it is very difficult. I think the starting point is to recognise that much of our land and water management is not sustainable now. By putting our house in order now, by recognising the things that would make improvements, we will start to build considerably more resilience into those natural ecosystems, which will help in terms of adaptation in the future. Otherwise, I think we need to continue refining the knowledge base and we need to build those ranges of uncertainty into planning. That does not mean having huge flood defences now. It does not mean huge investments in infrastructure now, but perhaps being cognisant that some of that infrastructure may be needed in the future. We really need to get serious now about the softer measures in catchment management, modifications to drainage, the reinstallation of wetlands, things to slow down flows in the upper catchment, which will improve water quality and improve water availability and help to mitigate flood risk. We must address diffuse pollution as best we can through good management practices and that type of working through that hierarchy of measures tailored to local conditions, so that we reduce loadings now in order that, when we are faced with lower flows, at least concentrations may be manageable at that time.

Q10 Lord Giddens: Do you regard the Thames Barrier management plan as a kind of model? At least they are trying to think long term there, and they are trying to build an awful lot of resilience into the future Thames Barrier. I mean, the whole of London would be flooded without it, or if it fails.

Laurence Smith: Clearly, where there is that level of risk, then large investments in infrastructure may be required. I would not like to comment specifically on the Thames scheme because I have not looked at that in detail.

Q11 Lord Giddens: Can I ask you about the second part of that—implications for agriculture or whatever you would choose to focus on?

Laurence Smith: Again, it is not something I have looked at in great detail. Clearly, if we see climate change of the orders of magnitude that have been predicted, then we are likely to see considerable shifts in the patterns of production. One can see small-scale examples now cited in the media, with farmers planting olives in Sussex, or wherever it is. But farmers are adaptable and will adapt to a changing climate. One should question whether market drivers in the short to medium term are going to be more important anyway; you can see changes in the landscape today resulting from the increase in cereal prices. So climate change will have some impact on production patterns, but I suspect that market drivers will continue to be more important and more dynamic.

Q12 Lord Giddens: But the two can interact. For example there was fear of drought in parts of Europe and Russia earlier this year, with a lot of forest fires, which affected grain prices dramatically. That therefore affects, presumably, farmers working outside of those

areas which were directly affected—in the UK—so that is a sort of indication of the complexity of it.

Laurence Smith: Yes, it is highly complex but we can expect farmers to respond to the market opportunities. However, you are right. They are interlinked with physical changes in production possibilities, and also the increased volatility that may result for global market prices.

Q13 Baroness Sharp of Guildford: I wanted to address issues arising from the EU Water Framework Directive which is really the central core of our interest here. I should declare an interest. I am a visiting fellow at the Science Policy Research Unit. I wonder if you could expand a bit on your quotation from your evidence that you gave us that “the more strategic, integrated and river basin based approach adopted under the water framework directive is adaptable to these emerging challenges”—the challenges of climate change. Can you tell us a little more about what you see as the aspects of the Water Framework Directive that will work well and should be retained and which ones should be strengthened? And how far will the proposed catchment management pilot projects in the UK show how integrated and strategic approaches can be used to meet the water framework directive and its requirements here?

Laurence Smith: Yes, thank you. I think the strengths of the Water Framework Directive are that it is more comprehensive and integrated; it promotes a more comprehensive and integrated approach. It is not purely focused on a single environmental risk or hazard. It also promotes action at the scale of the catchment or river basin, and there is clearly a strong logic to assessment and management of land and water resources on a catchment scale. Those are strengths. I think it has had achievements in terms of promoting the detailed assessments that have been carried out within member states. There has been an increase in resources devoted to data collection and monitoring, so there is an improved knowledge base. It is promoting a longer-term strategic view and, in a way, an adaptive management cycle through the six-year cycle up to 2027.

We also think it is a strength that Article 14 specifies that member states should conduct at least extensive public consultation, but ideally have strong mechanisms for public participation.

As I mentioned earlier in relation to dealing with agricultural markets, it is at least beginning to set a more level-playing field for environmental standards and environmental legislation. Because it is more comprehensive, but in a way more flexible, the onus is on the member states to develop the means for implementation. Perhaps that is setting some challenges that not all member states have fully come to terms with, in terms of thinking about the need for new governance structures and delivery mechanisms and a new range of indicators, both for the outcomes that we are aiming for in terms of environmental improvement but also indicators of process—to see that the delivery arrangements are capable of achieving those.

We are very much in favour of the catchment management pilots. I think it is a very bold policy initiative by Defra to launch them in the way that they have and, as I understand it, they have not tried to blueprint in detail exactly what the arrangements will be. There are 10 Environment Agency-led pilots, and up to 15 where they have invited other organisations to bid to be the leading or host organisation for those pilot schemes.

This is, I think, the type of mechanism that is needed to deliver the Water Framework Directive because it can incorporate genuine public participation; it can incorporate genuine deliberation at a local level. The pilots, if they are run well, will have to become integrated,

because they have to start by assessing the problem they have to deal with at a catchment scale. They will recognise it is a complex problem and, to deliver solutions, they have to work with partner organisations. They will, or they should, bring in and utilise the expertise, existing funding sources and responsibilities of those partner organisations.

So, just by establishing them and giving them that role, it should develop an integrated and holistic approach. If there is genuine local engagement it will also integrate the environment with the rural economy, which is a goal of the water framework directive and brings us back to the trade-offs and the questions of sustainability. If you attempt this in a top-down centralised way, it inevitably gets compartmentalised with one part of government dealing with the environment and, or even just nitrate, another part dealing with rural development. Whereas local engagement and local concerns will be to get as far as possible in terms of improving the environment while sustaining the rural businesses that are part of that community.

So I think the Water Framework Directive is strong if it has led to this approach. It has taken the UK a little bit of time to get there but I think we are now very much on the right track. Its success is not going to be automatic; these pilots are going to need guidance; they are going to need capacity-building; they are going to need some continuity of funding support and those things are all challenges, but that is our view and we hope our research will continue to support that development

Q14 Baroness Sharp of Guildford: In terms of other European countries, can you tell us which have gone furthest in implementing the framework and developing this integrated bottom-up approach that you feel is the appropriate one? If we were to go and visit a country, what country, for example, would be a good example for us to investigate?

Laurence Smith: I cannot claim to know the details in every one of the member states. From what I know, some of the leading examples are the Netherlands, Denmark and, to a slightly lesser extent, Germany where they have been able to build on governance structures that are already relatively decentralised in water management, particularly where local government plays a strong role. We are going to have this diversity of pilots, with a diversity of lead and co-ordinating organisations, in the UK and it is going to be very interesting to see the outcomes and whether, for example, a water company does a better job than an environmental charity. The programmes we have looked at in the USA, Australia and Europe all exhibit that leadership and co-ordination function coming from local government. So I would cite those three countries as examples, not because they have necessarily implemented the Water Framework Directive better but because they have that foundation to work from—that tradition of partnership working at a local level led by local government.

Q15 Lord Cameron of Dillington: I apologise for the fact that you are our very first witness and you have to hear all this stuff. I am a farmer and landowner in Somerset, a trustee of the Lawes Agricultural Trust at Rothamsted, a Director of the Royal Bath & West Agricultural Society, President of the Guild of Agricultural Journalists, Chairman of the Strategic Advisory Board of the Government's Global Food Security programme and I am a member of the CLA, NFU, RSPB, CPRE and National Trust.

Lord Giddens: I need more to do.

Lord Cameron of Dillington: That is what I thought, too. You sort of already answered my question, which is further about the EU Water Framework Directive, what needs to change and the deficiencies that you mentioned in your submission, but it might be interesting to hear your views, and how you meld the fact that you have a centralised

European Water Framework Directive and the optimum management of water, as Elinor Ostrom said in her polycentric governance rules, being about actually managing water not from the top down. I am just wondering whether we need an EU Water Framework Directive at all?

Laurence Smith: Do we need it? I think because of those issues to do with agricultural markets, the competition aspects and the desirability for a more level playing field for environmental regulation, which also gets linked into World Trade Organisation negotiations, it is useful in that respect. It is useful if member states would not be doing this otherwise. Otherwise, is it essential? I do not know. I wanted to highlight one of the particular lessons from our research: part of our research team has been at the University of East Anglia. David Benson and Andrew Jordan are political scientists there, and tried to look at a comparison of the USA, Australia and the EU as three multi-level federal systems. If we can use the word “federal” when talking about the EU without any particular connotations, as a governance structure there are similarities.

The particular lesson that we observed is that there are federal funding mechanisms in the USA and Australia, which are not yet mirrored in the EU, that are helping to drive this local-level collaborative Ostrom-style polycentric governance approach. The USA, in some ways, is more fragmented in terms of policy, and states have a lot of autonomy, but federal government have been driving change through the provisions of the Clean Water Act. There are funding mechanisms but, to achieve that funding, you have to show genuine public participation and have genuine and substantial public information and public awareness-raising campaigns. At the same time, the US EPA and many of the state environmental agencies are actively promoting that local collaborative approach.

There is a lot of institutional support that is perhaps not fully mirrored yet in the EU; there is this funding mechanism, but the funding is conditional on working through those modes of operation. That has been successful in proliferating what they call the watershed approach and watershed management programmes. There is a huge diversity, some are more successful than others, but there is lots going on. Again it comes back to local government; it marries up with a strong tradition of local democracy and strong local government where local people jealously guard the power and authorities that they have and will take responsibility subject to not receiving unfunded mandates. If they have got the funding and the technical support they will do the job; they do not want big government telling them what to do.

In Australia, there are lots of similarities. As a federal structure it is almost looser; it is a Commonwealth, the federal Government actually has less authority over the states than in the US. But again, there are comparable funding mechanisms and locally based catchment groups or organisations can bid competitively for funds. Again, qualification for funding will be conditional on showing strong public education, strong public participation, and genuine representation of all interest groups.

Q16 Lord Cameron of Dillington: Could that be a model, for instance for the EU to part-fund our regional rivers advisory committees to do that sort of work? Because you are quite right: you were talking earlier about the genuine lack of involvement of stakeholders, somehow, within our system. There is little interest or involvement in all the benefits that emerge from water, whether they be environment, cleansing, food, etc. I just wondered whether you think that maybe there ought to be some sort of EU funding of these bodies.

Laurence Smith: I think that would be very helpful. Clearly, funding is very important. As I mentioned earlier, if we take the example of the catchment management pilots, there is a

need for capacity-building, and that needs some continuity of support, particularly in the early stages. Is there scope to use Pillar 2 funding or the structural funds through the cohesion policy, perhaps developing a mechanism—presumably it can be done at the member state level—whereby funds could be allocated to regional or catchment-based groups? Clearly, all the arrangements have got to be in place for strong governance and accountability, openness and transparency. However, the bodies that would be involved are already regulated by the Charities Commission, for example. Water companies are highly regulated and accountable. I think most of those accountability mechanisms are there. Why can we not disseminate the funds and give those more locally based groups the responsibility for allocating them? Again, they will weigh up the trade-offs between economy and environment more effectively than can be done in Whitehall.

Q17 Lord Cameron of Dillington: I have not really asked my question about deficiencies. Are there any other deficiencies you would like to note about the water framework directive?

Laurence Smith: I think that was the particular focus of our research and the one that we wanted to highlight.

Q18 Lord Lewis of Newnham: May I say I agree with your concept that the bottom-up approach is really one of the important features of the directive here? However, I do worry at times about the comparisons that one makes with Australia and America. Historically they have a very different starting point, as it were, from the point of view of how they have been dealing with water over a period of time. In America, in particular, you have this historical atmosphere of water rights, which are particularly acute among certain of the farming communities in the central core there, and which are extremely difficult to break. The irrigation problems that arise from it are really quite tremendous as a result of it. So I am slightly concerned about the comparison one makes there. I think one has to take the European context as a separate issue. We can recognise we have similar problems but I am not at all convinced that our solutions are going to be similar. I think what you are saying at the end—if I may take Lord Cameron’s remarks, which are really appropriate ones—is that we have got certain schemes operative at the moment, we ought to be utilising them and perhaps making them into a much more cohesive operation, rather than allowing them to be dispelled. The real difficulty I see with water is that you have the water directive, you have a nitrates directive, you have the Water Framework Directive and these are all from different people. There has been, in my mind, little cohesion between these particular groups of people about how to deal with what is after all a common problem.

Laurence Smith: Yes, one does need to be cautious. However, the people from our team from the University of East Anglia that I mentioned have also written papers about the constraints to policy transfer, observing that you cannot just take a policy lesson and expect to transfer it lock, stock and barrel; it does need adaptation, it needs to be well matched to local conditions. We are saying we have to work within the grain of existing governance arrangements and policies, and reforms will be incremental rather than radical. However, we submitted with our evidence a framework, which we boldly referred to as a “catchment management template”. That is based on case studies—albeit, a small set of case studies—that do demonstrate success. I think we are confident that there are sufficient commonalities in the nature of the problems, where you have got intensive farming and relatively dense rural settlement as we discussed earlier, and in terms of the nature of the solutions in terms of this bottom-up approach: the importance of a “twin track” of local deliberation backed up by a very strong knowledge base and scientific research process, so that there is a rigorous

assessment of the sources and loadings of pollutants in a catchment, which can then lead to the assessment of trade-offs and the development of management plans. That is a way forward. It is a workable model. How can we support it at the level of the member state and at the level of the EU? Funding mechanisms are one crucial means of doing it.

I hope I am not promoting our research too much, but we also conducted a survey of the voluntary sector. We know that there is the emerging and growing rivers trusts movement, and there are other community-based groups. So we did a survey that we think approximated a census; there were 40 groups we were able to identify and contact. These are not just canoeing or angling groups; these are groups that genuinely identify that their mission is to try to improve land and water management, and water quality, within a catchment. A large number of them are rivers trusts. That is an almost spontaneous, bottom-up development. It is doing lots of good work, but with only about 1,500 permanent staff—about 15,000 volunteers but a small number of permanent and part-time staff³⁸. They are struggling for funding. They have no resources. There are examples like the Westcountry Rivers Trust that are very professional, have a lot of technical and scientific capacity, understand the EU system much better than I do and know how to get grant funding from the EU. There are others that are frankly very amateurish still. That is to some extent a spontaneous community response to the problems, and government need to build on that and work with it, and develop the mechanisms to do that.

Q19 Baroness Byford: I am Hazel Byford. For the record we have family farming interests in Suffolk, I am a member of the NFU, CLA, National Trust and, I think for this particular occasion, I am president of LEAF, which is Linking Environment and Farming, something that you might be interested in directly. You said to Lord Cameron that funding is important and, in a way, that is what I wish to come back to. But could I refer you to your written submission, particularly Chapter 8, which was “Adding Value”? You clearly state in that, “The EU has the capacity to add significant value to the efforts of member states in meeting the objectives for freshwater policy, although to date these have been under-utilised.” I wondered if, in the first instance, you could answer that, then I have a couple of other questions to come, because I wondered whether that was from a constructive point of view, that schemes had not come into being, or whether it is actually a financial comment made at that stage?

Laurence Smith: That paragraph goes on to make specific references to those funding mechanisms that I have already mentioned, in the USA and Australia.

Baroness Byford: My question to you is: are we not using the funding mechanisms that are already there, or what is it that is being under-utilised?

Laurence Smith: The Pillar 1 payments, with cross-compliance: there is relatively limited provision under cross-compliance relating to protection of water resources; the Pillar 2 payments, the agri-environmental schemes, offer a lot of potential but again the existing provisions tend to concentrate more on the goals of biodiversity and have not been used effectively as yet to develop the type of best farming practices that can better contribute to water resource protection.

³⁸ Note by witness: Corrected figures: 75 full-time and 28 part-time staff, 1500 volunteers, 15000 members and supporters (Cook, H., Benson, D., Inman, A., Jordan, A, and L.E.D. Smith. Catchment management groups in England and Wales; extent, roles and influences. *Water and Environment Journal*, first published online: 23 MAR 2011/DOI:10.1111/j.747-6593.2011.00262.x)

Q20 Baroness Byford: Thank you for that. Presumably, if you take that stance, then are the proposed CAP reforms going to deal with it at all in the future? Clearly the bit I have seen that is supposed to be coming out I do not think had got help towards promoting water usage.

Laurence Smith: I have not seen anything that had that level of specificity, in relation to water, but I think we can welcome the general trend of those proposed reforms, which are stating that there will be a further switching of emphasis and funding towards payment for the environment. I just presume we have not yet got to the stage of the detailed design of the schemes. Again, I would encourage the subsidiarity principle to be applied to allow, to the extent possible, greater autonomy for member states, and even the regions of member states, to determine how that Pillar 2 funding could best be spent. Some regions might want to give greater priority to water protection measures than others; in others, biodiversity may continue to be a particular goal.

It seems to be heading in the right direction, in that the reforms will allow a greater proportion of the funding to go to agri-environmental schemes. The capping and redistribution will also tend to favour the smaller farmers and less favoured areas. Those less favoured areas will often be in the upper parts of catchments, or in the wetlands or delta areas, where the potential for environmental conservation and water protection measures will be greater.

Baroness Byford: Presumably those areas you have spoken of are the areas where they will not have so much pollution as a result of agricultural production, will they?

