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# Developing Agri-Environment Programmes in Central and Eastern Europe – *a Manual*

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Prepared by: David Baldock, Harriet Bennett, Jan-Erik Petersen, Peter Veen and Gerwin Verschuur.

With assistance from: Johan Heinen, Yanka Kazakova, Jaroslav Prazan, Mark Redman, Martin Ryan, Ferenc Tar, Paul Terwan and Mark Temple

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# Introduction

## Introduction

Agriculture has played an important role in shaping nature and the rural environment in Europe for centuries. Semi-natural habitats maintained by agriculture have become indispensable substitutes for original natural habitats and hence for the survival of many species. Over the last fifty years some agricultural areas have come under pressure from intensification, changes of land use and cropping patterns and the discontinuation of traditional practices. Others have been affected by marginalisation and abandonment, which has become a large scale problem in Central and Eastern Europe (CEE) since the early 1990s.

This manual is intended to help stakeholders inside or outside government who are interested in the development of agri-environment policy. By giving farmers a real incentive for adopting practices that are often not economically rewarding, agri-environment schemes are arguably the most promising instrument to date for integrating environmental and nature conservation objectives into farm management.

Agri-environment schemes have the potential to be particularly relevant in CEE as agriculture is the dominant type of land use (53% on average in CEE) and is likely to remain so in the foreseeable future. The sustainable use of natural resources is vital for the long-term development of CEE, and agri- environment programmes offer an opportunity to achieve this and to maintain the present, low-input, farming systems which contribute so much to the character and conservation value of the region.

The overall aims of this manual are to:

- assist Candidate Countries with the process of preparation for accession to the EU through disseminating knowledge and experience with the preparation and implementation of agri-environment measures, as defined by the Rural Development Regulation;
- increase knowledge of agri-environment policy beyond the circle of immediate Candidate Countries; and
- contribute to the conservation of biodiversity and landscape on farmland in the region.

This manual draws on experience in different European countries in preparing and implementing agri-environment plans. An earlier version, completed in April 1998, relied mainly on experience in EU countries and focussed on the requirements of the then EU legislation, Regulation 2078/92. For this version we have been greatly assisted by the comments and contributions of a wide range of people in Central and Eastern Europe, particularly our partners[1] in a ten-country project to develop proposals for national and pilot agri-environment schemes. New sections have been added with their help. We have also revised the text to reflect changes in EU policy, particularly the introduction of the Rural Development Regulation (1257/1999).

We must stress that this manual is far from definitive. We would be pleased to receive comments, corrections and ideas for its improvement. Although a further edition is not currently planned, this may not be the last!

*David Baldock, Director, IEEP*
*Martien Lankester, Executive Director, Avalon*

[1] Association for Ecological Agriculture (Bulgaria); Foundation for Organic Agriculture (Czech Republic); Centre for Ecological Engineering, Tartu (Estonia); Association for Local and Regional Development, Debrecen (Hungary); Latvian Association for Organic Agriculture; Latvian Fund for Nature; Lithuanian Fund for Nature; IUCN Poland; National Foundation for Environmental Protection (Poland); The Ecologist Youth of Romania; IUCN Slovakia; Triglav National Park (Slovenia).

# 1 Understanding the EU agri-environment Regulations

## 1.1 Introduction

Agri-environment schemes represent a means of rewarding farmers for good management of their land. They are based on voluntary agreements between farmers and public authorities, typically over five years. In these, farmers agree to comply with certain environmental rules, or practise a specified form of environmentally friendly agriculture. They are compensated for the costs and loss of income that such methods usually bring with them. This chapter aims to give a basic understanding of the origin and functioning of the regulations that specify the rules for the design and operation of agri-environment measures in the EU. They form part of the European Common Agricultural Policy (CAP). The chapter provides a brief outline of the historical development of agri-environment policy within the CAP and introduces the current regulations within the wider context of rural development objectives. The main types of agri-environment measures that can be used under the current legislation are summarised and the procedure for EU approval presented in outline.

## 1.2 Operational objectives

Chapter 1 aims to:

a. introduce the historical and policy background to the current European Regulations governing agri-environment policy;
b. provide a basic understanding of the overall procedures for establishing an agri-environment scheme under the RDR;
c. portray the main principles and scope of agri-environment policy and the main options available for developing a national programme.

## 1.3 Historical development

In the late 1970s the European Community experienced increasing problems with agricultural surpluses, giving the first impetus for a long process of policy review and reform. From the beginning of the 1980s there was a growing appreciation of the importance of agriculture and of agricultural policy in shaping the environment. The high environmental cost of some aspects of modern, generally more intensive, farming was becoming evident. Agriculture's role in causing water pollution and wildlife habitat loss attracted increasing attention. At the same time the disappearance of many more traditional practices was underlining the role of agriculture in shaping and maintaining a wide range of valued habitats and landscapes. As environmental considerations began to influence the CAP, the need to provide farmers with an incentive to adopt or maintain environmentally sensitive practices was one of the first priorities. Both the aim of curbing European production and the new environmental concerns lay behind the introduction of agri-environment schemes within the CAP.

The first agri-environment schemes were started during the mid 1980s in the Netherlands, the United Kingdom and Germany. These were independent national initiatives mainly focussed on more traditional livestock farming areas where the environment was being threatened by rapid changes. In 1985 there was agreement on the first European framework for agri-environment policy, set out in Article 19 of Regulation 797/85. It permitted EC governments to offer farmers payments for agreeing to follow specific practices in 'Environmentally Sensitive Areas' that Member States would need to define. In 1987 the Regulation was amended to allow for the partial financing of approved agri-environment schemes in specified geographical areas from European Community funds. CAP funding was available for agri-environment measures for the first time.