Laurence Smith: It depends. If there is still relatively intensive grazing in upland areas, then that will be a source of pollution. It is important to protect water at its source in the upper parts of the catchment first and foremost, and then proceed downstream to look at aspects elsewhere. There are also the issues to deal with moorlands and peat lands in upper areas, the extent to which they have been drained, and the extent to which they can be restored and rewetted. There is a complex mix, and it will depend on the specific conditions.

Q21 Baroness Byford: One final thing—I hope I am all right—is that we have got two situations: one is we need to use water better and have clean water, and at the same time we have to produce more food for growing populations in this country and in the EU; we are looking across the EU, obviously. Do you have anything further to hope from the funding from the European Parliament and the CAP that would actually help that?

Laurence Smith: If I could go back to the earlier point about ecosystems and the ecosystems framework, that helps us to understand what we are trying to achieve but maybe, to begin to operationalise it, what is needed is more rural spatial planning; we do not have a strong rural spatial planning process at the moment. To begin to manage those trade-offs, we need to look at our catchments, decide which are the most vulnerable areas that will need protection measures and mitigation measures, that will need farmers to adopt less intensive farming methods, and identify those areas that are less at risk, where we can concentrate intensive production and so have the food production that we need. So we need that integrated approach. How can the EU support that? Again, it is through the funding mechanisms that will allow groups at the local level to make those types of assessments, to have those types of integrated rural plans that all agencies can hopefully subscribe and contribute to. Again, is it a question of allowing more flexibility and local autonomy in how those funding mechanisms are used? One area could prioritise production of particular ecosystem services, another area could prioritise more intensive agricultural

production and support to that because it is at less risk to the environment; that is the right place to do intensive farming.

Q22 Baroness Howarth of Breckland: You have talked about a lot of the things that I was going to ask you about. I did think I was going to say I had no interests to declare, and I now think I have several, which are: I am a member of the National Trust, the RSPB and the Wildfowl & Wetlands Trust. I say this because it actually gave me an introduction to asking the question about the balance between local understanding, what local really means, and the strategic question. You mentioned in your paper that the EU could help by setting the broader strategic objectives, and then leaving it, if you like, to member states and very much to local groups to pull that together. I would like you to talk a little bit about how you see those things pulling together, because the description you have just given to Baroness Byford about how local groups can take up a series of different interests leads me to say: how do you get the co-ordination and, if you like, conceptual framework around the whole, in order to take it forward on a strategic basis? From what you said earlier, I think this is really crucial and critical, and there is not a lot of time for people to deliberate. I know how long local government sometimes takes. Could you take us through, if you like, how you see those things holding together, particularly as there are so many stakeholders involved? How do you engage them all of the time?

Laurence Smith: It was very informative for us to look at some of these examples of successful programmes. An example which is well worth looking at in particular, if you only have time to look at one, is the Healthy Waterways Partnership in south-east Queensland—they have very good web-based resources. What do we learn from them? It is large; they cover 17 catchments that drain into Moreton Bay, including Brisbane and the Brisbane river. It has taken 20 years to evolve their approach and there is now a secretariat which provides the “glue”, the horizontal co-ordination and the communication, but most of the implementation is done by industry working groups, by community-based working groups, by local government. They draw up a regional spatial and strategic plan and then annual management plans with actions. That is the type of model that is needed in terms of planning.

On the timescale, I take your point about the urgency; particularly the politicians and the paymasters will be looking for results. However, we have to be realistic that this type of approach—I do not think there is an alternative—will take quite a long time to evolve and develop, particularly from where we are starting from in the UK. I think we need to be patient and provide the type of support that is needed for capacity-building.

How do we make it work? We piloted some of these ideas in two catchments in the UK: the River Thurne in East Anglia and the River Tamar. We started with a stakeholder mapping exercise. Then we did what the Americans call circuit riding; before we had the first meeting in the village hall, we contacted individuals by phone, we went to see them over their kitchen tables, to talk about their interests and persuade them to come along to that first meeting. It is a little bit time- and resource-intensive but it is cheaper than top-down things that go wrong.

We got a lot of people in the room, but what we learnt is you do not have to engage with everybody all the time. You will engage with the people who have the relevant roles, responsibilities and mandates. It is about partnership working with existing agencies; for most of the things that you need to get done, somebody already has that job in the Highways Agency, in the local council, in the Environment Agency. It is just about getting them talking and working together better. You want that public engagement because you

want the civil society support and acceptance of the changes that you are going to introduce, but you will work with the people who have the biggest stakes, who are the most engaged, who are prepared to spend the time. Farmers will work through representatives and farmer leaders—

Q23 Baroness Howarth of Breckland: We are running a bit short on time and I do not doubt that that is an excellent way forward, but if you look at evidence of where we are in the UK, we have not done very well so far. The standards of water are poor, the co-ordination is poor and those, if you like, overarching objectives are only just about to come out in the Government's thinking. Earlier this year, we did a report on innovation in agriculture. My concern is whether or not that approach will actually bring the understanding of the scientific crisis to a local level fast enough in order to change behaviour. That is my interest in this: how you change people's behaviour. I know you do it by engaging local, people but is it going to be fast enough for the crisis that we face? If not, what else could be done? I am particularly interested in whether you think the European Innovation Partnership, in its thinking about a water-efficient Europe, will help in all of that?

Laurence Smith: I really cannot answer your question about whether we can do it fast enough. We can make some improvements relatively rapidly. I do not really think there is an alternative. We worked with farmers in the south-west of England; they are a tough crowd. It took a lot of effort to get them to come to the first meeting; it took a lot of effort to win them over. The innovation and the science is important because you have to show them the evidence and make the evidence understandable to keep them in the room and to get them working with you. Participation, when it is done well, delivers the benefits that it talks about in the literature of substantive and instrumental improvements. A substantive improvement is getting better information and better decisions, because you use the information, experience and expertise of local people as well as the Agricultural Census and Defra and Environment Agency data.

The instrumental benefits come because you build that ownership and acceptance, so that the farmers are working with you, and they will voluntarily go as far as they can within the constraints of their resources; you do not have to send the Environment Agency to check up and monitor and enforce, and it is cheaper and more effective. You can do that, but it does take time. If these catchment management pilots are set up well, if they are supported, well they are talking about a national rollout after of one year; one year is too short, but in the first year they need to have those meetings, have those fora and try to develop that catchment assessment and the first draft of a plan. In the second year they could deliver a lot of those win/wins, the voluntary measures and the low-hanging fruit that is pretty obvious and just needs a bit of co-ordination and money to make some improvements that hopefully will deliver things that can be measured and visually seen. Then I think it can take off. In the third year they can improve their strategic plan and action plans. Then in the fourth and fifth year, they will be starting to look like that Australian model. I hope that has answered some of your questions.

I was not that familiar with the Innovation Partnership for a water-efficient Europe, to be honest. I did a bit of research but did not find that much information. There seem to be five key areas of action, which were rather vague, about protecting water bodies, sustainable city innovation processes, renewable energy from water—I am not sure what that means apart from hydropower and ICT. My priorities would be, we have focused on the rural areas, but sustainable urban drainage and improvements in urban waterways are also key. There is also an equity dimension in that: why are we only improving chalk streams in Hampshire for trout fisherman? We have to improve the urban environment for people who are less well off.

That is very important. I think there is lots of room for research and innovation, for example, in architectural design and infrastructure, plus potentially big savings in infrastructure investment.

ICT and the tools: there was a question about our report card. The report card is just one way of communicating information; public awareness-raising is not going to change behaviour by itself, but it makes your other policies work better. Whether it is regulation or agreements with farmers for low-intensity agriculture, there is going to be much greater acceptance if it has been preceded by that public awareness-raising campaign.

Also, this catchment management is complex. It is not just technical. It is about working the people and the politics. So when it comes to innovation, we took the idea of the report card from the Australians. This is their example, they produce it every year. There are gradings for sub-catchments. Local politicians now ask to be warned 24 hours in advance because, if the grading in their area has gone from a C to a D, it is like a bad school report; they are going to have to face their electors the next morning. Public engagement is very broad in that respect and this is now available as an iPhone app, an example of innovation in that respect.

The Chairman: Inevitably. Thank you very much. I think you made us think a great deal. We are very grateful for your written evidence and for you coming today. Thank you very much.

Thames Water—Written evidence

We welcome the European Commission’s decision to create a strategy for fresh water policy, and the Committee’s timely inquiry. We are grateful for the opportunity to provide our input into the process.

EU Directives have without doubt delivered very significant environmental and drinking water quality improvements, and we support the principle that quality standards are set at a European level and implemented by Member States. However, the risk has emerged that standards in some areas will deliver negligible benefits at a disproportionate cost (as high as £27 billion to the UK industry if certain EU proposals are ratified). This is, we believe, a key issue for the Committee to address.

- I *The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?*
- I.1 There are two elements to this question: first, in relation to sustainable use and, second, in relation to water quality. We believe the overarching policy goal should be widened to incorporate considerations of affordability alongside environmental sensitivity.
- I.2 The introduction of the concept of affordability is key because it ensures that environmental improvements come at a cost that reflects the ability of citizens to pay. Indeed, sustainability should include affordability at its core as if such proposals are not affordable, they are also unsustainable.
- I.3 One of the key challenges to address is the impending risk that investment to meet EU water quality standards yields minimal environmental benefits at a disproportionate cost. This point is addressed in more depth in questions four and six.
- I.4 Finally, the trade-off between water quality improvements and carbon emissions has yet to be resolved. As regulations for water quality become more stringent, so do the needs for more highly energy intensive treatment processes, increasing carbon emissions. It is, therefore, important that the EU policy reflects the need to strike the right balance between these two conflicting pressures.
- I.5 As part of the review of our Strategic Direction Statement, we have been outlining our plans for fresh water supply for the next 25 years. In our experience, this level of forward planning is required to ensure stability and planned investment in the sector and we would encourage the EU to follow a similar timescale.
- 2 *How adaptable to emerging new challenges is the current policy framework likely to be?*

- 2.1 Domestic policies are largely adequate to encourage sustainable use of resources, as they provide for a level of adaptability which the current European framework lacks.
- 2.2 While newer components of the water policy framework, such as the Water Framework Directive, are generally more adaptable to new challenges, older policies, such as those derived from the Urban Waste Water Treatment Directive, offer much less adaptability..
- 2.3 Nonetheless, even the Water Framework Directive (WFD) is lacking in a number of key areas. For example, there is no recognition of the potential impact of compliance with the water quality standards in the Directive on other areas, particularly carbon accounting and energy. It is crucial that future water regulation takes full account of the wider environmental impacts. Reducing one environmental pressure at the expense of increasing another will only have the effect of increasing costs for business and customers while doing little or nothing to protect the environment.
- 2.4 In addition, the Directive does not incorporate any flexibility to allow for the impacts of climate change. While the Directive requires no deterioration in baseline assessments of ecology, the latest data on climate change points to changes in both ecology and river flows.
- 2.5 It is therefore possible that significant investment, and the associated energy requirements, could be driven by an unrealistic aspiration to try and protect against an inevitable change in ecology caused by climate change.
- 3.0 *How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?*
- 3.1 Since the privatisation of the water industry in England and Wales in 1989 the country has seen a transformation in the quality of water and wastewater services. Government, regulators and companies have all contributed to very significant improvements in drinking water quality, standards of wastewater treatment, levels of leakage and remediating unsustainable abstractions. Indeed, investment of over 100 billion euros has been made since 1989.
- 3.2 Given this success, and the need to ensure that the detail of water policy in any Member State must, to be effective, reflect geographical and other characteristics, we believe that the detail of water policy should remain the responsibility of domestic departments and agencies.
- 3.3 It is far more difficult for the Commission to develop policy that can successfully accommodate variations between Member States, so we would prefer a high-level approach that sets out a framework for success, rather than prescribing detailed parameters that may lead to costly schemes yielding negligible benefits.

- 3.4 The very wide divergence of structural and regulatory approaches for the water industry across Europe mean that funding issues for this sector are best addressed at Member State level. However, there is clearly a bigger issue in other European countries in respect of water use for agriculture. Proposed EU subsidies for reducing agricultural run-off, for example, may help to encourage and improve water quality but it is inconsistent with the ‘polluter pays’ principle that underpins environmental policy. We believe that the forthcoming CAP reforms should review this anomaly.
- 3.5 In terms of water quality, the WFD recognises that there is not a ‘standard ecology’ that can be applied across Member States, and hence allows for regional differences. This is a good example of how the EU can encourage improvement without undue local prescription.
- 3.6 Where the European Commission can add value is by looking at the longer term trends likely to affect all Member States. This might include conducting research into future trends that would provide member states and the industry with a more complete picture of what might be required of them over the next generation. Such research would not only allow a more scalable implementation of future water policy, but it would also provide greater certainty for investors. This will ensure a more significant and meaningful contribution to the long-term sustainability of water resources.
- 4.0 *In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?*
- 4.1 Given the different structures in Member states, we would not recommend any pan-European approach to managing water use.
- 4.2 It is of course essential that EU policy makers base decisions on robust scientific evidence, and that human health remains the overriding consideration. However, we believe there is scope to challenge the way in which some policies within the EU have been developed. The use of a precautionary principle, and of additional safety factors on scientific evidence with significant margins of uncertainty meet public expectations but can lead to very stringent standards that result in negligible environmental benefit, whilst incurring large costs.
- 4.3 For example, the current iteration of the Priority Substances Directive includes stringent water quality standards for substances including metals (such as nickel and lead) and agrochemicals, as well as compounds such as plasticizers that are currently being exceeded in a number of UK watercourses.
- 4.4 Many of these substances are ubiquitous in the environment and enter our sewage networks. They are not effectively removed during conventional waste water treatment and are therefore present in effluent discharged to watercourses. The source of most of the ‘priority substances’ is sewage and/or rain water run-off from domestic properties, so trade effluent control cannot effectively address the issue, and there is little option other than ‘end-of-pipe’ treatment if control is required.

- 4.5 The expected expansion of the list of priority substances could include endocrine disrupters – probably responsible, when present in the environment in high concentrations, for the feminisation of fish – and other pharmaceutical products such as ibuprofen. All proposals to expand the list currently being considered have been prepared on a precautionary basis and include significant safety factors. The limits currently being considered for synthetic oestrogen, for example, are ten times tighter than anything considered by the UK to date.
- 4.6 Moving from the impact of priority substances in sewage effluent on receiving watercourses to the risk of contamination of drinking water supplies, it is important to note the intermediate stage of drinking water treatment that separates the two.
- 4.7 The UK is already regarded as a world leader in protecting human health from water contamination by these substances. The World Health Organisation (WHO) in particular, has recently identified the UK’s risk-based approach to substance control in water as an example of international best practice³⁹.
- 4.8 Both the UK Drinking Water Inspectorate, and the WHO, have clearly stated that the current levels of pharmaceuticals (compounds a revised list of priority substances could seek to control) in drinking water are at such low levels that they do not require close monitoring or intervention to protect human health:
- 4.9 *“The substantial margins of safety for individual compounds suggest that appreciable adverse impacts on human health are very unlikely at current levels of exposure in drinking water.”*
- 4.10 However, If such controls were introduced, the additions to the list would, we believe, require significant amounts of additional equipment at the majority of our sewage treatment works. While further improvements to our river water quality are undoubtedly required, the concentrations of substances such as endocrine disrupters are not increasing. If anything, given lower dosages and improved sewage treatment processes, concentrations are arguably lower than in previous years. This inevitably raises the question of *“what benefits will we see?”* and *“at what cost?”*
- 4.11 Meeting the limits in the Directive and, in particular, those under discussion if the list is extended, could require costly, energy-intensive treatment methods that would, we believe, have only a limited environmental benefit, even assuming that it is possible to achieve the proposed limits. The increased carbon emissions produced from these more intensive treatment procedures would also serve to eliminate much of the environmental benefit they would seek to achieve. It has yet to be determined if the technology currently exists to treat these substances to a sufficient level to meet the proposed limits in the first place.
- 4.12 According to current estimates, the cost to the UK water Industry of complying with these newly proposed limited could be as high as £27 billion⁴⁰.

³⁹ Pharmaceuticals in drinking water (WHO/HSE/WSH/I 105, 2011),

⁴⁰ According to UK Water Industry Research and Atkin’s recent examination of priority substances

- 5** *What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?*
- 5.1 Water scarcity and droughts are forecast to pose a challenge over time. We believe EU support and incentives for universal metering and the gradual phasing out of most inefficient water appliances; as well as research to improve our understanding of the true value of water in the environment will help meet these challenges.
- 6** *How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?*
- 6.1 In the same way that accurate science will play a deciding role in the review of the Priority Substances list, ensuring a better understanding of wider fresh water issues is also critical for future policy decisions to add value.
- 6.2 We would urge the Commission to ensure its research programme provides a sound platform for evidence-based policy making which takes full account of risk; an approach that is generally followed by the UK Government as a matter of course. Although European Commission environmental policy adheres to the precautionary principle, we believe that a more thorough account of risk can be incorporated into policy-making through an expanded and more robust scientific evidence base.
- 6.3 As the Priority Substances Directive demonstrates, building margins of error upon scientific conclusions that already incorporate significant uncertainty can lead to grossly disproportionate regulation. This can in the worst case result in arbitrary target-chasing that has limited benefits for the environment, while increasing the affordability pressure on customers and increasing carbon emissions through ever more intensive treatment processes.
- 6.4 We advocate a role for the Commission that focuses on the strategic future of water. It is clear that such a focus would require significant research and partnership working. We believe this could be more effectively achieved through closer working relationships with water companies themselves.
- 6.5 We would also welcome greater cooperation with the Commission on information gathering and exchanging best practice to help in the policy making process. Both the trade association for domestic water utilities, Water UK, and its pan-European counterpart, EUREAU, offer a wealth of scientific and industry expertise and have the potential to play a more prominent role in assisting the Commission to further develop its evidence base. In particular, we believe the industry can help avoid unwelcome and unintended consequences that can arise without a sufficient examination of the practical consequences.
- 7** *How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?*

- 7.1 CAP could contribute to sustainable freshwater management primarily by introducing measures to reduce diffuse pollution by agrochemicals, and, more generally, by encouraging land management practices that minimise soil erosion and hence particulate and dissolved matter losses to water courses.
- 7.2 In particular, the presence of pesticides in the raw water we abstract is driving the use of energy intensive water treatment methods to maintain drinking water quality. We would like to see positive CAP reform to help protect raw water quality, and help us to reduce our energy consumption.

8 *Conclusion*

- 8.1 European environmental and drinking water quality legislation has left a legacy of improvements and has the potential for a continued positive impact. However, the risk that new standards deliver only negligible benefits at a disproportionate cost to the industry and our customers may undermine this success story. We would urge a careful re-examination of the case for further change.

6 September 2011

Thames Water, Severn Trent Water and Water UK—Oral evidence (QQ 24-51)

**Thames Water, Severn Trent Water and Water UK—Oral evidence
(QQ 24-51)**

[Transcript to be found under Severn Trent Water](#)

Water Industry Commission for Scotland—Written evidence

Overview

1. As the economic regulator of Scottish Water, the publicly-owned water and sewerage company serving the whole of Scotland, we welcome this timely inquiry. Our responses to the specific questions in the call for evidence are provided in the Appendix on page 3. First we provide an overview of what we consider to be the key issues.
2. The water industry has successfully delivered improvements in environmental and water quality performance required by European and national law. Customer service has also improved significantly. In Scotland this has all been achieved without any real increase in customers' bills in the past eight years. Indeed with the introduction of retail competition in 2008, non-household customers have enjoyed keener prices and better service as attention has switched from the sale of units of water to the sale of water services.
3. Economic regulation has resulted in efficiency improvements in terms both of operating costs and investment delivery and in terms of financing. But the challenges that lie ahead are different. No doubt investment to improve water quality will need to continue but there are now new desired outcomes such as reducing carbon emissions. Historically, the industry has met the need for improved water quality standards by building new treatment plants, which have increased energy use. Indeed, Scottish Water is one of Scotland's largest energy users. This approach has been reinforced by the regulatory framework. First, because a water company earns a return on assets constructed, not outcomes delivered. And secondly because the way in which the rate of return is set has not encouraged potentially more innovative solutions (as they are likely also to be more risky).
4. It is instructive to consider the level of operating costs incurred by the water industry across Great Britain. Although efficiency has improved by over 40%, the actual level of operating costs has remained broadly stable in real terms. This is because the increased operating costs, including energy, incurred by the industry have broadly offset the efficiency improvements.
5. Looking forward there is less scope for efficiency either in operating costs or in capital expenditure. The water companies also face a more constrained financial environment. As such, customers' charges are likely more immediately to reflect increased environmental and public health standards required of water companies. There may also be higher costs associated with capital maintenance if better methods of delivering the required outcomes cannot be found.
6. There are four ways that this upward pressure on customers' charges could be mitigated:
 - Less bureaucratic economic regulation would create a framework within which innovation is encouraged rather than discouraged. The economic regulator would work with the company to identify longer term solutions or opportunities for asset

rationalisation (approaches that are unlikely currently to be pursued as they would be unlikely to reach pay-back).

- There may be more scope to encourage collaboration between companies both in terms of trading water resources or, perhaps, asset sharing between adjacent company areas.
 - The introduction of retail competition and the focus this brings on selling services and solutions to customers could potentially reduce the amount of water required and the operational costs of the whole industry in the long term. Retailers charged with selling trade effluent services, for example, are more likely to focus on helping a customer manage its discharges to sewer (thereby avoiding costs and potential penalties).
 - Environmental standards could be more tailored to the actual improvement required. It may be possible to require higher or lower standards at different times of the year and still achieve the same environmental outcome. This could reduce the costs of the solution the water company chooses.
7. The Water Framework Directive appears to be a good example of umbrella enabling legislation. It allows time for solutions to be implemented and recognises that there may be circumstances where costs could become 'disproportionate'. We agree that a similar approach should be taken as further environmental and water quality improvements are considered at the European level. However, in such a framework, how standards are implemented needs to be carefully considered not just by the water company and its economic regulator but also by government, and the environmental and water quality regulators.
8. If regulatory frameworks (both economic and quality) do not become more flexible, the lower scope for efficiency and more stretched balance sheets will inevitably lead to higher bills. This is not just undesirable; it is eminently avoidable. It is also the responsibility of those of us who make or implement government policy.

Appendix: Responses to questions in call for evidence

Strategic objectives of EU freshwater policy

The Commission states that the aim of future policy should be to ensure a “sustainable use of good quality water in the long term”. Would you agree that this should be the overarching goal of EU freshwater policy? What particular challenges should seek to be addressed by the policy? In the light of existing information on population and climate change trends, how long should the Commission’s “long term” be?

1. The sustainable use of good quality water in the long term is clearly in the interests of both today’s and future water customers and of society as a whole. True sustainability relies on appropriate consideration being given to environmental, social and economic issues. No outcome will be truly sustainable if any of these parameters have been unnecessarily compromised. Where compromises are required, there needs to be clear leadership from Government. Government may often be best placed to decide on any compromises that have to be made – but in taking these decisions, it is vital that there is appropriate engagement with citizens and a clear communication of the consequences either of doing nothing or doing something differently.
2. A key challenge will be to ensure that EU policy avoids prescriptive standards of performance that can lead to high cost, high carbon solutions. The policy should instead allow the space for Member States, regulators and regulated entities to identify innovative solutions that meet the required outcomes. It will also be important to differentiate between failures to meet outcomes that are the result of ‘recalcitrance’ on the part of the Member State, a regulator or a regulated entity and failures that arise as a result of good faith attempts to experiment with approaches that have the potential to be more sustainable (as defined above).
3. At the EU level there is a need to focus on developing an umbrella enabling framework: the Water Framework Directive is a step in the right direction. The role of the EU should be to map out the type and profile of standards that would be desirable across Europe. It should also be to hold Member States to account for delivery of the outcomes included in these frameworks. The EU should however avoid being too prescriptive and should allow individual Member States, their regulators and regulated entities to determine the most sustainable way of achieving the outcomes that are required.

How adaptable to emerging new challenges is the current policy framework likely to be?

4. We believe that the current economic and quality regulatory frameworks in the UK, while historically effective in delivering improvements, should be adapted to meet the challenges that lie ahead, including the need to deliver new desired outcomes such as reducing carbon emissions.

5. In future there will be less scope for efficiency either in operating costs or in capital expenditure. The water companies also face a more constrained financial environment. As such, customers' charges are likely more immediately to reflect increased environmental and public health standards required of water companies. There may also be higher costs associated with capital maintenance if better methods of delivering the required outcomes cannot be found. Our overview explains the steps that need to be taken in order to mitigate the upward pressures on bills.

How, and where, can the EU add value to the efforts of Member States in freshwater policy, including issues relating to financing? What aspects of the policy are best dealt with at Member State, or regional, level?

6. We believe there is an opportunity for EU policy leaders to establish a policy framework that recognises the importance of sustainable (as defined above) approaches to delivering improvements. It is for the Member State, regulators and regulated entities to work out the best approach to meeting the desired outcomes.
7. The EU should set a framework which allows for the development of new approaches to delivering sustainable freshwater policy. In Scotland, we have sought to encourage more innovative techniques such as catchment management approaches. We have also introduced retail competition, while encouraging a more collaborative approach within the traditional network and treatment business of Scottish Water. The emergence of retailers in the water industry in Scotland has brought a significant focus not only on costs but also on the sale of water services, including efficiency advice and the adoption of 'green' technologies. However, there have been occasions when too rigid a legal framework has led to one outcome being pursued to the detriment of at least equally important environmental outcomes and to the detriment of customers because of their disproportionate cost. Such instances can only make it more difficult to maintain a consensus across society of the need to pursue environmental improvements.

In the light of the challenges that need to be addressed, the importance of flexibility and the possibilities offered by the EU to add value, how do you think EU freshwater policy should change?

8. We believe that EU policy should focus on providing Member States with a freshwater policy framework that achieves a sustainable (as defined above) long-term approach to water use. The framework should allow the space for Member States, regulators and regulated entities to identify the most effective way of delivering the required outcomes. This is likely to include improved incentives to experiment with new approaches.

What particular EU initiatives would be helpful in tackling water scarcity and droughts? Should the EU promote awareness, assessment, and labelling of the water footprint of products?

9. The EU should focus on the desired outcome: whether that is for environmental benefits, production (including human consumption) or for amenity purposes. The challenges are likely to be very different in different areas within Member States and there is therefore a substantial risk associated with over-prescription. For example,

increased use of water from the London water table may be beneficial across all parameters of sustainability.

10. The introduction of a water footprint statement on goods sold within the EU could be misleading. If the water had come from the London water table, then it may actually be a good thing that the water footprint was high. Similarly, the amount of water used is not a particularly useful parameter in assessing local environmental damage. If the water comes from an area of some water stress then clearly there is damage that would be best avoided. On the other hand a good from an area of no water stress could have a relatively high water footprint but be doing virtually no environmental damage.

How can the EU's future research programme support freshwater policy and innovation in sustainable freshwater management most effectively?

11. The EU future research programme could provide significant impetus by facilitating the sharing of new and innovative approaches to meeting the required outcomes. There may also be scope for improving understanding of how environmental and water quality regulators could apply variable consents (either seasonal, weekly or even diurnally).

How should other EU policy areas, notably the Common Agricultural Policy and cohesion policy, be used and adapted to the needs of sustainable freshwater management?

12. We have limited knowledge of the specific impacts of other EU policy areas on sustainable freshwater management. However, it is clearly important that there is consistency across EU policy if the environmental and financial benefits of a more sustainable approach to freshwater management are to be achieved.

5 September 2011

Water UK—Written evidence

Water UK represents all UK water and wastewater service suppliers at national and European level. We are happy to contribute to the Committee's inquiry into EU Freshwater Policy.

1. Introduction

As part of its smart regulation policy, the European Commission is conducting a "Fitness Check" of the whole body of EU law. This means a systematic check that all EU laws meet their objectives in an efficient way. The area of water policy has been selected as a pilot area for this new process.

The objective of the Fitness Check is to assess the effectiveness of the policy measures taken, both in environment policy and in other policy areas, in achieving the objectives already agreed in the context of water policy and identify whether any gap needs to be filled to deliver our environmental objectives more efficiently.

The Fitness Check is looking at:

- any barriers (including in other policy areas) to meeting the already agreed objectives;
- issues related to implementation and measures that could improve implementability;
- coherence of the legislation in place and whether there are any overlaps, inconsistencies and/or obsolete measures.

The Fitness Check will lead to a "Blueprint to Safeguard Europe's Water".

2. Water UK's views

- 2.1 Within a Union of twenty seven states, it is increasingly apparent that a "one size fits all" approach, based on pass/fail target setting, is becoming less appropriate. We would welcome a move towards a more risk-based approach for policy making, allowing member states to use their judgement and local knowledge to ensure the overall objectives of legislation are met.
- 2.2 In Water UK's policy document *Meeting Future Challenges* (June 2010), we point out that introducing increasingly expensive improvements, for increasingly marginal environment benefits, runs the risk of reducing customers' willingness to pay, and unsustainably increasing the industry's carbon footprint.
- 2.3 The challenges of climate change and population growth could be addressed by revised legislation and policy. For example a revised Common Agricultural Policy (CAP) could link sustainable food production to water resources and water quality as well as land environments and habitats.

2.4 Much of the existing freshwater legislation sets defined standards which tend to drive end-of-pipe treatment solutions rather than promoting source control. Using end-of-pipe solutions to meet higher and higher water quality standards, with few appreciable benefits to biodiversity or customers, has a negative impact on attempts to reduce the industry's carbon footprint or the price of water.

2.5 The EU is currently identifying new substances for control under the Priority Substances Directive, and new environmental limits for some existing substances. In some instances the standards being proposed are exceptionally stringent. Some of these substances are ubiquitous in the environment, or in widespread personal use, for example, ibuprofen.

If these limits are adopted, costly wastewater treatment processes, potentially running to many billions of pounds, will be required for negligible environmental benefits. This is particularly of concern where discharges are upstream of protected areas, which are not covered by considerations of disproportionate costs.

In particular there is a lack of EU initiatives in respect of diffuse pollution. As a result, protection of drinking water resources from pollution is weak with most of the cost of dealing with the pollution met at drinking water treatment. There is a need for a better link between REACH and priority substances, which will encourage source control.

2.6 There is a need to re-examine old Directives which are not focused on achieving environmental objectives. In particular the Urban Waste Water Treatment Directive (UWWTD) may have economic ramifications for new members and may divert funds from projects with more direct environmental and customer benefits.

2.7 Waste water treatment will produce residual sludge and policy must ensure that these can be dealt with in a sustainable and cost effective manner rather than be restricted under waste legislation.

2.8 Water recycling and water re-use is an important area which the Commission has not properly addressed. A policy framework should be developed to give users and suppliers confidence in their operations.

2.9 There needs to be more clarity in the links between the Water Framework Directive and other Directives such as the Drinking Water Directive and the Habitats and Birds Directives to ensure that the aims of each are aligned.

2.10 The links between drinking water standards and environmental standards needs to be properly aligned. Drinking water standards should reflect health based concerns.

2.11 The Revised Bathing Water Directive is an important investment driver and policy should better reflect the need to control activities in the catchment which may impact on compliance. Water companies are concerned that the regulations within it could have significant economic and social impacts

- 2.12 The Shellfish Waters Directive is to be repealed and stakeholders are concerned about what will replace it. Shellfish farmers need confidence in their product and water companies need to co operate at reasonable cost.
- 2.13 There are important policy areas in respect of flooding which need to be addressed. In particular policy needs to be re-focussed towards sustainable flood protection schemes that work with, rather than against, the natural environment.
- 2.14 A revised CAP could also encourage the proper use of floodplains, to increase flood resilience, aid biodiversity and decrease soil erosion, among many other benefits. There should be more focus on sustainable urban drainage systems. Attenuation of surface water drainage will replenish ground water and reduce pollution. This is predicated on a better urban and rural planning regime which gives priority to land drainage and flooding issues.
- 2.15 Policy needs to reflect a better understanding of the need for and impacts of combined sewer overflows (CSOs).

August 2011

Water UK, Severn Trent Water and Thames Water—Oral evidence (QQ 24-51)

**Water UK, Severn Trent Water and Thames Water—Oral evidence
(QQ 24-51)**

[Transcript to be found under Severn Trent Water](#)

Westcountry Rivers Trust (WRT)—Oral evidence (QQ 183-203)

Evidence Session No. 7.

Heard in Public.

Questions 183 - 203

WEDNESDAY 1 FEBRUARY 2012

Members present

Lord Carter of Coles (Chairman)
The Earl of Arran
Baroness Byford
The Earl of Caithness
Lord Cameron of Dillington
Lord Giddens
Baroness Howarth of Breckland
Lord Lewis of Newnham
Baroness Parminter
Baroness Sharp of Guildford

Examination of Witness

Dr Dylan Bright, Trust Director, Westcountry Rivers Trust

Q183 The Chairman: Dr Bright, good morning and welcome.

Dr Bright: Good morning, thank you.

The Chairman: If I may, I would just like to do the formal part of this before asking you to speak giving us the general background of your organisation. You have in front of you a list of interests that have been declared by Committee Members. This is a formal evidence-taking session of the Committee. A full shorthand note will be taken. This will go on the public record in printed form and on the parliamentary website. We will, of course, send you a copy of the transcript and you will be able to revise it in terms of any minor errors. The session is on the record. It is being webcast live and will be subsequently available on the parliamentary website.

Dr Bright: So, some background on myself and the organisation I work for—I am Dr Dylan Bright. I am Cornish, born in Cornwall, and I grew up in a rural community working on farms. I took an academic path, first a degree in freshwater and marine science, University of London, MSc and a PhD at the University of Bristol in, again, aquatic science. Then I took a job with the Westcountry Rivers Trust, which is a charity based in the West Country, as a farm adviser initially. In the last five years I have taken over the directorship of that organisation.

The organisation was established in the mid-1990s as a result of a perceived lack of ability within the public sector institutions responsible for looking after rivers to do so effectively. It was initially fuelled by an interest in fisheries, salmon fishing, and the interests thereabouts, but it was very quickly realised by all involved that the declines were just a barometer signal of more extensive declines in the ecosystem. The ecosystem of a river is linked to every single inch of land in the catchment, and it was the activities on that land that were causing the problem, primarily intensive agriculture.

We originally did find the tools available through regulation and incentives to be very sectoral, focused on particular results, be they a species or a habitat or a production subsidy—all the tools available were very specific and sectoral. Sometimes they pulled in parallel; often they pulled in opposite directions. There was no rural spatial planning based on suitability of land. We found the regulation extremely complicated and I would go as far as to say not fit for purpose, because it cannot be enforced.