The concept of 'agri-environment' was initially quite separate from that of 'extensification': producing less intensively on the same farm. By 1991, EC governments were able to reclaim part of the cost of three different but related schemes from the CAP budget:

- environmentally sensitive areas (ESAs);
- voluntary agricultural set-aside; and
- extensification of agricultural production (including organic farming).

Governments were not obliged to offer any of these schemes to farmers, and many countries ignored the new options, but this was soon to change. Continuing surpluses, concern about the CAP budget and pressure from international trade agreements within the GATT framework led to a reform of the Common Agricultural Policy in 1992. The 'MacSharry' reform, as it was known, was based on a partial shift from production subsidies to direct payments to farmers in some of the main agricultural sectors (cereals and livestock). This meant that intervention prices for agricultural products were reduced, and that support to farmers was given in the form of payments related to the area and yield of their arable land, as well as the number of their beef cattle, sheep and goats. The package of different policies also included three important regulations, the so-called 'accompanying measures' which were part of the overall thrust of the reform. These were:

- agri-environment schemes – with the rules applying from 1992 set out in Regulation 2078/92/EEC;
- early retirement incentives for farmers – with the rules set out in Regulation 2079/92/EEC;
- a farmland afforestation scheme – with the rules set out in Regulation 2080/92/EEC.

Regulation 2078/92 set the framework for most of the second generation of agri-environment schemes that spread throughout the EC from 1992 onwards. Unlike earlier legislation, such as Article 19, it was obligatory for the Member States to implement this policy and introduce agri-environment schemes. Funding became available on a much larger scale from the CAP budget (known as EAGGF or FEOGA). This was a change of fundamental importance.

The next and most recent reform of the CAP was part of a far-reaching agreement also covering the EU budget and the Structural Funds. Generally known as the Agenda 2000 agreement, it was concluded in spring 1999. The agricultural policy aspect of Agenda 2000 was based on a further transition within the CAP from price support to direct payments and a greater emphasis on measures concerned with agri-environment, improvement of farm structures, forestry and rural development. This aspect of the CAP was given a slightly enlarged budget and much greater political prominence, becoming known as the 'second pillar' of the policy. There was a clear signal that the second pillar would grow over time but the EU budget for this and other measures was fixed for the period 2000-2006, the lifetime of the Agenda 2000 agreement.

There were some significant changes to the policy on agri-environment in 1999 although most of the main principles remained the same. In legal and administrative terms it was no longer governed by a Regulation on its own. The EU agri-environment rules were included in a more all-embracing 'second

pillar measure', the Rural Development Regulation (Regulation 1257/1999), known as the RDR. The RDR, which applied from January 2000, is a synthesis of various rural development and structural measures which allows Member States to create regionally adapted and integrated rural development programmes. It contains rules for nine different policy measures. Chapter VI sets out the basic principles of an agri-environment measure, which is the only one compulsory for Member States to include in their rural development programmes for the period 2000-2006.

More detailed rules, both on agri-environment and on rural development programmes as a whole are to be found in a Commission 'Implementing Regulation' 445/2002. The text of both Regulations can be found in the Official Journal of the EU. Their full titles are as follows:

- Council Regulation (EC) No 1257/1999 of 17 May 1999 on support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF) and amending and repealing certain Regulations (OJ L160 26.6.1999 pp80-102).
- Commission Regulation (EC) No 445/2002 of 26 February 2002 laying down detailed rules for the application of Council Regulation (EC) No 1257/1999 on support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF) (OJ 15.3.2002 pp1-34).

In the preamble of the RDR, there is a clear statement of the importance of agri-environment in EU policy.

> 'Whereas, in the coming years, a prominent role should be given to agri-environmental instruments to support the sustainable development of rural areas and to respond to society's increasing demand for environmental services' (recital 29).

The many different aspects of introducing such 'instruments' are the subject of this manual.

## 1.4 Agri-environment within Regulation 1257/1999

Regulation 1257/1999 now provides the European legal framework for agri-environment schemes under the CAP. From 2000 onwards the EU contribution to running these schemes from the main CAP budget, the EAGGF Guarantee Section, amounts to around 4.7 million Euros per annum, about 10 per cent of total CAP expenditure. To this should be added expenditure from national and regional budgets, greatly increasing the total.

The Rural Development Regulation brings together measures on farm investment aid, Less Favoured Areas, forestry, early retirement schemes for farmers, assistance for food marketing and processing, training schemes and a range of other rural development measures as well as agri-environment. It is not exclusively targeted at farmers or forestry owners, although most of the measures are focussed on these two sectors. There is a possibility of providing assistance for a wider range of rural initiatives such as village renewal and some infrastructure projects. Member States must include agri-environment measures but can chose the proportion of their budget which they devote to this aspect of their rural development programmes; in most it falls within the range of 10-60 per cent.

The measures within the RDR need to be brought together in a coherent plan based on an analysis of the needs of rural areas and the rural environment. There may be a single plan for the whole country but many Member States, including Germany and Spain, have chosen to prepare separate regional plans. Consequently there are 68 Rural Development Plans for the EU as a whole. The RDR is built on a system of integrated planning and programming similar to the approach that is used in the EU Structural Funds. In this sense it is a notable departure from the previous system of individual measures, such as Regulation 2078/92. There is a specific requirement to promote more integrated and coherent constituent measures within the plan, for example agri-environment incentives should be

compatible with policies for the promotion of forestry. All expenditure has to be programmed in advance and it is difficult to accommodate any significant overspend in the budget available. As with the Structural Funds, there should be active participation by different stakeholders in the process of drawing up plans.