What we chose to do to solve that initially was to undertake something that is known in the literature as community conservation. Basically, we go and work with farmers, the landowners, and we find win-win solutions. A simple example of that is if we pay for a farmer to do a soil test on his land, we can say that the land has enough phosphate in it so he can shift from a compound fertiliser to a straight fertiliser without phosphate and save an awful lot of money and all that excess phosphate does not end up in the river causing eutrophication. That is a good example of one of the elements of advice we are able to give to farmers. We created a very extensive suite of advice, which has now been adopted by the national approach to farm advice called catchment-sensitive farming.

What we have recognised, however, is that there are limitations to what you can do. It requires voluntary uptake. The economic margins are subtle and so if you get a couple of bad Russian wheat harvests in a row, the cost-effectiveness of sowing wheat becomes very tempting and all the good advice and gentle learning and encouragement you have embodied over the years can be quickly forgotten. It has happened; we have seen subsidies for flax go up and whole catchments in the West Country go to flax, some of it not even harvested. We were worried that these large-scale global commodity drivers would overwhelm our subtle advice, so effectively what we could ensure was an increase in the economic welfare of the farmer but we could not guarantee the environmental outcomes that we were after.

We moved on to looking at what is called a paid ecosystem service model or approach, whereby we looked at what the land provided as a whole. If you take a catchment, it provides all sorts of things for society. It provides food, amenity, recreation and biodiversity. It provides water regulation: drinkable water, flood defence, drought defence, all sorts of other things. All of those things are known as ecosystem services and they have been encapsulated and described in the *Millennium Ecosystem Assessment*. What we found, just taking a coarse look at it, was that most of the land in the country is privately owned and farmed and the overwhelming ecosystem service is food production. That is because that is the only one that there is really a market for. The others have dwindled away in their importance because there is no market for them. What we have endeavoured to do is set up markets for other ecosystem services—private markets—by recognising the costs and benefits of looking after those resources at source. It has been very successful in its infancy and we have great hopes for the future. That probably brings you up to date.

Q184 The Chairman: Thank you very much. That was very interesting. If I may, I will take the first question. Really it is about water management in the UK. As a practitioner working with a variety of stakeholders, as you do on the river catchments, how do you view

the current arrangements for water management in the UK? That was the first question. The second is really what has been the impact of the Water Framework Directive on water management and river water quality so far and what is your assessment of its effectiveness?

Dr Bright: I think I will probably try to answer both at once. I think the Water Framework Directive was designed prior to this new language of ecosystem service provision and so, again, although it is overarching for water resources, it still sectoralises things a little bit. Water resources are viewed separately from biodiversity, flood defence, drought defence and the long-term stability of the things society needs. In a way, although it is much more integrated than what we had before, it is still lacking in that regard. I think the art or trick will be managing to deliver the Water Framework Directive but with this ecosystem service-focused approach.

The best example so far I have of this is our work at the moment with the water company in the region. We have been able to work up evidence with them to demonstrate that it is about 60 times more cost-effective to look after raw water quality pre-abstraction—in the rivers in the catchment—than it is to pay to filter that water post-abstraction with activated carbon or ozone. That is almost a no-brainer in its own right based on pure economics, but if you look at the additional delivery from managing water in its raw form in the catchment, if you balance it correctly you can deliver huge elements of our biodiversity aspirations, huge elements of our recreational aspirations, drought defence and flood defence simply by strategic catchment planning, by looking at all the ecosystem services and saying, “Actually, this area is very important for several things and at the moment it is being farmed heavily. If we could shift the incentives available so that area was looked after for its other capabilities and potential and move farming to somewhere more suited to it, we could deliver a lot more for society.” But it is this rural spatial planning and then the alignment of incentives that we found lacking. We also find that the regulation could be hugely simplified to deliver probably at least half of the aspirations of the Water Framework Directive, while losing some complex legislation. I can go into more detail on that.

Q185 Baroness Howarth of Breckland: This might be a useful time for me to ask my question about planning across the UK, because one of the things we have heard about rivers in Europe is that, because they travel through different countries, people do focus effectively on the river. In this country, it seems that there are similar issues about rivers that go through different water authorities and different local authorities, and that the planning is different in those different areas. You are obviously local in your area, but how do you think the focus can be taken so that the spatial planning and the obvious value that you have created in terms of thinking through some of the issues can be taken right through the water course?

Dr Bright: I probably live on one of the most proudly contested river-based boundaries in the country, being on the Tamar River, which divides Devon and Cornwall—Cornwall has a separatist approach to life. That issue is ever present in the centre of our patch, but we find that people are not overwhelmed by administrative or political boundaries. They quickly understand how they fit in a catchment and which catchment they are in. I found this new language of describing ecosystem services and where people fit within that model very liberating. I can talk to people like you and I can talk to a village hall full of farmers, and I can use the same terminology, or I can talk to a slightly unusual user group like the Exmoor Preservation Society, who have a very specific interest. It makes sense—you can see the light bulbs go on—so I think it is going to be an easy sell, but I think our boundaries for planning would sensibly be drawn at the catchment level. I think the Agency have pushed ahead with designating catchment units as land management planning units. How you give those plans a

democratic mandate, because all the governance structures are not set up to catchment boundaries, is by creating a new governance structure that has some recognition and validity. Lots of the economic tools I would like to bring to bear rely on those catchment plans having some backing, some recognition and a proper political mandate behind them. I think it is important to consider that. I do not think what we have currently limits what we could do. It would just require that we recognise catchment boundaries as a planning unit for rural spatial planning.

Q186 Baroness Howarth of Breckland: Just one tiny follow-up: in terms of the localism agenda and the house-building agenda, how do you get the political will to think through the availability of water and sewerage resources in terms of new-build development? There are obviously quite conflicting local interests.

Dr Bright: Again, the current tool for mitigating the impacts of development has been Section 106 agreements, which go alongside the granting of a planning permission. If you build a new Asda you obviously cannot avoid the impact of the footprint, so you seek to mitigate or compensate offsite. Currently, it is very unstructured. You can build a cob wall, a barn owl nest or all kinds of things that are quite high profile but not particularly strategic. If there was a local approved rural plan, all that Section 106 funding from development could go into the resources that look after that community and nurture it in a very subtle way, as well as all the other conditions of planning—for instance, the payment has to go towards local schools and the other infrastructure that would support that new development.

Q187 Lord Lewis of Newnham: You made a remark about recreational needs in a certain area vis-à-vis the possibility of farming within that area and deciding that, for instance, if the recreational area was suffering because of the farming, you would want to move the farming. How realistic is that and is this a planning issue?

Dr Bright: Quite often, the two can work very closely side by side. I think the spirit of the recommendations in the Lawton report has been lost in translation slightly. I think you need to deliver nature and these other resources within and around farming. I think you can have good recreational access as a simple overlay on areas that provide flood defence and clean water and nutrient stripping. I do not think the two need to be seen as one substituting the other; they can work very closely alongside each other.

I also think there is an accommodation in the farming community that this can work. Currently, because of the nature of the funding we have from the water company, we can only fund capital infrastructure on farms. On a dairy farm, we would look to encourage them to have at least six months of slurry storage to stop them having to spread slurry in the winter and so on. But we would also want them not to farm maize on a sloping field or not to farm right next to the river or several other conditions that we think are sensible to look after these other resources. We would link all those actions to the title deed of the land with what is called a restrictive covenant. We ask the farmer not to do all these things that we think are damaging. The only thing we pay him for is a one-off payment for the capital infrastructure, and in nearly all cases they are very willing to make that transition from farming that intensively to perhaps going to permanent pasture or even abandoning it, because you have recognised their income foregone by helping with that bit of capital infrastructure to make their farm, if you view a farm as a factory, one that is not leaking anymore—it is a proper working unit. In our experience, they are very willing to make those shifts and accommodations. They are a little intimidated by the paperwork, which frankly is quite complex, but the principle is absolutely fine when you have explored that.

Q188 Lord Cameron of Dillington: I would just like to ask a bit about the applicability of your ecosystem services on a wider European context. But just so I understand it, the money comes from the water companies, does it, that you are paying?

Dr Bright: In this instance, yes.

Lord Cameron of Dillington: Does the Government through the Environment Agency contribute at all?

Dr Bright: No. This is a completely private transaction that we broker. The model for this is a paid ecosystem services scheme and there are good examples from around the world and some of the lessons learnt define roles. For example, if we were just to let loose a water company to pursue its interests in a catchment without us as a go-between, there is nothing to stop you reaching an equally self-serving conclusion to the kind of food production situation we are in now. It could be completely set aside for water management, with no food produced, which would have implications for food security and other things. We would not want that to happen. What you need to achieve is a balance and so we act as an ethical broker between the market force and the provider of the service, the farmer.

Q189 Lord Cameron of Dillington: What percentage of the land do you expect to have some sort of control over within a catchment?

Dr Bright: We have looked at mapping ecosystem service provision in layers on to several of the south-west catchments. What we have shown is that you weight each layer from one to five—recreational provision, for example, has a weight in each area—and you get very interesting-looking maps. But what you get is a collective weighting of each area, so if you have 10 layers and all of them score five, some areas that are very important for all those ecosystem services will score 50, while others that are not important particularly for those ecosystem services will score zero. If you then overlay the farming land use, you see that in the scenario we have tried about 8% of the land that is highly valuable for all these other ecosystem services is currently intensively farmed. If I could, for example, redirect the CAP payment or the Pillar 2 of CAP payment, the agro-environment subsidy, I would direct it to those areas because that is a multifunctional area rather than the current over-focus perhaps in Pillar 2 biodiversity focus subsidy. Again, alongside some simplifying of regulations governing the single farm payment in Pillar 1—perhaps some very simple rules and very easily enforceable rules, visually enforceable rules—you could perhaps deliver a lot more than the current quite complex legislation, such as the soil protection review. I think you could replace that with two simple rules.

Lord Cameron of Dillington: But obviously, as you said, the way you do it is with a contract with a farmer so he is not tempted to go down the global food price changes and sticks to his contract.

Dr Bright: Yes, we lock him in.

Q190 Lord Cameron of Dillington: We have very short rivers in the UK. In Somerset, for instance, where I come from, all the rivers rise in the county and go to the sea in the county. It is all one big catchment. But in Europe, obviously, not only do you have much longer rivers, but also you have hundreds of thousands of very small farms, farming two, five, 10 hectares each. I am just wondering how you thought you might apply the system you have within a European context.

Dr Bright: Excepting the specific example of rivers like the Danube that flow through several countries before they reach the sea, and many other rivers, I think all the principles are applicable. I think it can be translated. Where you have a river that flows through several countries, obviously the country downstream inherits what it gets from the country upstream. In a way, they can only really be judged against what they start with as opposed to what they finish with. It would be very unfair to say the river is failing the Water Framework Directive when it was failing the Directive's standards when they got it and they had actually had to filter the water and clean it to make it any better. I think you would need international agreements about these undertakings, but several of them are—

Lord Cameron of Dillington: But it would be very, very complex. As for the Danube, for instance, most of Germany is the catchment and there are probably millions of small farmers. Do you have a contract with each of them or do you pick and choose? I do not know how you would make it work.

Dr Bright: Once you undertake this planning exercise, you focus in on those that control these specific areas that are currently put to intensive agriculture but could deliver many other services. You can quickly focus in on those with these modelling exercises. You would still have lots of contracts with lots of private landowners but it would not be across the whole landscape. It would be restricted to those very important areas. In other areas, you could perhaps even sustainably intensify food production because those areas were suitable and it would not cause exports of problems and issues to other areas.

Q191 Lord Cameron of Dillington: The second question is this. You say that, within the UK and under our current governance arrangements, you do not receive any support from the Environment Agency, although I suspect you get moral support. Well, one hopes you do. I am just wondering whether you would see any necessary changes in our governance arrangements to make the system work effectively throughout the UK.

Dr Bright: We need a simplifying of regulation and enactment of that regulation. I could take you five minutes away from our offices in the West Country and show you failure after failure in regulation, partly because it is too complex and partly because I think the regulator is distracted from their core duty by doing a kind of an outreach role. I think my advice is much better received if there is a strong, visible and effective regulator out there. People are very keen to talk to me if there is a big stick on the other side of the carrot, as it were. It would make my job much easier if the regulator did good regulation and the regulation was simpler. I have some suggestions for how that can be achieved. That is one change. The other change is we—

Lord Cameron of Dillington: Could you let us have those, if you have some examples, in writing?

Dr Bright: Yes, I can propose them in writing. The other side is the incentivisation. There is currently a catchment restoration fund, which has been put in place largely due to pressure from the threat of a judicial review over the implementation of the Water Framework Directive, but it is a big fund and everyone has suddenly become interested in the word “catchment” and farm advice. It is achieving an effect. Not to be flippant, but I see that as throwing a fish to us to eat; we will eat for a day, while I would rather have a net and an active fishing community. By that I mean I would like the Government to support us, putting in place the economics that cause this local flow of money into the approved and adopted catchment plan. We have several mechanisms that we would like to pursue for that. The water company giving funding towards it out of their own economic self-interest is a great

start. There is a whole carbon market out there—a statutory carbon commitment—that currently does not allow offsetting regionally. If a small proportion of that carbon reduction commitment could be put to offsetting, we could deliver several directives—the habitats directive, the Water Framework Directive—with the funding going into the local plans.

There are other options if we could streamline the planning system so that it supported the locally approved sanction plan. There are visitor payback schemes, for which the approach could be the sanctioned plan. We properly weight our incentives to be multifunctional and we have some government support and sanction to develop these local economic tools to get funding flowing into those plans. That for me is a permanent, robust solution. Everyone is operating out of an enlightened economic interest and we are acting as an ethical, not-for-profit broker making the transaction with the farmer simple, because you cannot have hundreds of people dealing with farmers trying to get different things. We have to make sure it is balanced so if there is an overwhelming market force like a water company, it does not unbalance the system in the opposite direction. Simplifying of regulation and helping us enshrine the economic tools to create these local hypothecated routes for funding to go into catchment plans, that is my—

Lord Cameron of Dillington: Just so that I am clear, because I think you did hint at this, you would like to see the encouragement side separated from the regulation side, because “I am from the Environment Agency, I am here to help” is probably the biggest lie any farmer ever hears. I think that is what you have more or less said.

Dr Bright: Yes, I think that in every academic paper I read that covers this subject and in every case study I look at, particularly coming from America, it is almost constitutional to separate guidance and judgment, right back to separating judge and jury. I think you need a very strong regulator and that makes the advice much more inviting to adopt.

Q192 Lord Giddens: You mentioned examples from around the world. I just wondered whether you could send us one or two cases of what you regard as best practice using a similar approach, especially if one or two happen to be in EU countries. That would be really helpful.

Dr Bright: There are some good approaches in France and Belgium that I can send case studies of to you.

Lord Giddens: Would you be able to provide some references?

Dr Bright: Yes, we have studied a few. We have been working with several universities on a project called the RELU project—rural economic land use project—and within that we have studied examples of successful paid ecosystem service approaches from across the world. There are several good examples in Europe. There are several in America and a couple in Australia, and that stretches from the whole planning right through to the economic tools. I will send you examples.

Q193 Baroness Byford: Can I thank you very much for your presentation? It was very good. I have two basic questions then a follow-on, if I might. I nearly interrupted my friend—I did not mean to, but you spoke about the contract with the farmers. The natural question is obviously: how long a contract is that? What is the length of period?

Dr Bright: We are actually enacting at the moment a 25-year contract because in financial depreciation terms that is how long the asset we buy them takes to depreciate to zero. We

enact a 25-year contract, which if you compare it to an ELS scheme is proper long-term kind of management.

Baroness Byford: It is.

Dr Bright: That is generational as far as people are concerned. We have also consulted with large representative groups of farmers about different length contracts. Initially, we were looking at redirecting carbon payments to make the land transitions we were after because there are voluntary carbon markets that we could still use, even though the statutory carbon market is not able to do it at the moment. We got costings ranging from £4,000 to £20,000 per hectare to take land out of production in perpetuity—so for ever effectively—if we felt that that drastic a solution was required. Obviously, you do not want to do that across the board. In some areas you just do not want them to do invasive farming; in other areas they can farm quite intensively. But yes, that is a proposition that farmers will entertain. They still own the land. We find the big mental hurdle is breaking up a holding. If grandfather farmed the land through the war, for example, and he did not have to break up the holding, there is a momentum not to want to do that. We keep the holding intact, we just have covenants over certain parts of it—some of them perpetual, some of them shorter-term—to deliver this wide range of ecosystem services. The farmer can still do things on that. He can rough-shoot across the land, allow recreational access or just enjoy it for what it is. It is not that restrictive. It is only restrictive over the specific operations we feel are damaging.

Baroness Byford: On that, are they mostly fields that come very near to the water catchment area, or how far do you go back? Are you talking about taking a quarter of a farm away? How does it work?

Dr Bright: It depends on the area. Basically, the water flow through a catchment works in these areas that are variably wetted and it is not always alongside the river. It is a buffer zone—

Baroness Byford: It can be further inland?

Dr Bright: Yes, the value of land alongside rivers is generally as biodiversity corridors. If you are looking at water regulation and protection, it tends to be wetted patches of land that coalesce into ditches and gullies and enter the river. It is an assortment of areas, some of them quite far from the river. But we can model the hydrological connectivity of any bit of land to the river, and so we know the areas in which we need to operate to increase wetness to prevent flooding, et cetera. We can focus in on the areas we need to, but they are not always alongside rivers.