In January 2002 the European Commission unveiled its proposals for including the current Candidate Countries for accession in the operation of the CAP from January 2004 onwards. The paper suggested that the countries joining the Community at that point should participate in a slightly modified version of the RDR for the period up to December 2006. Most of the measures included would be the same as those in Regulation 1257/1999, with agri-environment obligatory. There would be an additional measure in the form of aid targeted at smaller 'semi-subsistence' producers. At the time of writing it was not yet clear whether these proposals will be modified in the negotiations that will take place in 2002 between the EU and Candidate Countries. The Commission has proposed financial allocations for each Candidate Country for 2004-2006 as well as proposed contents of Rural Development Plans. Part of the package is a higher level of EAGGF co-funding – 80 per cent is suggested. Any of these elements could be changed before the negotiations are complete. Nonetheless the outline of the RDR and the role of agri-environment within it are unlikely to alter significantly over the coming year. In the interim, some of the measures included within SAPARD, the pre-accession aid measure for agriculture, are beginning to be implemented from 2002 onwards. They are likely to contribute to preparations for applying parts of the RDR, despite the delays that have occurred in several countries.

Member States are given considerable scope to design and implement their own agri-environment schemes within the RDR. In principle schemes can be applied to all agricultural land in the EU, but the way in which schemes are designed and the level of uptake varies among the Member States. Furthermore, the RDR is one of the Community agricultural and rural policies for which the principle of subsidiarity has great importance. This principle implies that the European institutions should only be responsible for those tasks which are carried out more effectively at a European than at a lower level. Anything which is done more effectively at the national or regional level should remain the competence of the national or regional authorities. This principle reinforces the freedom of the Member States in designing their national agri-environment schemes. The RDR has simpler rules than its predecessor, Regulation 2078/92, leaving more discretion to national authorities.

## 1.5 Applying the European framework

There are certain principles which govern the functioning of every agri-environment scheme approved under the RDR. Some of these concern the essential character of agreements with farmers, others provide the structure for establishing and implementing schemes. These can be summarised in the following terms.

### *1.5.1 Core principles*

- Agri-environment schemes provide an incentive for certain forms of farm management but have a primarily environmental objective. In particular they should 'contribute to achieving the Community's policy objectives regarding agriculture and the environment' (Article 22 of the RDR).
- Participation in any scheme is voluntary for farmers. Thus, the only way to ensure good uptake rates is an adequate scheme design and appropriate compensation rates.
- Payments can be made only against agri-environment commitments that involve more than the application of 'usual good farming practice'. This is to ensure that farmers benefiting from support contribute more than simple compliance with national rules and codes of practice (Article 23).
- Payments are focussed on farm management, not on major investments.
- Payments are made on an annual basis, to compensate for the loss of income

entailed by signing an agreement, as well as any additional costs incurred. It is possible to provide an additional incentive where this is justified. However, agri-environment schemes are not a form of income support (Article 24).

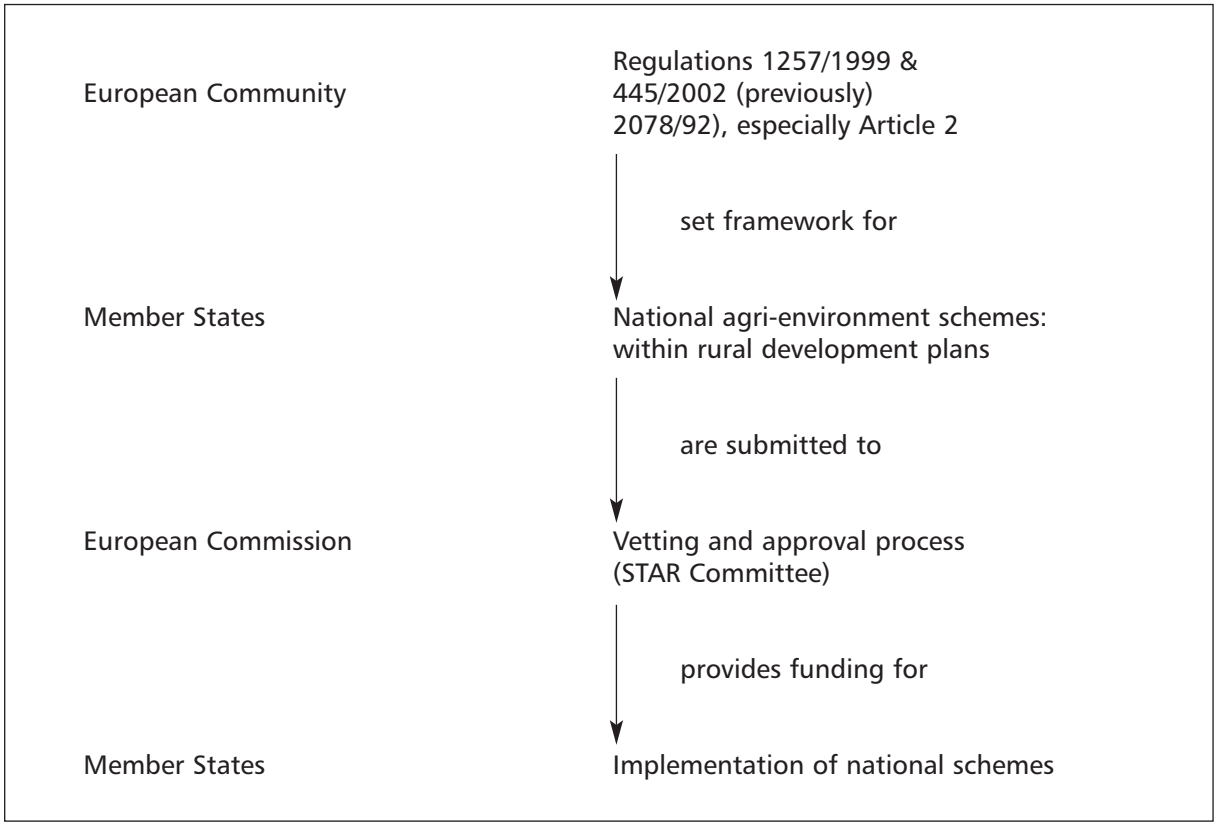
- The RDR sets a framework for all the national agri-environment schemes which qualify for funding from the CAP Guarantee Section (EAGGF) budget; Article 22 defines five broad types of scheme that can be established. National schemes have to fall under at least one of these categories (see section 1.6 below).

### *1.5.2 Application procedure*

- Agri-environment schemes to be proposed under the RDR must be presented as part of a coherent 'Rural Development Plan' covering all the measures that the Member State proposes to deploy for the period to 2006. The plan shows how the measures will contribute to meeting national and regional objectives. An environmental appraisal needs to be included.
- The Member States design individual schemes and submit them for approval to the European Commission, which may demand changes. Scheme development may be delegated to regional or other authorities, as appropriate.
- EU Member States each have a share of the total RDR budget available for them within the period to 2006. Similarly, new Member States joining the EU in January 2004 would have a total budget agreed for their rural development plans up to December 2006. The budget can be spent on measures reflecting national priorities, although both the plan and the specific implementation proposals for individual measures such as agri-environment have to be justified to the European Commission. The focus in this manual is on agri-environment, but the larger task of assembling and implementing a complete rural development plan now forms the framework for initiating agri-environment schemes.
- Once an agri-environment scheme has been approved by the European Commission within the relevant Rural Development Plan, its implementation is the responsibility of the Member State which must follow the guidelines set out in Regulation 445/2002. Significant changes to schemes need to be agreed by the European Commission.
- All schemes approved by the European Commission are part-funded by the EU out of the EAGGF. A 50 per cent contribution from the EU is the rule, 75 per cent funding applies in the less prosperous Objective 1 regions. Most parts of Candidate Countries can be expected to be in Objective 1 or an equivalent. Funding conditions for a central European country implementing an agri-environment scheme prior to EU accession would need to be agreed with the European Commission. As noted above an 80 per cent rate of co-funding may be available to new Member States from January 2004.

In Figure 1 the links between the main operational steps in seeking Commission approval for a new scheme are presented.

**Figure 1 European framework for schemes under Regulation 1257/1999**




## 1.6 Types of scheme defined by the RDR

Article 22 of the RDR sets out five broad types of objective to be promoted by agri-environment schemes receiving support from the CAP. These are supplemented by further objectives in relevant Articles of Regulation 445/2002. Together they amount to a list of acceptable objectives. Schemes are able to promote the following.

- Ways of using agricultural land which are compatible with the protection and improvement of the environment, the landscape and its features, natural resources, the soil and genetic diversity.
- An environmentally-favourable extensification of farming and management of low-intensity pasture systems (elaborated for livestock in Article 13 of Regulation 445/2002).
- The conservation of high nature-value farmed environments which are under threat.
- The upkeep of the landscape and historical features on agricultural land.
- The use of environmental planning in farming practice.
- Rearing farm animals of local breeds indigenous to the area and in danger of extinction.
- Preserving plant genetic resources naturally adapted to the local and regional conditions and under threat of genetic erosion.

The last two objectives are not in the main Regulation, but in Article 14 of Regulation 445/2002. This Article states that the local breeds and plant genetic resources must 'play a role in maintaining the environment in the given area to which the measure will apply'.

Most of these options are self-explanatory; some further information on individual measures is outlined

in chapters 6 and 7. It should be noted that some options are narrowly defined, while others allow for wide interpretations. Most schemes for protecting or enhancing areas of farmland of conservation or landscape interest fall into the first four categories. These also provide considerable scope to the Member States for introducing schemes that support existing extensive and/or traditional farming systems. Concession from conventional to organic agriculture falls into the first two categories. Support for the management of abandoned farmland is also permitted where it is essential for maintaining environmental quality eg by decreasing the incidence of forest fires. This does not mean, however, that all abandoned land is necessarily eligible for agri-environment payments. Financial support for public access on farmland is no longer permitted, a change from previous practice under Regulation 2078/92.

Under Regulation 2078/92 a distinction was made between 'horizontal' and 'zonal' measures in agri-environment schemes. *Zonal schemes* were defined as measures which cover a geographically delimited area which is 'homogenous in terms of the environment and the countryside'. A typical example of this type are the Environmentally Sensitive Areas in the UK (see section 7.3.3 for further details). *Horizontal measures* were those schemes that allow for the application of one or two of the options defined in Articles 22-24 throughout the territory of a Member State (or an administrative region). Payments for conversion to organic farming are such an option: it can be taken up wherever the farm is located geographically. These measures had to be implemented within a defined national agri-environment programme and, where appropriate, supplemented by zonal schemes.

The RDR does not refer to horizontal or zonal measures but it remains a convenient way of describing the options available and the schemes that have been implemented in many Member States. Consequently, we use these terms in some chapters of this manual.

While all the above options deal directly with land management issues, a second important type of scheme is also included in the RDR. Article 9 provides for training schemes for people involved in agricultural and forestry activities to improve their knowledge in several areas including farming or forestry practices compatible with protection of the environment (see chapter 9 for further details on training schemes). Training initiatives are likely to be particularly important where agri-environment schemes are introduced for the first time, and where no attention has been given to the environmental training of farmers in the past.