Q194 Baroness Byford: One more question and then the proper question. Are you the only organisation doing what you are doing or are others in the country like you?

Dr Bright: There are other examples but—I would say this, wouldn't I?—they do not fit the ideal model as well as I think they should. For example, Wessex Water are doing a very good job trying to improve land management to decrease nitrate in groundwater. They are a groundwater-dominated area; they have issues with nitrate in groundwater. I think that lacks the honest broker role because, again, if the—

Baroness Byford: It is going directly between the two.

Dr Bright: Yes. If the cost benefit stacks up, they could take the whole of the Frome and Piddle catchment out of production, for example. I think you need to balance these things

and you need someone to consult with people and come up with a balanced plan. It has to accommodate some high-level ideas: how food-independent does this country want to be and what is the prediction of population growth and climate change? We need those high-level controls around it.

Q195 Baroness Byford: You do. Right, my proper question is about the fact that yesterday the Government announced they were going to put £1 billion into waterways and rivers. Do you think from your experience—this is welcome and maybe it would be something that your organisation would be able to use—there is a “joined-upness” between what is currently happening on the Water Framework Directive, what is happening at source and what you are trying to do? Or do you think that there is an awful lot of little bits happening but it is actually not linking together?

Dr Bright: I think there is still quite a lot of sectoral thinking. If you look at Natural England’s agenda, it is to do with creating more restricted areas, more SSSIs, which could be one interpretation of Lawton’s recommendations; mine goes a little further. That is again species and habitats directive focused. You have the Drinking Water Inspectorate, things that need to be delivered for human health, World Health Organisation-enforced issues. You have Water Framework Directive issues still separate from flood defence issues and abstraction issues. I think there still is a long way to go to bring them all together and I think the ecosystem service approach is how you would go about doing that. I think the model of paid ecosystem services achieves those aims of the big society. It is decentralisation. It is local economic circuitry. It is local planning.

Baroness Byford: That is why I wondered if this may well be—

Dr Bright: I hope it goes that way. Again, we are a hard-up local charity so I will never apologise for being delighted that some funding is there, but I genuinely would rather see and have some support to develop the economic circuitry that will allow us to do it out of people’s enlightened self-interest. The hidden agenda there is social learning. People are disconnected from what they get from the environment and how it nurtures them. If they see that a local tax is going to the water company into the environment and other elements, you change that social norm and people become reconnected. This is an unchartered deliverable, but one thing that I think is incredibly important is that connection with the landscape.

Baroness Byford: Which hopefully this will achieve as well.

Dr Bright: It engenders it. It points us in the right direction.

Q196 Earl of Caithness: To follow up on your answer to Baroness Byford just now, the farmer in many ways is the easy target. They have the catchment area. How do you deal with businesses and developers, because there will be huge demand to increase urban development in the West Country? How do you talk to the local authority, the planners and developers and existing businesses?

Dr Bright: Yes, I think businesses that perhaps create point-source issues in water companies have been quite well regulated and have responded very well, so industry has responded very well to the regulation because it is a lot simpler to regulate those point-source issues.

In terms of development, there is an equivalent method of planning in urban situations using, again, spatial planning tools where you look at the distance of housing from green space and

you look at the travel time between those areas. I think the planning structures are there for urban areas. They are not often enacted as effectively as I think they could be and at the moment they do not link up with the wider delivery of services from the catchment upstream, normally of the urban environment. There needs to be a link between the two and there needs to be an economic link between the two. You do not just want to build your house and then, as I say, build something next door that is high-profile and visible. Part of the mitigation needs to go into the wider landscape around that that nurtures the people who are going to live within the area of that development. That probably sounds like a bit of a woolly answer.

Earl of Caithness: All the good work that you are doing could easily be undone by a proposed development because current regulations do not deal with the dirty water satisfactorily. There is a big development going in at Boscombe Down, as you know, which is causing a lot of problems for the water in that area. A lot of your good work can be undone because there does not seem to be a mechanism for tying up the second leg.

Dr Bright: Yes, I think I agree completely. It is about the wider recognition. Again, I think the ecosystem service description of what we get from the environment will help because if you describe the impact of that development in terms of ecosystem services, you can then direct compensatory actions directly to the services that are affected rather than to grandstanding services—visible responses. It would be a much more sensitive way of linking the impacts of development with the provision of those services, I think. Yes, I agree it needs a link. I do not quite know how, as I am not so au fait with urban spatial planning, but there definitely needs to be a link.

Q197 Baroness Parminter: You have said a little bit about those services where you think there are undeveloped or missing markets. You talked a bit about carbon targets. Do you think there is a possibility that you could come up with almost a standardised delivery mechanism that dealt with all the issues around carbon, water and landscape and, if so, do you think there is a role for Government, be it European or national, to help facilitate that? Or do you think that is just completely impossible?

Dr Bright: We have been awarded a catchment pilot by the Environment Agency to undertake the spatial planning as we see it should be done. We are going to plan in a very integrated way. We have the tools to do that and we will do it in a community context and we will plan the spatial delivery. What we will come up with there is a weighting that is relevant to all the incentives available. What we would need to do to respond to that is to say, “Yes, you can locally administer CAP subsidy,” or, “Yes, you can locally administer development offsetting”. All those funds would have to be locally directed into that plan. The planning is no problem. The tools exist. The mechanism exists. The wisdom and the acknowledgement of its relevance exist. Again, turning it from a plan into something you can deliver requires a shifting of those economic incentives that are out there to target the plan, rather than what happens currently, which is that there are lots of, for example, green taxes on landfill or aggregates levy. They are limited to within a certain area around those sites. They are normally focused on high-profile biodiversity issues. Those kind of green taxes again could be directed into this kind of multifunctional delivery.

Lord Cameron of Dillington: What river is this pilot scheme on?

Dr Bright: The Tamar in the West Country. Again, we picked one that straddled two governance regions to exemplify the point that it is the catchment boundary that is the

significant one for planning. We want this plan to have a democratic mandate that transcends the regional planning structures.

Baroness Parminter: Who is funding the pilot?

Dr Bright: Defra directly are giving us some funding towards the pilot. I do not think they originally intended to, but we did put quite a solid case towards them to do that. I think it is very important. I just hope they have the will to adopt the plan and give us the economic tools we need to enact it, to make it a proper trial, because not only will that be the right thing to do, but I think we are going to have lots of very ticked-off stakeholders if we just make another plan and do not do anything with it. I have warned them of that, though.

Q198 Lord Lewis of Newnham: It sounds a little bit like the road to Damascus, if I may say, the fact that Defra is doing this, because in a sense you seem to me to be the carrot whereas, of course, the polluter pays principle is the stick that was very much the sort of technique that was employed by Defra in the past. How do you find this relationship? I say immediately that your approach is more attractive to me, but there is the feeling that, if you do start the pollution in some way or other, you ought to be responsible for rectifying it.

Dr Bright: I agree. Regulation has a role to play and the polluter pays principle is completely relevant. It is harder to prove in agricultural situations because there is generally a summation of lots of small issues, perhaps on different areas of land. Just for the sake of having an alliteration to combat ‘polluter pays’, or at least to stand beside it, I like to quote “provider is paid”. If you look at the fact that the polluter is paying, if they can get regulated, for the impact they cause, I think society also needs to pay them for the services they provide. I think there is a balance there and it cannot all be stick; some of it needs to be carrot. I think a proper economic recognition of what society gets from those other services that are provided or polluted by landowners would allow us to either prosecute them or recompense them for where they are. We are quite a long way down the line of under-investment and under-regulation. We are starting from quite a shocking position out there in the wider countryside. If we are going to put in strong and simple regulations and a balanced incentive mechanism, we will need some transitional funding, because we still want to farm in the countryside. I want to see a legacy of living, working landscapes that produce food but are rife with biodiversity in every corner, not just in SSSIs and protected areas. I think there is a balance and both are relevant.

Q199 Lord Lewis of Newnham: Could I be just quite clear? From what you have said previously, do I gather that really you are unique in this respect? After all, we have, what, 10 river basin management areas in England and each of them is in a sense unique. It seems to me the suggestions you are employing would not be appropriate to, say, other areas. Although the principle may be, the actual detail would not be. How far is this being projected into other areas?

Dr Bright: I think Ofwat will be key because Ofwat need to agree that the bill payer’s money can be spent on this slightly abstract activity and they need to acknowledge that this is an effective spend of the money. Ofwat are key in this whole debate. Nearly every water company now is very keen to see this done. It really is an economic self-interest issue, but also there is a very good environmental story to tell, so they are all very keen. We are the largest and the oldest rivers trust in the West Country, but there are now 40 around the country and we have a national umbrella organisation. They are really popping into existence to fill this vacuum: not-for-profit, catchment scale, ethical broker. I think if we were able to create the economic wiring by example, perhaps first in the West Country, it would create

the organisation that was the right shape to deliver in other areas. They would pop into existence. We do not need much light to grow in the third sector.

Q200 Baroness Howarth of Breckland: I think my question has been partly asked by Lord Lewis, but something you said made me just think about the behavioural changes that you are trying to achieve. You have just described some of the levers and the pressures in terms of that behavioural change and you mentioned the need for education. Again, you have just described it as a rather “obscure”, I think the word was, or—

Dr Bright: Yes.

Baroness Howarth of Breckland: Are you doing more to make this more explicit? Being implicit in all that you are doing does make it rather vague, but actually it is a fairly concrete piece of work in terms of being clear that behavioural change needs all these different levers that you have just described to Lord Lewis.

Dr Bright: Yes, again, I think the model is that you have the providers—they are the landowners who manage it for better or worse—you have the broker in the middle and you have the beneficiaries. We are all beneficiaries of these ecosystem services, some of us in a very indirect way—we just pay our water bill or we buy food—and some of us in a more direct way. There is an important role for those beneficiaries. They need to approve of the fact that a pound of every water bill is going into catchment restoration. They need to understand why that is relevant and cost-effective. The water company do quite a good job of that and they happen to be a very good local tax collection system to be able to carry that through within a region.

As for people’s wider valuation of ecosystem services like biodiversity, you are not able to monetise these things sensibly. Biodiversity—the maintenance of biodiversity—is a barometer of a functioning ecosystem, but we have taken a philosophical stance to say we want to maintain biodiversity. That probably needs to be what is called an economic free rider. It is something that the ethical broker considers when they are designing a catchment plan and makes sure it is accommodated within the linkages and things you do in the plan, but it is something that is never going to contribute financially directly because it is very hard to create a market for. You cannot shake the tin to everyone in the country for their valuation of an otter. It becomes very esoteric. But what you get with this local economic circuitry, what tends to follow payment, is valuation and if people see clearly what they are paying for locally, then basically they start to value it.

There are lots of other subtleties to this. For example, what we are currently doing in economic terms is called externalising the cost of what we are doing. A good example is with food. We buy food off the shelf and we pay there. We pay our European membership cost, which comes back to us in CAP, some of it. We also pay a colossal clean-up cost through the Environment Agency or whoever. We are paying three times right there for food. That is because the initial cost of that food production is externalised and not picked up at the supermarket. If all those costs were in the front-end cost of food and if we paid more for our food but it was farmed in a friendly way to all these other services, it would be a much more positive model. Everything would be working fine and we would not constantly be playing catch-up and clean-up. That again requires social learning, though, because it is a consumer habit you have to change and that comes with education. It does not take much of a squeeze on the budget or the purse to look for the cheapest thing in the supermarket rather than the ethically right thing. Yes, I completely agree, it is a hugely important thing. I

think what we plan to do fosters it much better than the current or previous systems, but there is an awfully long way to go as well.

Q201 Earl of Arran: Just briefly, to go back to pollution, pollution by agriculture or by farmers has always been a worry. Is that improving at all or is it worsening? What is the situation about pollution?

Dr Bright: I think it has gotten steadily worse over time. The farms I go on in the West Country have parlours designed for 50 stock and a mixed farming background, and because of drivers like the milk price, other commodities and supermarket negotiating power, they have had to farm more and more on a system that cannot support it. Most farms I go on in the West Country have about two weeks' slurry storage at the moment, which means they are out all the time over winter spreading slurry. They are compacting and ruining their soil. They are wasting the nutrient that resides within that slurry because it just washes off the land. Had they had the proper investment through the milk price as they went forward and some proper guidance, we would not be in that situation. It would have been cost-effective all round. Yes, I think we have been in a steadily worsening situation and that is why I think it is very important to turn it around.

Earl of Arran: I agree. I think the milk price is very much at fault in particular.

Dr Bright: Yes, it has been. There are very strong negotiating groups dealing with individual farmers.

Q202 Baroness Byford: I should have thought of this at the time, but how long a stretch of the river or area do you cover? Where are you going from and to?

Dr Bright: Basically, if we are working in a catchment we go from source to sea and we try to get involved with 100% of the landowners, so 100% of the land coverage, because the kind of delivery we need requires a bit of action from everyone and a lot from a few. We have to work on those scales simply because at the bottom of the river, if you take a cupful of water, there are probably molecules of water from every single inch of that catchment, so you have to deal with it on those scales.

Q203 Earl of Caithness: In your evidence to us you said that the interests of water are best served by the EU setting overall objectives for member states and best done at national level. If the current Water Framework Directive, which is basically chemical-oriented, is not the right way forward, do you have a definition that would be accepted throughout Europe of good water quality?

Dr Bright: I think I do. It is technical but—

The Chairman: Perhaps you could write to us.

Dr Bright: Yes, I could possibly write it down.

The Chairman: Would that satisfy you, Lord Caithness?

Earl of Caithness: That would do, yes, because when I asked the Consumer Council for Water last week they did not have anything to help us.

Dr Bright: It would probably be knocked around between academics. It would start off as my opinion and be melded, but basically you look at ecological function, which was what the Water Framework Directive was supposed to do. Where it went wrong is that we tried to

retrofit the aspirations of the directive on to what we currently did. We basically do monthly chemical monitoring and we drew correlation drawings between chemical levels and ecology. We carried on our monthly chemical modelling and used the correlation diagram to say what that meant in terms of ecology. I can see why it was done. The skill base was there. The sampling regime was there. But it was a retrofit job rather than a forward-looking, “This is how we are going to assess ecology and ecosystem function”.

Earl of Caithness: Can you send in your thoughts?

Dr Bright: I shall.

The Chairman: We have kept you a long time, but if you have any thoughts on whether there is any other ethical organisation in the EU, we would be pleased to hear about it, and also any thoughts on how specifically Pillar 2 might be used in the sort of work you are trying to promote. We are looking for direct linkages that we could focus on and work. We would appreciate that. As you sense, it has been a most stimulating session. On behalf of the Committee, thank you very much.

Dr Bright: Thank you very much for your time.

Westcountry Rivers Trust—Supplementary written evidence

Q191: examples of how the regulator could change behaviour

Rivers Trusts have been key stakeholders in the implementation of the Water Framework Directive and we have been working closely with the Defra Water Policy Unit to improve delivery. This has largely focussed on trying to improve coordination of all the funding streams for incentivising land management change, so that they can be focussed on areas which deliver multiple ecosystem services, rather than the current situation where different ecosystem services are funded by different incentive schemes which rarely work in concert and often work in opposition.

This approach will give more effective delivery of the needs of society from land, through financial incentivisation. We feel however, that regulation is currently also suboptimal. Many elements of the Water Framework Directive, the Habitats and Species Directive, Bathing Water Directive, Shellfisheries Directive and WHO/DWI drinking water standards could be met and infraction fines avoided, through a simplification of legislation, as follows:

The Soil Protection Review (SPR) is currently not efficient, not enforced and failing to deliver. The SPR could be replaced by four simple rules which could be inspected visually without reference to records:

1. Maize Harvest by 1st week of October and Chisel plough within 24hrs.
2. Slurry – 5 months storage minimum (will need transitional funding).
3. No grass reseeds after 1st week of October.
4. Stock access to rivers must be controlled

We feel transitional funding would be required to deliver number 2, but we feel that the costs avoided in infraction and in repairing environmental damage would more than offset the cost of this very long term solution. In addition to refocussed incentive schemes, this reduction in regulation represents an important step forward in our ambition to live more sustainably on the land.

Q192: examples of good practice

Attached are PES examples from the EU.⁴¹ More are available from across the globe.

Q203: definition of water quality.

We feel that water quality objectives at present are only quasi-ecological and are based mainly on an incomplete network of monthly point-source samples which will detect chronic point-source pollution, but not diffuse acute pollution which is a primary characteristic of agricultural pollution. We feel that much more use and emphasis should be put on the available suite of biotic indices for macro-invertebrates. From two annual kick samples one can estimate levels of pesticide pollution, organic pollution, flow abnormality, sediment pollution, acid pollution among others. All of these measures are inherently time integrated so pick up the peaks and troughs and biologically relevant; there is also a base line of results from pristine sites to which these results can be compared to give an observed over

⁴¹ The examples are taken from a publication “*WaterCost: elements of cost-effectiveness analysis*” (2006).

expected ratio. Failures can be followed up with using telemetric (live reporting) probes called 'sonds' which will focus an investigation team in on the source of the problem. Currently macro-invertebrate samples are collected periodically and only one pollution indice is calculated.

Fish are currently used as an index of ecological health. However fish may be absent from a site for many reasons, some of which are very remote in time and space and so their absence is not a good measure of local ecological health. The issues affecting fish locally are often access through the river system which should be addressed through river morphology failures, which again is incorrectly weighted with regard to its relevance for ecological health. Further, sediment is not included as a primary metric in WFD but is the cause of many if not most of the ecological issues in the SW of the UK. Riparian invasive weeds are also excluded as a direct measure influencing WFD ecological status, which overlooks the fact that the health of most rivers is intimately linked to their riparian corridor for energetic supply and for morphological character.

In summary, much more use should be made of true bio-monitors rather than point sampling, and several vital metrics of pollution have been excluded. In my more cynical moments I feel that this is the case as a result of a desire to carry on as before with a flawed monitoring approach with an ecological gloss. I made all these points to the UK Technical Advisory Group during the development of the WFD standards as did many other practitioners and groups of experts.

9 March 2012

World Wildlife Fund (WWF)—Written evidence

Strategic objectives of EU Freshwater Policy

1. The freshwater resources and ecosystems of Europe have been suffering from a series of serious long-term impacts. These impacts include pollution from agricultural chemicals and run-off, pollution from roads, towns and cities, over-abstraction of water, and physical modifications to our rivers, lakes and wetlands. This is reflected in the health of our freshwater ecosystems: in 2010, only a quarter of rivers in England were classed as 'good or better ecological status'⁴².
2. In recognition of the extent of these problems, a series of European Directives were introduced between the 1970s and 1990s. The most important of these included the Urban Waste Water Treatment Directive (91/271/EEC), the Freshwater Fish Directive 2006/44/EC (adopted in 1978 but consolidated in 2006), the Nitrates Directive (91/676/EEC), the Bathing Waters Directive (76/160/EC), the Groundwater Directive (80/68/EEC), and the Shellfish Waters Directive (79/923/EEC).
3. These Directives have been responsible for driving considerable progress in some areas, including redressing the legacy of under-investment in sewage treatment capacity in England and Wales. However, we believe that these alone are insufficient to redress the long-term decline in Europe's freshwater environment. A number of key problems remained unaddressed by the Directives mentioned above, including diffuse pollution from agriculture and urban environments.
4. The Water Framework Directive was introduced in 2000 with the intention of bringing coherence to these disparate Directives and imposing firm timetables for reversing the long-term decline in Europe's freshwater and coastal marine environment. The headline objective of the Directive is the achievement of good ecological health in Europe's freshwater and estuarine environment by 2015, requiring action on pollution, water use and ecological restoration. Because of its scope and ambition, we believe that the Water Framework Directive is one of the most important pieces of European environmental legislation ever passed.
5. The focus on ecosystem health under the Water Framework Directive has required the development of a more comprehensive picture of the health of our freshwater ecosystems than we have had before. The headline objective is revolutionary, focussed not just on particular pollution levels or standards of water use, but also the health of populations of plants, insect, and fish.
6. It is difficult to overstate the importance of the Water Framework Directive if implemented correctly. Not only does it require us to look at, and seek to improve, the ecology of our waters for the first time, it also encourages sustainable approaches to water uses. If implemented correctly the Water Framework Directive will help to ensure that the way in which water is used and managed is sustainable and secured for future generations. As such, we believe that compliance with Water Framework Directive should be at the heart of any overarching goal of EU freshwater policy.

⁴² 26% of rivers in England are in good or better ecological status – Environment Agency, RBMP Classification update, 2010.

7. We believe that implementation of existing policy is the greatest challenge to address. Much remains to be done to achieve the objectives for water dependent Natura 2000 sites designated under the Birds (79/409/EEC) and Habitats Directives (92/43/EEC), as well as the Water Framework Directive (as outlined below).
8. The Water Framework Directive requires that these ecosystems achieve good status by 2015, defined as deviating only slightly from those found under undisturbed conditions. Importantly, the Directive also introduces timeframes for the delivery of water-related objectives in other key Directives, such as water dependent Natura 2000 sites designated under the Birds (79/409/EEC) and Habitats Directives (92/43/EEC).
9. In recognition of the scale of the challenge and its status as a framework, the Directive recognises that some exemptions to the achievement of good status by 2015 may be necessary, under a series of conditions that are tightly defined in the Directive. These permit, under certain circumstances, the extension of the achievement of good status to later deadlines of 2021 or 2027; the possibility of establishing less stringent objectives than good status; and, some exemptions for the achievement of objectives for some biological quality elements in the context of water bodies that have been heavily modified for purposes such as flood defence or harbours.
10. In recognition that extended deadlines will be required for some water bodies, the Directive envisages two further 'rounds' of river basin planning, leading to the publication of an updated second River Basin Management Plan in 2021 and a third River Basin Management Plan in 2027.
11. The River Basin Management Plans published by Defra in December 2009 were intended to form the centre-piece of the implementation of the Directive in England and Wales. It is our view that the Plans, as published in 2009, quite simply failed completely in their primary purpose of setting out clearly how the Government would meet the objectives of the Water Framework Directive. The descriptions of the conditions of rivers and lakes often bore little relationship to the known reality on the ground. Well known problems were ignored or unacknowledged. The plans contained few new measures for any of the main polluting sectors other than water companies (who contributed to the majority of actions through the parallel price review process). Other new measures consisted of largely ongoing actions that would have happened regardless of the Directive and low cost voluntary measures with no evidence to prove their effectiveness or good reason to believe they would be sufficient. There was no description of how the good status objectives would be achieved over the 3 planning cycles to 2027. It was also not possible to identify the actions that would be taken for most water bodies or to understand their effectiveness, meaning that it was effectively impossible for even those most familiar with the Directive to understand what was being proposed for any particular place, or when.
12. The lack of action was illustrated by the ambition set out in the plans. These anticipated that the percentage of water bodies at good status by 2015 would rise from 27% to just 32% across England and Wales. The plans envisaged that the vast majority of improvements in water body status were anticipated as taking place between 2021 and the final 2027 deadline, but provided little to no clarity on how this sudden achievement of good status would be achieved.

13. Our view is that, despite the requirements of the Directive, the Government (with responsibility for England and Wales) failed to develop and set out in the plans a coherent policy and accompanying set of actions for dealing with the key pressures on freshwater environment, including over-abstraction, agricultural pollution, and diffuse urban pollution. We believed that this failure to implement the Directive was justified by inappropriate use of the tightly defined exemptions that are contained with the Directive and this was the basis of our application to the High Court to judicially review the River Basin Management Plans in 2010.
14. After renewed and extended talks with Defra and the Environment Agency, we were pleased to achieve a settlement in early 2011 on the basis of new Government commitments that will go some way to address our concerns⁴³. The main commitments included: £110 million of new investment in environmental water quality; a shift to more localised, catchment-based implementation including a summary of measures and timetables in the second cycle of the River Basin Management Plans; significant investment in identifying the reasons for the decline of many of our freshwater ecosystems; more vigorous enforcement of existing regulation, in particular regarding diffuse pollution; a commitment to introducing stronger future regulation if existing regulations and voluntary measures are insufficient. As such, we withdrew our legal action.
15. While we are optimistic that these new Government commitments will progress proper implementation of the Water Framework Directive domestically, we feel that the ‘implementation challenge’ should be addressed in future EU policy.
16. Good quality water resources and healthy ecosystems are the building blocks for life. As such, “sustainable use of good quality water in the long term” should be indefinite. Pressures such as climate variability and change, land use change and population flux and growth are all characterised by uncertainty. Instead of trying to predict and provide for very specific futures outcomes, we need to acknowledge this uncertainty and develop water policy that is resilient to a wide range of scenarios and can respond and adapt as the future unfolds. Future water policy should also promote ‘low regret’ measures such as water efficiency as a key tool in adaptation.

Adding value

17. As mentioned above, European Directives have been responsible for driving significant improvements in domestic water quality via investment from the water industry. In terms of future added value, we believe that clear common objectives will help secure domestic political attention and investment, driving further improvements in environmental quality and securing water resources and other ecosystems services for people. In addition, we believe that there are also huge opportunities for adding value by aligning CAP spending.

Future policy

⁴³ These commitments are the basis of Defra’s Statement of Position, launched by the Minister and published at the Water Stakeholders Forum on 22 March 2011.

18. The EU Communication on Water Scarcity and Droughts shows that many Member States, including the UK, are still some way from adopting a sustainable water management system. In England and Wales, our current water allocation regime has not sufficiently addressed the legacy of historic, unsustainable water abstraction licences. Low river flows due to unsustainable levels of abstraction, are unable to support good ecological status on 11% of water bodies; a proportion that is only likely to increase in the face of increasing demand for water unless policy is changed.
19. Proper implementation of the Water Framework Directive would force Member States to develop sufficient and sustainable water allocation, pricing and management systems and proper drought planning (including non-essential use bans). All of these are essential steps in tackling scarcity and drought issues. Better integration of hydrology, flows and scarcity into the Water Framework Directive would also be beneficial (at present, hydrology is only a supporting factor to meeting good ecological status).
20. We believe that more emphasis is needed on water efficiency across the whole water supply chain, coupled with a water allocation regime that secures environmental water flows. The EC Communication of Water Scarcity and Droughts included the need for a water hierarchy that requires efficiency measures, water resources and drought planning before the development of new resources and taking more water from the environment. We support this approach both in terms of reducing pressure in areas like the south and east of England where water scarcity is already a real issue but also as ‘low regret’ adaptation measure. We believe that any water efficiency target should consider the total volume of water abstracted as well as scarcity (reflecting the time and place of abstraction).
21. While we believe that water efficiency standards for products (such as toilets, taps and showers) and labelling should be a feature of future policy, this is a minor issue compared to the fundamentals of allocation, pricing and adaptive management.
22. Future EU water policy should phase out all phosphate detergents, which will benefit not only the environment but also citizens and progressive industries. It should also include reduction targets for pesticides and endocrine-disrupting chemicals released into the aquatic environment.

Other policy areas: agriculture and cohesion

23. Pollution from agriculture, including chemicals, fertilisers, pesticides and sediment run-off from fields is a major factor in the degradation of our freshwater environment.
24. The Environment Agency suggests that a quarter of water bodies are failing to meet Water Framework Directive targets due to diffuse agricultural pollution. We believe that in actuality, this proportion is far higher (as the Environment Agency has yet to confirm whether there is a failure and / or the reasons for failure in a further 40% of cases). However, in the River Basin Management Plans, the large majority of investments come from the water industry, and not from the agricultural sector.
25. It is very unlikely that ‘business as usual’ and voluntary measures alone will produce the behavioural changes needed from the agricultural sector. Future water policy should enable greater use of regulatory action. Subsidies must be reformed to encourage

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sustainable farming practices and reward farmers for delivering public benefits including better water quality and more wildlife. The reformed CAP should put much greater emphasis on the public benefits provided for the money invested, to ensure that existing subsidies go further.

5 September 2011

World Wildlife Fund (WWF)—Oral evidence (QQ 216-232)

Evidence Session No. 9.

Heard in Public.

Questions 216 – 232

WEDNESDAY 15 FEBRUARY 2012

Members present:

Lord Carter of Coles (Chairman)
Earl of Arran
Baroness Byford
Earl of Caithness
Baroness Howarth of Breckland
Lord Lewis of Newnham
Baroness Parminter
Baroness Sharp of Guildford

Examination of Witnesses

Dr Rose Timlett, Freshwater Programme Manager (UK Rivers), Freshwater Department, WWF-UK; and, via video link, **Sergey Moroz**, Senior Policy Officer, European Policy Office, WWF

Q216 The Chairman: Dr Timlett, Mr Moroz, thank you both for attending today. I think that we are linked up to Brussels. Is it working your end? Thank you. There are just a couple of formalities before we start. You have in front of you a list of interests that have been declared by Committee Members. This is a formal evidence-taking session of the Committee. A full shorthand note will be taken. This will go on the public record in printed form and on the parliamentary website. We will send you a copy of the transcript and you will be able to revise it in terms of minor errors. The session is on the record; it is being webcast live and will be subsequently accessible via the parliamentary website. I do not know whether you would like to start with a general statement or go straight into the questions, Dr Timlett.

Dr Timlett: Straight into the questions.

The Chairman: That is fine. Thank you very much. May I take the first question? It is about the EU water issues and the legislative response. On a general point, what do you see as the main issues to be tackled by the EU water policy and what is the greatest need in dealing with scarcity of water resources, or is the issue with water quality? How would that balance fall, in your view?

Dr Timlett: To take the first point, we think that the EU water policy needs to deal with the significant decline in freshwater environments that we have seen. Previous directives have made significant improvements, particularly around point source pollution, particularly around pollution from sewage treatment works. We feel that implementation of the Water Framework Directive is particularly important in dealing with the wider issues that we see in our freshwater environments, not just specific to species or specific to certain pollutants. The Water Framework Directive is a holistic piece of legislation that looks at the health of the ecosystem as a whole, and that focus is quite revolutionary. This is why the “one out, all out” rule is very important because, instead of focusing on individual symptoms of a problem, what you are doing with the Water Framework Directive is looking at the overall health of the ecosystem.

I will hand over to Sergey in a minute, but from WWF’s perspective in the UK we see EU water policy as really important in terms of implementing the existing legislation that we have. On the point around quality versus quantity, we would argue that those two things are so inextricably linked that it is hard to prioritise one over the other. In the case of a river, if you have a low volume of flow then the amount of pollutants in the river is likely to be more concentrated. Declines in water quality are also impacting the amount of water that we have available for use. I think that the Environment Agency’s *Water Resource Management Plan* said that something like 750 million litres per day of deployable output for human supply of water had been lost because of groundwater pollution. So those issues are very much linked and, with climate change in particular, yes, there are going to be implications for scarcity but there will also be implications for quality because if we see more frequent downpours, for example, we will see more run-off and diffuse pollution.

Sergey Moroz: Good afternoon. Let me add to that very briefly. I very much support what Rose has just said. The existing policy framework gives us enough tools and frameworks to deal with various water situations—whether it is dealing with quality or with quantity—by putting ecology at the heart of it.

If we look at the analysis that member states carried out in preparation of the Water Framework Directive implementation, where they tried to identify the major pressures and impacts on water bodies, it was very clear that we still have pollution problems, (even though major point-source pollution had already been tackled). We have also identified major changes to the hydrology and morphology—(and again there are measures targeting those)—and some of the particular problems with over-abstraction. So in a way the framework that exists allows member states to identify the particular problems that they are facing and develop the solutions. The point can be made that the Water Framework Directive is not as prescriptive on quantitative aspects as on some of the quality elements. There is a reason for that because quantitative management is a matter of subsidiarity under the EU Treaty; it is the competence of member states, so it is very difficult to be prescriptive at the EU level on quantitative management. The Water Framework Directive allows for supplementary plans to be developed on drought management, for example, and through tackling environmental flows it really addresses both quantity and quality. The situation is better for groundwater because there is a specific good quantitative status for groundwater, so it is a bit more prescriptive, and that is where we also see better progress.

The Chairman: Thank you. That was very helpful.

Q217 Lord Lewis of Newnham: I would like to question this point that you made on the “one out, all out” approach. To me, one of the most important features of this is that we have moved over in this directive from what was essentially a chemical-based analysis to an

ecologically based analysis. Let us take one item, for instance phosphates or something of this nature. Phosphates can, depending on the rate of flow of your river, be quite significant or not. It is extremely difficult to remove phosphates. Are you of the opinion that, if one of these things is done, is there not a tendency then to say, “Well, we are not going to be able to remove this, why should we worry about any of these other things”? This is the danger I see that could ensue from this particular approach and I have queries about this general approach of “one out, all out”.

Dr Timlett: Yes. To respond to that, as I said, the “one out, all out” is about encapsulating the fact that ecosystems are connected, which was your point. You are not looking at individual measures, or individual elements of a system; you are looking at indicators of the overall health. With the phosphate example, I am not aware of many cases or any cases where we are seeing failures for phosphate that are not also resulting in failures in quality or failures in other measures. I know that the RSPB has done quite a bit of research on this and we could give that as written evidence.

As I understand it, one of the main criticisms of the “one out, all out” rule is around the statistical and theoretical uncertainties—this idea that there is an increasing risk of a false negative as you monitor more and more elements. In practice we are not seeing 32 elements monitored in every river; in practice we are seeing only a handful of elements monitored. So, even if there is a theoretical risk, in practice we are not seeing it and it is not playing out as a problem at the moment. In any case, the classification is just one step in the process of delivering good ecological status or planning and, before any money is spent on measures, we would have investigations and assessment done on whether that is disproportionately costly or not. In practice, we do not see it so much as a problem, even though it might be in theory.

Q218 Baroness Sharp of Guildford: To pick up that point, one of the issues about the Water Framework Directive was that it was introducing looking at the biological systems as well as the chemical systems. Surely the problem with “one out, all out” is that it gives undue priority to the chemical analysis. Take phosphates or nitrates or something like that—once you hit something of that sort then it damns the whole thing even if your biological system is actually quite good.

Dr Timlett: I take that point—and Sergey might be able to expand on it—but I understand that the reason for those particular standards is a recognition that some pollutants have a long-term effect on the system, so you might not be seeing the impact now but—

Q219 Baroness Sharp of Guildford: Phosphate, for example, does precisely that and it is very difficult to clear from the system. You may pick up phosphate measurement over a very long period of time, whereas in fact you cannot do very much about it.