# 2 The relevance of agri-environment policy: environmental and policy issues

## 2.1 Introduction

This chapter sets out some reasons why agri-environment policies are of relevance to Central and Eastern European countries and considers the contribution that they can make to biodiversity objectives.

The perspective of individual countries in the region will vary. Some are already planning or implementing a national agri-environment policy – Slovenia is a clear example. Others are moving forward less rapidly but mindful of both their own priorities and the obligations which EU membership will bring. Most Candidate Countries either have established or plan soon to begin pilot agri-environment schemes. These pilots are expected to contribute significantly to preparations for implementing agri-environment within the RDR in due course, as well as addressing immediate environmental issues. SAPARD, the pre-accession assistance Regulation for agriculture, offers EU aid for pilot schemes and most Candidate Countries have chosen to include at least one pilot scheme in their bids for funding. Unfortunately, the provision of EU funds for these pilots and, indeed, other SAPARD initiatives has been delayed in most Candidate Countries and relatively little progress has been made at the time of writing in spring 2002. However, a number of pilots are expected to start over the next two years.

**Box 1 SAPARD Pilot agri-environment projects**

Pilot projects submitted to the European Commission under Article 2 of SAPARD (Regulation 1268/1999) are subject to rules and conditions which are not precisely identical to those in the RDR, which is the focus of this Manual. Those considering the development or submission of pilot projects under SAPARD should consult the European Commission in advance. DG Agriculture unit F.4 has produced a useful guidance document which covers most issues. It is 'Guidance on agri-environment pilot actions within SAPARD Programmes' D (2001) 490477-Annex.

In the longer term the main challenge is to develop agri-environment measures which both meet national requirements and fit the model laid down in the RDR. This is likely to require considerable preparation, as many EU countries found when agri-environment measures first became obligatory in the early 1990s. Countries planning to introduce full scale national schemes in early 2004 will have to submit draft rural development plans to the European Commission well in advance, so the time available is already limited.

For countries within CEE that are not currently EU candidates many of the principles of agri-environment policy will be relevant, even is there is no requirement to comply with the EU model

embodied in the RDR. There are arguments to comply for learning from EU experience when designing an appropriate national scheme. Consequently, it is hoped that this Manual will be relevant to a wider range of countries than the current list of EU candidates.

This chapter is divided into sections concerned with:

- the political contribution of agri-environment policy to environmental and other concerns in CEE countries;
- the potential contribution that can be made to biodiversity conservation, a core theme of the manual;
- the role of agri-environmental incentive schemes in relation to other policy instruments for encouraging appropriate land management.

## 2.2 The environmental relevance of agri-environment schemes

The principle behind agri-environment schemes is that farmers should receive payments in return for accepting certain environmental conditions or adopting specific practices or goals. In western European countries there has been a rapid growth in the use of policies of this kind since the early 1990s. This is not only because of the introduction of the Regulations described earlier, but also a response to the need for new policy instruments to influence farmers' behaviour. Payment schemes of this kind are complementary to other policies, such as education and information for farmers and environmental regulations. They are not a substitute for regulations (see section 2.4).

Most countries need a range of different policy instruments for management of the countryside and protection of biodiversity. For example, it is important to have effective laws providing protection for rare species and preventing serious water pollution. In protected areas of particularly high conservation value, it is usually necessary to have more complete control of land use. However, on farmland outside these protected zones it can be difficult to achieve the appropriate form of management. This is a serious concern in most European countries, since farmland contains a large number of important semi-natural habitats and hosts many rare and more common species.

Unfortunately, changing technologies and economic pressures have resulted in major changes in farming practice in most of Europe in recent decades, and often there is a conflict between economically efficient agricultural methods and the maintenance of high environmental standards. It can be difficult to persuade farmers to continue with a traditional form of management which is no longer economically attractive, or to adopt new environmentally sensitive methods without a payment or other incentive. Information or regulations on their own may not be sufficient.

Up until recently, the use of payments to farmers for environmental management has been limited in Central and Eastern Europe, with some exceptions such as the Czech Republic. However, there are many situations in which payments to farmers are particularly relevant.

a. There are large areas where farmland of high nature value is being neglected because it is no longer attractive for farmers to continue with traditional management practices, such as where grazing has been abandoned or greatly reduced. Typically this leads to a process of invasion by shrubs on valuable grassland habitats. Similarly, the traditional management of hay meadows may cease because it is no longer worthwhile for farmers, as has occurred in parts of the White Carpathians. A financial incentive may be the best way of persuading farmers to continue practices that are important to maintain the conservation interest of a site. Abandonment of traditional practices has become widespread in parts of CEE.
b. There are areas where high nature value farmland is threatened, not by abandonment, but by intensification. With changing economic conditions it may become attractive for farmers to plough up permanent grassland, apply

fertiliser to land where it has not been used before, introduce or increase the use of pesticides, etc. Changes of this kind may greatly degrade the conservation interest of the area, but usually will be difficult to control unless the land is within a strictly protected area. Payments for farmers may be an effective means of encouraging them to continue with existing types of farming, rather than adopting a more intensive approach.

c. Agreements with farmers can also be an effective means of securing the enhancement and restoration of habitats. For example, it may be appropriate to pay farmers to restore degraded saltmarsh, heathland or wetlands. In most cases it is difficult to persuade them to accept the burden of improving the environment without some form of payment.

d. Conversion to organic farming may be an important means of both reducing environmental pressures and creating new market opportunities. Financial assistance often is required to encourage farmers to take the risks of conversion.