Can I take you a little bit further on the Water Framework Directive? What do you and the WWF see as the main strengths and weaknesses of the directive in relation to the current legislation? Also, do you think that the objectives of the Water Framework Directive are realistic in terms of balancing biodiversity against food and water security in densely populated and industrialised countries such as the UK? Do you think that these tensions are better or worse elsewhere in the EU? While I am asking you that, perhaps I could ask you a little bit about your paragraph 19, where you talk at the end about better integration of hydrology—this perhaps picks up Dr Moroz’s point—and you say that “better integration of hydrology flows and scarcity into the Water Framework Directive would also be beneficial”. I wonder if you could explain a little bit more about what you mean precisely by that.

Dr Timlett: I will leave the points around the flows issues to Sergey and the points about comparisons with the other member states, because he will be better placed to comment on that. First of all, thinking about the strengths of the Water Framework Directive, we have already talked about the fact that it is looking at the whole ecosystem. The other main strength that we see is that it offers a framework, basically, of decision-making. Even though it is very ambitious and it says that member states need to get to good ecological status by 2015, it allows member states flexibility on how they deliver and it allows them to make decisions about when and whether they are going to get to good ecological status and balance the needs of people and nature, because there are the exemptions that allow delays or alternative objectives for water bodies. The fact that we have that framework is really important. We would like to see it used as a framework, so that decision making is done not as a black box, scientific-type exercise but in conjunction with the local community. It is not just a technical or policy-maker decision; it should be done locally, giving people the decisions to decide or prioritise which rivers to get to good ecological status or which ones it is going to cost far too much money to do—it allows them to decide what they need to do when. That idea of putting the community at the heart of river-based planning is also one of the key strengths.

The cyclical nature and the institutional capacity that that decision-making process builds is also a key strength, because that is going to be key if we are going to be able to adapt to climate change. We are going to need to make some tough decisions, and the fact that we are starting on a process now that gives us a framework for making those decisions is a strength.

In terms of the weaknesses, just briefly I think that the fact that we do have these long timescales, which were in recognition of the ambition, has meant that they have been open to interpretation. That was one of the reasons for our legal application to the High Court for a judicial review of the first round of plans because we felt that those timescales had been abused. The other weakness is that lots of member states doing this are at different stages and it is not clear what the process is for bringing them all up.

Just very briefly again on whether it is realistic, I think that it is realistic to implement. It may be unrealistic to get every single river in England and Wales up to good ecological status, especially by 2015, but getting much further than where we are is a realistic ambition. At the moment we do not really know how much of a gap there is between where we are now and how much it is going to cost, or what measures are going to be needed to get us to a good ecological status. So we cannot make those decisions at the moment about whether it is realistic or not.

Q220 Baroness Byford: Can I just pick Dr Timlett up? She said that local communities should decide. That is why I wanted to come in now because your colleague may well infer that in his reply. How will they do that, what are they going to do and who has the money? How do you imagine it happening in practicality?

Dr Timlett: Yes. Local communities and local people need to be part of the decision-making process. That is not necessarily to say they will make the ultimate decision but they need to be part of it. One of the things that they need to recognise is what the Water Framework Directive classification says for their river. At the moment we have a situation where a lot of local communities do not recognise the status. A river is said to be good or a river is said to be poor and the local community is saying, “That doesn’t really sound like my river”. So part of that process is getting to a point where everyone agrees what the current status is and

what needs to be done—agreeing what the problems are and what needs to be done, if you are going to get it to good status.

One of the problems with local communities at the moment is that there is a very low awareness, if you are talking about the general public. You may have active river groups or groups like WWF or RSPB that are involved and you may have consumer groups, but if you go to Joe Bloggs in the street, first of all, they have a very low awareness about where their water comes from. Most people have no idea that the water they use comes from a river and the impacts water use can have. People are not paying for how much water they use. So there is a disconnect and awareness needs to be raised before they can start making informed choices.

Sergey Moroz: Let me just very briefly to add to Rose's input on hydrology and morphology, and I would also like to start with the "one out, all out" principle. In a way, the strength of the Water Framework Directive is in introducing those particular indicators as a set that would show how ecosystems respond to different impacts, because our water bodies such as rivers, lakes and aquifers are under pressure from various points. In order to measure their health, it is important to look at different elements that respond to those pressures. This leads me to the question about the changes that have been made across the EU; it is not only the UK. It is a very serious problem that has not necessarily been given enough attention in the past. One of the changes that the Water Framework Directive brought on top of the existing water legislation was recognising the pressures that are being posed through changes in hydrology and morphology—for example, where there is a hydropower dam which does not have a fish ladder and which prevents fish from migrating upstream towards their spawning grounds. It is the same when we are talking about the environmental flows—it is absolutely crucial for a healthy, functioning ecosystem to have the right amount of water of good quality, of the right quantity and, extremely importantly, at the right time because, for example, fish start spawning when there is a particular flush of floodwater that comes in spring. So it is absolutely crucial that we mimic those natural processes even in some of our modified rivers.

It is very true that we do not want the Thames meandering back through the centre of London, nobody is talking about that. There are a number of provisions in the directive where you set environmental objectives based on science and then there is a particular process in trying to find the trade-offs between socioeconomic interests and a particular state that the water body should be in, whether it is because there are no feasible measures available or because it is disproportionately expensive.

On your point about the particular challenges, especially in densely populated industrialised countries like the UK, from Brussels, from an EU-wide perspective, it is true that the Water Framework Directive is posing a challenge, but it is also true that our freshwater ecosystems are in a much worse state than we thought before the Water Framework Directive was adopted. It has increased attention on trying to resolve those particular pressures. It is possible to do it in industrialised countries and in less industrialised ones, but that also varies with the level of existing conditions. That is probably why Bulgaria is able to improve 25% of the surface water by 2015 while the UK is only able to do 5%. To give you a comparison with other industrialised countries, for example the indicator for Germany is about 10%, the same as for the Netherlands. So there are other member states that are in a similar situation to the UK where the level of ambition is higher, for example, but there are a number of reasons for that. We can go into more detail, but this is just to give you an impression. Yes, it is a challenge but, yes, it can also be done.

Q221 Lord Lewis of Newham: Could I just take up a point that I think is implicit in what Baroness Sharp was saying to you? In the case of the water assessment you either pass or you fail; it is basically a two-stage arrangement. My understanding is that in the ecological scale there are four stages. Which of these allow you to pass and which allow you to fail? In the chemical one it is quite simple; in the ecological one I find it very much more difficult to apply. As you are implying that there are different situations in the ecological balance, whether you are interested in the life of a fish and the flow rates and things of this particular nature, whereas for others you may be taking a different set of criteria?

Sergey Moroz: Yes. You are absolutely right, and I think that is also why there is a moderate status as well. You can lower the environmental objective from good to moderate if, for example, the measure is disproportionately expensive or not feasible. So these instruments are there under the directive, but it is important that we look at the whole health of the ecosystem, and that is where we need to look at all those indicators. I would separate the question of science and environmental objectives as they are being set and the question of communication. It is true that progress is also being made in the UK on improving the biology but, because of the chemical status and because of the “one out, all out” principle, some of the water bodies will remain red despite the fact that progress is being made and there is life coming back to those water bodies.

I think that that is a communication issue. We can communicate that on these particular elements we are making an improvement, but we cannot say that the ecosystem is in full health and is able to provide the full range of ecosystem services, because it is falling on some of the chemical elements. It will be important to justify the investment that is foreseen in the water measures that we are able to communicate that we are making progress and to justify to the public some of the significant investments that are being made in bringing life back to our rivers.

Q222 Earl of Caithness: I would like to take you on to the implementation of the Water Framework Directive. We know that it is quite well implemented in this country, and you do not seem to have concerns for the future of that, but what about in the rest of Europe? How is it being implemented? We know that four countries have not yet submitted river basin management plans, so is it not perverse that the EU is trying to amend legislation that has not even been enforced on its original process?

Dr Timlett: Just to take one point before I hand over to Sergey to compare, I think that we would say that just because we have plans in place does not necessarily mean that we have implemented the Water Framework Directive. That is one of the problems with the speed with which the EU are looking at progress, because at the moment they are still looking at whether countries have put plans out, not necessarily looking at the content of them. Since the river basin management plans were published here in 2009 we have had a number of new efforts and new commitments from the Government and extra resources ploughed into the Water Framework Directive, which is very welcome, and hopefully we will see a step change in implementation. So we are very much focused, in the UK at least, on looking ahead to the second cycle of river basin plans, where we want to see—

Earl of Caithness: I want to get towards the rest of Europe.

Dr Timlett: Yes. Go ahead, Sergey.

Sergey Moroz: Yes. Thank you. You are right in pointing out that some member states are still in the process of providing river basin management plans. Many of them happen to be in the south of Europe. However, about 80% of the EU’s territory and population are already

covered by plans that still need to be implemented. They still need to be translated into real action. So there is a bit of an issue that some of these member states need to speed up to meet the deadline and invest a bit more in river basin management planning, and we recognise that.

Under the Water Framework Directive the legal deadline for the review is not before 2018, because only then will we know whether the objectives that are set for 2015 have been met, and then we will be able to assess what needs to be changed in particular in legislation in 2018. What is currently happening in Brussels is not really a review of the Water Framework Directive as such but a response recognising that there are particular challenges that member states are facing in terms of implementation of the directive, in terms of coherence of water legislation and other sectoral legislation, for example, and in terms of the emergence of climate change as an extremely important issue. The European Commission embarked on the process of elaborating the Blueprint to safeguard the EU waters so that we use current instruments and strengthen some of them. We are not talking about reviewing the legal review of the directive; that is not before 2018.

The one review that is ongoing is the review of priority substances, but that is foreseen as a mechanism under the Water Framework Directive. As our monitoring improves and as we are able to understand particular substances that are causing concern, we review the list of priority substances to be monitored and particular measures to be taken in order to bring them down to allowable concentrations, or to ensure that those substances that were identified as priority hazardous substances are phased out within a 20-year timeframe. This is a mechanism that was foreseen in 2000 when the Water Framework Directive was adopted. So it is not something new; it is foreseen to be taking place every four years.

Q223 Earl of Caithness: What more should the EU do to promote the existing Water Framework Directive? Then I have a final quick question: are you as critical of urban dwellers as you are of farmers?

Sergey Moroz: In terms of what more the EU can do, I think that we do not need new legislation. We have enough. What we need to do is to make sure that it is properly implemented, that there is EU money, for example, allocated to this and that we use the opportunities of big reviews that are taking place—for example, on the Common Agricultural Policy—to ensure that water concerns are addressed in the current reform process.

Where we also need help is that the European Commission is strong on the enforcement of the legislation, but in some cases the clarification takes too long and there is this uncertainty about the process. For example, there might be a difference of opinion between the European Commission and member states on how to interpret specific provisions of the directive on the definition of water services. So there is definitely a need for some of this clarification to be done faster and the Commission needs to help member states to address some of the priority issues of implementation and enforcement. I attended a workshop just last week, including some of the representatives of member states, and I was very surprised to hear that this is also what member states representatives asked for—proper enforcement that would help them as well. I think there is also a need for guidance on exchange of best practice, whether it is about environmental flows definition or whether it is about proper strategic planning on where you locate new hydropower plants, for example. So there is definitely a need for guidance and better practice at the EU level on some of the more controversial issues.

The Urban Waste Water Treatment Directive is not something that we as WWF got engaged very closely with. However, we have to recognise that there are particular environmental improvements that are delivered under the Urban Waste Water Treatment Directive and there were also significant investments that went into the improvements. If we look at some of the improvements that we have with point source pollution, these are due to significant measures that were taken under the Urban Waste Water Treatment Directive and, because there is no mechanism for exemptions or derogations, in a way member states were really required to deliver without major delays or without providing the flexibility arguments that the Water Framework Directive has.

Dr Timlett: On the last question, about whether we are interested in urban resources as much as agricultural, the answer is yes. Diffuse pollution is a massive issue and the problem with urban diffuse pollution at the moment is that we do not have a handle on the scale of the problem. We suspect that it is massive, but we do not really know that yet. So we were very pleased to see that in the Government's water White Paper before Christmas they were planning this new strategy on how to deal with urban diffuse pollution. It might be a good question for the Environment Agency later, because they are doing a number of catchment walkovers where they are walking along the catchment and looking for the sources of diffuse pollution in a number of different catchments. They should soon be able to have a better handle on exactly where this diffuse pollution, which is actually small point source pollution, is coming from.

Q224 Earl of Arran: Moving on to water and agriculture, you say that it is “very unlikely that business as usual and voluntary measures alone will produce the behavioural changes needed from the agricultural sector”. Okay, fine, but what measures, therefore, should be incorporated into the greening of Pillar I of CAP to implement the WFD? Secondly and really importantly, how should the balance between regulations, incentives and advice to farmers and landowners be struck, and should these be provided by a single body or by different bodies?

Dr Timlett: I will take the second part of the question and leave Sergey to answer the CAP part. I think at the moment there is a real confusion about the roles of all the different parties that we have. We are getting lots of mixed messages to farmers on water and lots of different people doing lots of different visits. There is also a lack of consensus about specifically what the problem is. Farmers say, “Well, what is the problem that we are causing? We want to know specifically where the problem is.” Coupled with that sort of confusion, we have a suite of incentives that are being used to try to change behaviour that were not designed specifically with water in mind. We have a situation as well where violations and baseline regulations are quite widespread and there are just not the resources or the follow-up to deal with these.

WWF recently co-funded a piece of work with Defra and the Rivers Trust that conducted a number of interviews with farmers and looked to review the suite of policy instruments that are available to it to deal with diffuse agricultural pollution. That concluded that there is confusion at the moment and what was needed was real clarity on what the problems were in the catchment and convincing farmers of those. That is where we see the Water Framework Directive again and the catchment approach having real value to be able to say, “This is the problem”.

It also concluded that we need to be clearer about the roles of the different bodies in providing advice and providing the incentives in regulation. To deliver advice on a farm, you need to be trusted, you need to build up a long-term relationship with the farmer and you

need to provide advice that is specific to that farm. There is no point in giving broad-brush messages. Natural England's Catchment Sensitive Farming scheme and the schemes run by the Rivers Trusts—I know that you heard from Westcountry Rivers Trust—are quite well placed to be that sort of trusted, independent provider of advice.

The other point was that the incentives of the ELS and HLS are not very well targeted at water. This is why—and Sergey will come on to that—we are calling for a better suite of incentives to really progress WFD.

The last point is that the farmers themselves are telling us, "We need to know what the process is for enforcement". It is not clear at the moment, and they see it as not being fair if one farmer responds to the advice and invests a lot in doing stuff when their neighbour just does not do anything. They want equitable, transparent enforcement policies. We see the role of the Environment Agency as being to say, "Right, this is the problem that we need to address and this is what will be done about it". You need that balance between the carrots and sticks, I suppose.

Earl of Arran: Yes. So you are saying that it should be done by one body rather than by different bodies.

Dr Timlett: I am saying that the roles should be clarified, and there are different bodies. The Environment Agency is very well placed to do the monitoring and the enforcement, whereas bodies such as the Rivers Trust and Natural England's Catchment Sensitive Farming officers are better placed to give the advice. At the end of the day, a farmer does not trust someone who comes to a farm if they know that they are the ones who are going to be hitting them with a fine. So there is a conflict there.

Earl of Arran: The worry is confusion of course—mixed messages coming over from different people.

Dr Timlett: Yes. That is why it is important that Defra has a role to clarify who is doing what.

Q225 Baroness Howarth of Breckland: I have a short supplementary before Lord Arran goes on. Do you think that the Environment Agency is ambitious enough and do you think that it should be doing more to bring these partnerships together? I should declare an interest, which I do not have to declare on paper, that I am a member of the WWF—I have to say that at the beginning. Do you think that it is ambitious enough, in terms of its programmes and the speed at which it wants to bring these things together and implement the framework?

Dr Timlett: There is a huge problem here and it needs to do more to rise to the challenge. This is one of the things that we hope to see coming out of the catchment pilots. One of the original aims behind this new catchment approach was to have some areas, 10 places, where you can pilot this suite of levers that we have to pull at the moment. The Environment Agency could rigorously drive baseline regulation but also focus the advice and the incentives in that area. The idea is that by the time we get to 2014 we can look back and say, "Well, how far has that taken us?" and importantly, "How much has that cost?" Ultimately, the approach has financial implications. We could do a lot of well-tailored voluntary advice but that could be expensive, and so there needs to be a process where we can judge how far the different methods take us, how much they cost and how long they will take to implement. Then a political decision has to be made about which approach we take.

Lord Lewis of Newnham: So the short answer is no.

Dr Timlett: Yes.

The Chairman: Would Mr Moroz like to add to this?

Sergey Moroz: I would like to give an answer to your first question about the Common Agricultural Policy and highlight the importance of the reform that is ongoing. If we look at the water situation but also at the river basin management plans, agricultural pressures have been identified as the number one pressure on the water bodies and are causing the failure to achieve the environmental directives of the Water Framework Directive. It is absolutely crucial. The Water Framework Directive does not get all the measures, so there is definitely a need to streamline and make sure that the Common Agricultural Policy also helps to deliver on the environmental objectives that we agreed as a Union to be delivered by specific deadlines.

In this respect there are three things that we can do in order to improve the Common Agricultural Policy. I think it is important that we also look at the cross-compliance mechanism. Some key measures of the Water Framework Directive, such as issuing permits for abstraction or for discharge of polluted water, need to be part of the cross-compliance mechanism, because these are the things the farmers need to comply with as a baseline in order to qualify for the income support from Pillar I. We have an issue with, for example, illegal water abstraction—in Spain we have 510,000 illegal boreholes. This is based on the information that we get from the authorities themselves, and they are struggling to find the right tools to tackle those illegal boreholes, which also lead to groundwater levels dropping and to some of the iconic rivers that feed, for example, the Doñana National Park running dry. There are particular elements of the Water Framework Directive that need to be made part of the cross-compliance, like control of unauthorised water abstraction.

Coming back to your question on what needs to be included in the Pillar I in terms of the new greening component that the European Commission proposes in its proposal, it would be difficult to find one particular measure for agriculture that would fit the diversity of water and geographical situations that we were talking about. One thing can potentially be the buffer strips right next to the watercourses. There can be some modification to the current proposal of the definition of the ecological focus areas that will deliver more for water protection.

The biggest advantage can be found in Pillar 2 of the Common Agricultural Policy and the so-called rural development measures, because you can target them specifically to the particular situation that you have and to the particular problems that you are facing in your river basin. It is important that, first of all, there is sufficient funding available for the rural development programmes. According to the European Commission, some very rough estimates are that we would need about €10 billion a year in the rural development programmes just to implement the Water Framework Directive. So they show the scale of the problem but also that we need to have the right financial instruments in the second pillar in order to help to achieve the Water Framework Directive objectives. That would be the right mechanism to do it.

While we are talking about agriculture, I would like to highlight one weakness that is across the EU—it is not only particularly relevant to the UK. That is the adequate contribution of the agricultural sector to the cost recovery of the programme of measures. We do see agriculture causing a particular pressure, but when it comes to the contribution of the agricultural sector to the costs of remediating some of the water problems that we have, it is extremely low, from 0.5%—in some member states it goes to 20% but not more than that. What we are seeing is that the costs of the improvement of the Water Framework

Directive are passed on to the water bill payers—on to the water consumers. That is in contradiction to the polluter pays principle, and I think it is important that different economic sectors that are very often responsible for creating some of the water problems that we are trying to resolve are adequately contributing to that, and agriculture is one very evident example of this.

Q226 Baroness Howarth of Breckland: I want to move on to governance. You say in your document: “Clear common objectives across the EU will help secure domestic political attention and investment, driving further improvements in environmental quality and securing water resources and other ecosystem services for people”. What we would like to have is some examples of success in the application of the ecosystem services approach to water management from the EU or elsewhere in the world. We do not have a very good picture of success outside the UK.

We have talked a little about local involvement previously, but we would like to move beyond technical stakeholder involvement in water management to wider public ownership management of water bodies—the kind of things that you were talking about earlier in relation to people feeling some sense of ownership. I do not know if, when you are talking about that, you have any views on how wider planning issues in local authorities, here and elsewhere, are tackled in relation to water being made available to the public. If I stop there, we can move on to the third bit of my question after we have moved through what is quite a lot. Maybe we could start with the EU and other world pictures of success, if we have that.

Sergey Moroz: The payment for ecosystem services is still a relatively new concept. A lot of developments have happened globally, not necessarily in Europe but it seems to be picking up in the EU member states as well. One point that I would like to make is that it is still relatively new, so a number of projects have started in the last few years but are still ongoing. It is still difficult to make clear conclusions and judgments. In terms of preliminary conclusions, from the work that we did looking a little bit at some of these projects and in implementing some of the schemes in the lower Danube in Romania and Bulgaria through our Danube-Carpathian programme, I think the concept of payment for ecosystem services lends itself quite well to the thinking under the Water Framework Directive. It would actually be possible to link the two, especially in the forthcoming planning cycle after 2015.

One of the things that you need to have there is a strong economic partner. For example, a project that we did in Hungary involved an energy company that paid some of the unemployed people in Hungary in temporary jobs to restore the floodplains along the Danube and to remove the invasive plant, which was then used for production of electricity. That also helped to restore the floodplain, to restore the wetlands and to increase the tourism potential of the area as well. For this scheme to work and make business sense, you needed a strong economic partner—the energy company that was buying this invasive plant in order to produce energy. A similar example is with a brick company in the Netherlands that, by extracting clay and returning the area back to its natural state, could provide some of these ecosystem services. The brick company was an economic agent.

Where we see some of the potential in the Danube is in the use of some of the public funds for the delivery of some of these ecosystem services, especially in the areas where you do not have a strong economic partner. Here we are talking about some of the fishponds and providing specific better practices in managing reeds, for example, which allows the provision of some of these ecosystem services, such as fish for the local population or particular nesting grounds for biodiversity. We saw that the availability of public funds, whether it is the European fisheries fund in the case of fish or rural development funds in

some of the agricultural activities, was helping with setting these schemes but also providing the finance for rewarding the farmer or fisherman for the delivery of public good in terms of particular ecosystem services. There are a couple of examples. Again, it is relatively new so we can only make some provisional conclusions. We also know that, for example, the concept has been picked up in the Netherlands quite strongly, and they have produced a particular catalogue of measures that farmers can pick and choose in order to deliver some of these ecosystem services for which they are rewarded through rural development programmes.

Q227 Baroness Howarth of Breckland: Does this depend on greater involvement at a local level or is it a top-down approach? How is this made to work?

Sergey Moroz: At the moment these are very local schemes, so they are very much bottom-up and very often it is the NGOs who are acting as a catalyst for setting up the scheme. I have to give credit to some of the water companies or drinking water companies. In the famous Vittel example in France and similar cases in Switzerland, the water company is driving some of the improvements in agricultural practices by farmers and rewards them for that. Yes, it is very local but we believe that we can learn some lessons from these schemes, and we can begin to integrate some of the lessons from this in the further cycles of implementation of water policy. For example, when we do characterisation of water bodies—the so-called Article 5 reports under the Water Framework Directive—we also look at the ecosystem services provision. We identify those ecosystem services and then also use them in, for example, identifying some of the innovative economic mechanisms that we can use while implementing the Water Framework Directive. But you are absolutely right: at the moment it is very local and bottom-up, but it can be upscaled.

Q228 Baroness Howarth of Breckland: The next bit of the question is: how do you make the local strategic and how do you ensure that that is carried right through the planning, particularly in the UK, having heard that these things are happening in other places?

Dr Timlett: Yes. That is where it is important to have that link between the local approaches in the river basin management plans. There will be a certain amount of local, bottom-up approaches, but there is also a level of what is needed. We need to make sure that we fill that gap, so that we do not just do what people want to do because it is nice in their area but we do what we need to do to deliver those broader ecosystem services, such as those in relation to drinking water and the protection of our environments.

Q229 Baroness Howarth of Breckland: You said earlier that there is a very low awareness among local populations—I do not know whether this is true right across Europe—in relation to where water comes from and how it is dealt with, so how do you get your local stakeholders involved? How do you manage to get this “think local”? How do you get the strategy down and get the local movement up?

Dr Timlett: One thing that we have done in the UK is to set up a campaign, called Our Rivers, which we then promoted with RSPB, the Angling Trust, the Salmon and Trout Association and other NGOs to our members. What we were trying to do was to build a community or network of people who are interested in rivers. What was really interesting to us was that it was not just the fishermen or the canoeists who were part of this; by and large the majority of people who were involved were people who just liked to walk their dog along the riverbank or just sit and watch. So there are a lot of interested people out there. Through that Our Rivers campaign, we managed to get 1,000 more people involved in the river basin planning process in 2009. But it is very difficult. It is horses for courses. You

cannot just simplify the whole of the Water Framework Directive to a level that Joe Bloggs in the street can understand. You need to do that to some people but at the same time for different audiences you need to communicate in different ways. I think that the catchment approach will be valuable to learn lessons about who the people are who engage in these groups, because in different places already we are seeing different people involved. In some places, the local authorities or the parish councils are very much involved; in some places they are not. So it will be interesting to see what bubbles up and then we can reflect back and see if that is all we need.

Q230 Lord Lewis of Newnham: One of the most impressive features I found when I looked at this problem many years ago was that the most effective monitoring was done by the anglers. They were the ones who would report back to you very quickly indeed if there were any problems. Water in this country tends to be in a privatised zone whereas in the rest of Europe this is much more limited and the approach is much more centralised. Have you noticed whether this has made any significant difference to the application of the Water Framework Directive?

Dr Timlett: Sergey can comment on that, but let me add briefly that we did a public opinion poll across Europe about whether people felt that they were getting good value from their water services or what they were paying for through their bills, and it was in the UK that people felt that value was lowest. That is partly, we feel, because they are not paying for what they use. There is almost a paternalistic model: “The water companies will look after it, you don’t even need to think about it. You just pay your annual bill and we will give you an endless supply of water.” Across Europe we have much more widespread water metering and that gives people more control over their bills, and I think that that is one of the reasons why people there value water more perhaps, but Sergey can—

The Chairman: Just a moment. We are coming to the end of our time. Perhaps you could give us a brief answer and then I think we have one more question from Baroness Parminter. But if we could quickly deal with that, we would be grateful. Thank you.

Q231 Baroness Howarth of Breckland: Just very briefly, you have talked quite a lot about the Defra catchment management schemes. Following that, and going back to what you were talking about earlier, do you think that the Defra plans, the Environment Agency plans and the local authority plans—particularly in this country, where the local authority is separate from the water authority and therefore building and planning are separate—are a detrimental factor in terms of moving the Water Framework Directive forward? If so, what do you think we can do about that?

Dr Timlett: I guess that this is a question of boundaries and it is always going to be difficult. If you are looking at water, then you choose the catchment as your boundary because that makes sense. It does not necessarily make sense if you are running town planning and you choose the town and there is going to be a mismatch. So the key there is collaboration and I think that the catchment approach, if it is implemented well, is going to be critical to having that local level forum to bring people together on a scale that is more meaningful. The problem with river basin plans is before that they were at a much higher level and so you would have hundreds of local authorities, potentially, in one river basin area. It needs to be done on a scale where a local authority can engage meaningfully in the process.

The Chairman: Mr Moroz, do you have any brief comments that you would like to make?

Sergey Moroz: Just two very brief ones. On public versus private, when we look we do not see a major difference. I think it depends on the situation and how the challenges are

managed, so we do not really see a major difference whether it is private or public. On public involvement, what we see is that citizens care about water a lot. In the EU, Eurobarometers always show that 80% of citizens care about the quality and quantity of water. So it is extremely important that the public participation process that is foreseen under the Water Framework Directive is taken seriously and not as a bureaucratic box-ticking exercise. We have seen a number of examples. In Baden-Württemberg in Germany there was serious public participation over a series of evenings with external facilitation of getting the local community together, trying to work out the measures and using local knowledge of where those measures would be most applicable. It requires resources and it needs to be taken seriously, but it can work well. We have learnt a lot from the first cycle, but public participation is an absolutely crucial mechanism under the Water Framework Directive and we hope to see it being used much better in the next cycles.

Q232 Baroness Parminter: In your submission, you mention that more emphasis is needed on water efficiency. In your view, what are the key measures that can help consumers to reduce their water usage, both domestic and industrial?

Dr Timlett: We still have a long way to go to deliver water efficiency in this country, partly because the way in which companies plan does not fully reflect the value of the water that they use. If they did, it might make water efficiency and demand management measures more favourable. There are a whole bunch of things that need to be done with the way in which the water companies plan, how they make their financial decisions and what values they use to drive forward on water efficiency.

In terms of what measures, I think the first thing is water metering. It helps on a huge number of levels, not least the economic incentives for companies and for commercial customers, but also it helps us to understand what demand is. At the moment a lot of water companies have no real idea about what their demand is—how many customers, what is their profile, how many customers are using below average, or how many customers are using 500 litres per person per day. They do not have that sort of granularity. If they did they would be able to target water efficiency measures much more effectively and much more cost-effectively. Waterwise has been developing an increasing evidence base on water efficiency measures, and things like home retrofits, devices for taps, toilets and showers. We have seen that these can deliver savings and it is just a case of rolling it out now and upscaling it.

Finally, the other important measure relates to leakage. At the moment, in terms of water wasted in getting it to people's homes, water wasted in the treatment and water wasted in people's homes, around a third of what we take from the environment is wasted, which is a huge amount. We think that there is quite a lot of water to go around; it is just that we are not managing it very well. We need a better system to look at the way in which we deal with that and incentivise demand management and water efficiency.

The Chairman: I think that that is a very good point to end on. Thank you very much, Dr Timlett and Mr Moroz, for your evidence. It is much appreciated and it has helped us a great deal in our inquiry.

World Wildlife Fund (WWF)—Supplementary written evidence

Why is ‘One Out, All Out’ important?

1. The headline objective of the Water Framework Directive (WFD) is achievement of good ecological status (GES) for water bodies by 2015. This focus is revolutionary: unlike previous Directives, the WFD is not focused on particular levels of pollutants, or even populations of particular species, instead it attempts to holistically measure and improve ecosystem health. The so called ‘one out, all out’ rule is of significant importance because it underlines this holistic approach and recognises the connectivity of ecosystems. It encourages us not just to look at the status of individual symptoms but instead focus on the all-round health of the system.
2. The Water Framework Directive requires a cultural shift in the way we monitor rivers. Under the previous GQA monitoring system there was a focus on water quality, which required measurement of concentration of certain pollutants, for example. This is quite different from an approach that takes a wider view of the ecosystem. Modern monitoring is about assessing overall ecological quality, which means measuring the health of the biota, its environment and processes, using carefully chosen symbolic indicators for plants, fish, invertebrates, habitat form, as well as water quality.
3. A key area of criticism of ‘one out, all out’ is around apparent ‘unfairness’ of failing a water body based on one failing element, when the rest of the elements meet the quality standard. However, we believe that proposals to discount individual failing elements overlooks the fact that ecosystems are made up of complex, interconnected relationships between species and physical processes.
4. In the majority of cases, ‘one out, all out’ failures are driven by failure in biological elements, suggesting that the cause of the failure is not picked up by the Environment Agency’s monitoring.
5. Another key criticism is around the risk of false negatives. In theory, WFD monitors 32 elements, which are treated statistically as if they are independent. Each element has an error bar associated with it which records the risk that the element is monitored to be lower (and higher) than reality. Statistically, there is an increasing risk of a false negative as the number of elements monitored increased. However, it is unlikely that this risk is borne out in practice because only a handful of elements are monitored on the majority of water bodies. Even if there were a false negative result, it is unlikely to drive implementation of costly measures, as the process of subsequent investigation about the cause of failure would reveal anomalies.
6. There is a concern that ‘one out, all out’ masks progress in improvements. The Environment Agency remedies this by reporting improvements on individual elements as well as improvements in ecological status. The latest 2010 results show a 1% improvement in water bodies meeting good ecological status and a 2% improvement in individual elements.

‘One Out, All Out’ and Phosphate

7. There is a weight of scientific evidence that categorically links phosphate pollution to changes in freshwater/terrestrial ecology and, ultimately eutrophication. In excess, phosphate pollution will eventually almost certainly reduce plant diversity. For example, virtually all nutrient sensitive plants have been wiped out on the Thames from Oxford to London (described as “one of the most comprehensively degraded floras in all of Berkshire”⁴⁴).
8. There are particular concerns about the ‘one out, all out’ in relation to phosphate. There was a suggestion that a water body could be failing for phosphate despite it “teeming with life”, leading it be ‘falsely’ classified as failing to meet GES. This led to Environment Agency claims that the ‘one out, all out’ principle was “mask[ing] the picture of underlying biological health”⁴⁵. This claim was subsequently debunked by RSPB research⁴⁶ which showed that this was an artefact of the monitoring regime.
9. The RSPB study showed that the Environment Agency were sampling biology in far fewer places than where they were sampling phosphates (e.g. in the Anglian region, phosphate was monitored in 573 rivers, whereas the biological elements most sensitive to eutrophication, were monitored in just 92.)
10. The RSPB study showed that where both phosphate and plant life (macrophyte/diatoms) were monitored, over 90% of phosphate failures were accompanied by biological failure. A more rigorous study by the Environment Agency has since confirmed this. As a result, the Environment Agency undertook modelling which suggests that as plant/diatom monitoring is rolled out over more sites, more water bodies will be reported as having moderate or worse classification (and therefore, fewer ‘one out, all out’ failures related to phosphates). The final River Basin Management Plans were rewritten to remove the ‘mask’ claim and make clear the link between high levels of phosphate and likelihood of biological failures as additional water bodies are assessed for plants/diatoms.
11. The phosphate standards themselves were derived by UKTAG. Responses to the UKTAG consultation from a number of external experts (including Natural England) suggest it is very unlikely that the phosphate standards adopted for the Environment Agency’s classification scheme are over-cautious. In fact, it was suggested that, rather than being too tight, the standards and associated compliance regimes for some river types would allow significant deterioration before triggering a GES failure.
12. In summary, we have seen no credible evidence that the application of the ‘one out, all out’ rule to phosphate failures is having an unjustified or disproportionate impact on the overall classification of river status. Rather the opposite, the weight of research suggests that the ecological impact of phosphate is likely to be more widespread than the 2009 classification suggests and that this will be revealed as more monitoring is rolled out.

27 February 2012

⁴⁴ Prof. FRS, Mick Crawley. 2005. Flora of Berkshire.

⁴⁵ Environment Agency. 2009. Draft River Basin Management Plan. Annex B.

⁴⁶ RSPB. 2009. Does WFD monitoring show a biological response to elevated phosphate levels in rivers?