Landscape produced by traditional agriculture in the Romanian Carpathians

Many parts of CEE experienced a reduction in the use of fertilisers and pesticides and a decline in intensive agriculture in the 1990s. This will have relieved some environmental pressures in the short run. However, the reorganisation and recovery of the agriculture sector is underway in large parts of the region, and there are new pressures on farmers to compete in a more open market. This will lead to new environmental concerns. As the OECD commented in its report on *Agricultural Policies in Transition Economies*, farms '...will tend to become more specialised, increasingly mechanised, and will use more fertilisers and chemicals compared to present levels. Such developments are necessary to improve economic efficiency, but they could also have adverse environmental effects. Under these circumstances, environmental protection considerations will need to become an integral part of policies affecting agriculture.' (OECD, 1997).

Agri-environment schemes are not only applicable to biodiversity and landscape concerns. They are equally relevant in situations where agriculture is a primary source of water pollution, a cause of soil erosion or other environmental problems exist.

It is generally expected that agri-environment measures of this kind will continue to be an important element of the CAP for many years. Candidate Countries will need to consider both the long and the short term perspective in deciding the types of scheme that they wish to include in their rural development plans. It should be noted that the three most recent Member States to join the Union, Austria, Finland and Sweden, all negotiated sizeable agri-environment programmes during the pre-accession period. They now have relatively large 'second pillar' programmes, putting them ahead of other Member States that are considering the use of modulation to move their CAP receipts from the first to the second pillar.

Adjusting current agricultural policies to the CAP is a sizeable task for CEE countries preparing to join the EU. Building up agri-environment policy is part of this exercise, and not a secondary 'bolt-on' activity after attention has been given to the main agricultural commodity regimes for cereals, milk, etc. There are a number of reasons for governments to begin work on a national programme, and to set up potential pilot projects, well in advance of the date of accession, as many have done.

a. The RDR represents a novel policy departure in many CEECs, and will require more preparation than other CAP measures more familiar to agriculture ministry officials. Within the existing EU, most Member States missed the deadline for submitting their national agri-environment programmes to the European Commission at the end of June 1993. In some cases, it has taken several years to establish a working national programme. It would not be surprising if CEECs also needed a period of several years to consider and develop their own policies to the point where they can be implemented effectively on a national scale.
b. Establishing an agri-environment programme needs not only a new approach to agriculture policy, but also may require institutional changes. The creation of new organisations or significant changes in the role of existing bodies may be necessary. New policy mechanisms are involved, perhaps requiring information and data not previously available, and the ability to develop an appropriate working relationship with farmers around a potentially unfamiliar theme. All this takes time.
c. The indications from within the EU are that the agri-environment approach is likely to grow in importance in the CAP and will continue to interact with other areas of policy, such as the relatively reformed system of aid for Less Favoured Areas. It will be necessary to become familiar with effective ways of adapting a policy measure, designed originally for application in western Europe, to the different conditions applying in CEECs.
d. One of the best ways of developing an effective national programme is to experiment with practical pilot projects that can be monitored and evaluated. The results can make a valuable contribution to the design of a larger programme.
e. Changes in agriculture may be rapid during the next few years, and there could potentially be major consequences for biodiversity and other aspects of the rural environment. There are good arguments for introducing a system of incentives prior to, rather than after accession to the EU.

Taking a more strategic view of agricultural policy, there is a global trend away from established forms of production support towards 'decoupled' types of assistance for farmers that are not linked to their level of production. In Europe, trade concerns are influencing the evolution of agricultural policy, and are causing many governments to develop decoupled policies giving direct aid to farmers. These are generally linked in some way to the social and environmental benefits of farming, rather than to the level of output. The WTO is one of several pressures leading to the growing emphasis on second pillar measures in the CAP.

Agri-environment policy is part of a wider trend towards integrated rural development being debated and adopted in a growing number of OECD countries. Integrated rural development implies linkages between economic, environmental, social and spatial aspects of rural life, rather than a primary focus on agriculture. In the report quoted above, the OECD has argued that the CEECs should avoid the high level of production subsidies typified by the CAP, and should advance directly from centrally planned policies for agriculture to more integrated rural development policies in future. Agri-environment schemes should have a significant role within integrated policies of this kind.

## 2.3 Contributing to biodiversity conservation on farmland

Biodiversity conservation is one of the most important environmental objectives which can be advanced by the use of schemes focused either on nature conservation specifically or on other goals, such as reduced water pollution or conversion to organic farming.

The word 'biodiversity' is a contraction of biological diversity. Diversity is a concept that refers to the range of variation or differences among a set of entities; biological diversity thus refers to variety within

the living world. The term 'biodiversity' is indeed commonly used to describe the number, variety and variability of living organisms. This very broad usage, embracing many different parameters, is essentially a synonym of 'Life on Earth' (WCMC, 1992). The Convention on Biodiversity, adopted during the Rio Conference in 1992, provides an international framework for promoting the conservation of biodiversity. Within the EU there are important environmental laws designed to protect a wide range of habitats and species on farmland and elsewhere. The birds and habitats Directives are of particular importance.



Great Bustards (*Otis tarda*) in Hungary depend on the grassland habitats created by domestic herbivores

For hundreds of years farmers have used their land for food production. The biodiversity aspects of the resulting agricultural landscapes are best understood by considering the history of these landscapes and stability of agricultural land use in the past. As a result of past management, agricultural landscapes are valuable as permanent habitats for many organisms that are now dependent on them since their natural habitat has been destroyed. However, their value has been decreased by agricultural intensification, specialisation, marginalisation and abandonment, especially since the Second World War. As a result of this, many species are threatened or declining and the management of many farmed habitats has become problematic. The conservation status of important groups of fauna and flora in eight CEE countries is shown in Table 1.

**Table 1 Status of plant and animal species in eight CEECs**

| Country | Status | Plants | Mammals | Birds | Reptiles | Amphibians | Fish | Insects |
|---|---|---|---|---|---|---|---|---|
| Czech/ | endangered | 240 | 11 | 15 | 10 | 13 | 8 | 83 |
| Slovak R. | vulnerable | 239 | 17 | 53 | 5 | 9 | 3 | 11 |
| Slovakia | endangered | 234 | 14 | 26 | 4 | 7 | 10 | ? |
| | vulnerable | 573 | 19 | 26 | 7 | 11 | 0 | ? |
| Poland | endangered | 36 | 17 | 21 | 0 | 0 | 7 | ? |
| | vulnerable | 72 | 26 | 29 | 0 | 2 | 6 | ? |
| Hungary | endangered | 41 | 7 | 21 | 3 | 0 | 2 | 41 |
| | vulnerable | 127 | 7 | 40 | 0 | 1 | 0 | 145 |
| Slovenia | endangered | 34 | 4 | 21 | 8 | - | 23 | 15 |
| | vulnerable | 77 | 26 | 53 | 11 | 18 | 8 | 25 |
| Estonia | endangered | 47 | 4 | 9 | 0 | 2 | 2 | 2 |
| | vulnerable | 37 | 2 | 8 | 0 | 0 | 0 | 6 |
| Lituania | endangered | 57 | 1 | 12 | 2 | 0 | 2 | 29 |
| | vulnerable | 57 | 0 | 15 | 0 | 0 | 0 | 29 |
| Latvia | endangered | 90 | 5 | 17 | 2 | 2 | ? | ? |
| | vulnerable | 77 | 1 | 12 | 0 | 2 | ? | ? |

Sources: IUCN, 1993; CEEWEB, 1993; Ingelog *et al*, 1993; Wraber and Skoberne, 1989; Andrzejewskiego and Weigle, 1991; Zarzycki and Kazmierczakowa, 1993; Rakonczay, 1990; Barus, 1988/89/92; IUCN, 1996, Red Book Slovakia, 1996.

The Carpathian biogeographical region provides an example of longstanding relationships between agricultural management and nature conservation value. The Carpathian mountains formed the backbone for the survival of species during the Pleistocene period. As a result of this, the number of endemic species is very high. Over a long period the mountainous and hilly semi-natural grasslands have been managed for extensive hay-making and sheep grazing. This has created a 'high nature value' farmland.

**Box 2 Hilly landscapes on calcareous soils in the White Carpathians on the boundary between the Czech and Slovak Republics**

**vegetation type:** xerothermic grassland types with bushy vegetation (Cirsio-Brachypodion pinnati = continental steppic grasslands)

**management:** traditional grazing and hay making in small patches

**landscape pattern:** traditional landscape with dispersed settlements on hilly slopes

**protection status:** protected

The White Carpathians are a mountain range stretching for 60 km along the Czech-Slovak border. The main reason this region was given legal protection was to preserve the extensive areas of species-rich grasslands and natural deciduous forests. The area contains 85 managed nature reserves of up to 700 ha, and consists of mainly hay meadows and pastures. It is well documented by botanists and is famous as an orchid habitat. Forty-four orchid species have been recorded, including rare species such as *Epipactis leptochila, Ophrys fuciflora* and *Limodorum abortivum*.

Previously the farmed area was nationalised and managed to a large extent by state and co-operative farms. The farms were obliged to mow the grasslands every year in June or July, under the instructions of the Directorate of the Protected Landscape. The area has since been privatised, and the former farmers have started to manage the grasslands. However, over a large proportion of the area management has ceased. The result of this change in ownership is that bushes are invading the grasslands quickly, and will continue to do so if management does not begin again soon.

This problem of management of hilly landscapes is typical of several areas in Central Europe. The problems can be summarised as: lack of cattle for grazing, a lack of finance for investments, lack of management traditions amongst the new owners, and the weak economic position of the new, private owners.

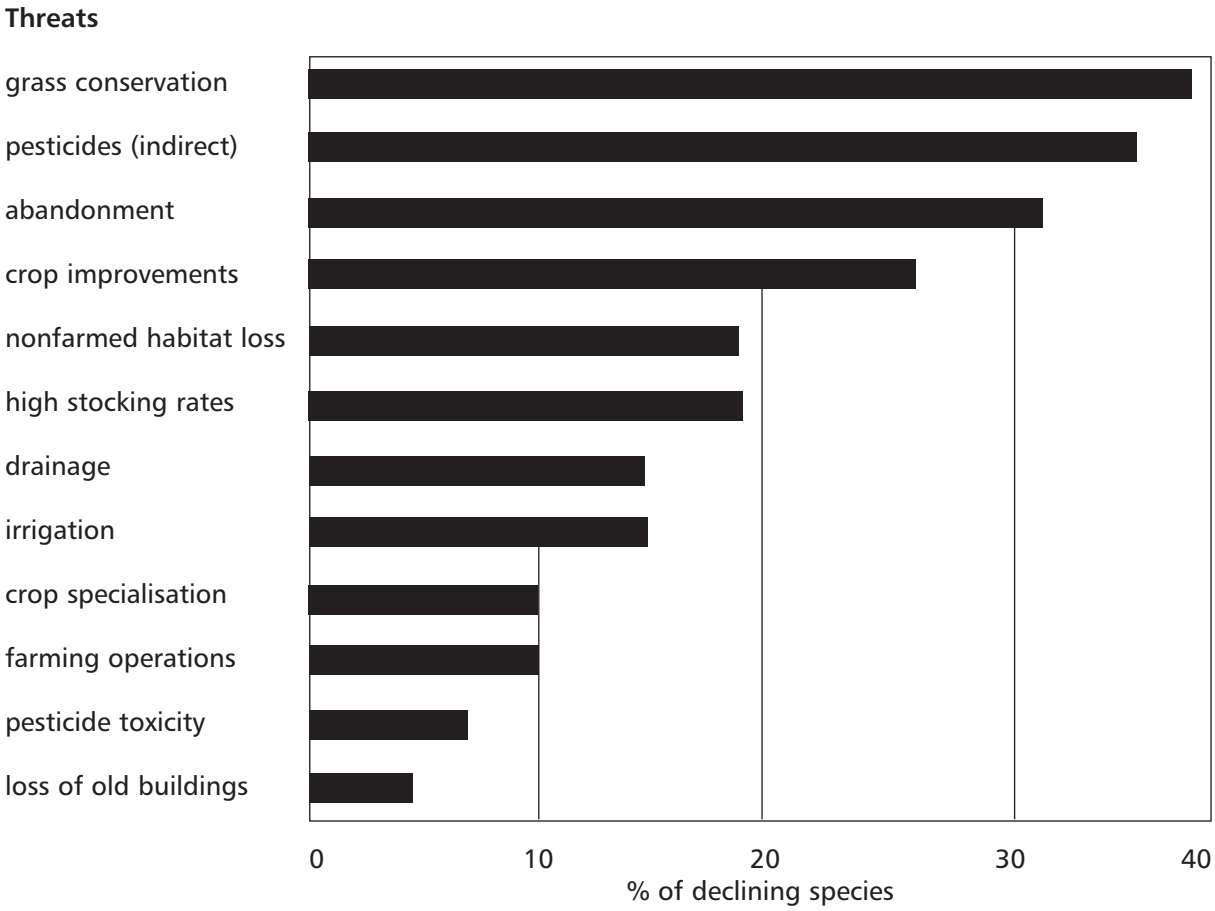
Four principal factors, which often occur simultaneously, are thought to be contributing to the decline of biodiversity in agricultural landscapes:

- changes in land use and cropping patterns, including specialisation at a regional and farm level;
- intensification of existing land use;
- abandonment of existing land use and traditional practices;
- changes in environmental conditions in agricultural landscapes, some caused by changing management practices, others by external conditions, such as the deposition of pollutants.

The precise impact of individual changes in management on particular species is often poorly understood, but the overall significance of certain trends is increasingly clear. Factors such as the loss of semi-natural grassland, conversion of hay meadows to silage production, reductions in invertebrate populations because of the use of pesticides, abandonment of traditional fodder crops and removal of many small habitats in farmed landscapes have contributed to the decline of many once common species as well as rarities. Figure 2 shows some of the most important threats to farmland bird species.

**Figure 2 Agricultural intensification factors that threaten farmland bird species in Europe**

*(After Tucker and Heath, 1994)*




Agri-environment schemes provide a means of trying to redress many of these problems. It is possible to prevent damaging intensification, maintain appropriate forms of existing management and enhance conservation value if farmers are willing to participate. Article 22 of the Rural Development Regulation potentially can cover nearly all aspects of agricultural pressure on biodiversity. For instance, there is the possibility of supporting extensive farming practices to protect semi-natural grasslands, so addressing the problem of undergrazing in large parts of CEE.

## 2.4 Agri-environment vis-a-vis agricultural and environmental policy

It is important to remember that agri-environment schemes are only one policy instrument amongst several available for addressing biodiversity conservation on farmed land. As farming is the biggest land use in most European countries, its influence on natural resources, landscapes and wildlife is very great. Nevertheless, incentive schemes for agriculture are relatively new. Traditionally, farmland had received less attention than more 'natural' areas and the main conservation policy initiatives were legislative and land use planning measures, like the declaration of protected areas or the banning of certain agricultural practices such as stubble burning. As these proved insufficient to protect agricultural landscapes and wildlife against modernisation and intensification processes, new measures had to be developed. Foremost among the latter were agri-environment schemes that offered financial incentives for farming in an environmentally sensitive way. Other approaches have included:

- purchase and subsequent management of agricultural land for conservation purposes;
- stronger environmental and nature conservation legislation;
- initiatives to market the products of high nature value farming systems at a

premium price, often in collaboration with conservation bodies. This can provide an economic incentive to farmers for maintaining wildlife friendly management methods;

- landscape planning;
- environmental training for farmers;
- improved advice and information for farmers.

These measures, together with agri-environment incentive schemes, make up a menu of possible measures. Clearly, even the best designed and implemented agri-environment schemes alone cannot resolve all environmental problems on farmland or protect more than a proportion of agricultural habitats and species. They need to be supported by the right environmental and agricultural policy framework. Among the relevant environmental policies are:

- the legal protection of certain landscape elements, specific habitats or geographical areas;
- appropriate landscape planning programmes;
- education, training and awareness raising initiatives;
- aid for capital investment and land purchase.

Figure 3 illustrates the possible use of different approaches to environmental protection in the wider countryside or on individual key sites; combining different measures to suit national and local circumstances is likely to be more effective than excessive reliance on a single policy alone.

**Figure 3 Hierarchy of measures for conserving habitats and landscape**


On the other hand, it is also important that agricultural policies do not favour environmental destruction arising from the intensification of production. As the RDR itself insists, there is an essential role for a baseline of environmental standards for farming. Research and training programmes should take account of the need for environmental protection as well.

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# 3 Establishing a national agri-environment programme - the policy background

## 3.1 Introduction

This chapter aims to provide advice for formulating national agri-environment programmes, and for creating political commitment. It also aims to set out the financial limitations for a pilot scheme.

Establishing an agri-environment scheme requires both technical and political skills, therefore working with stakeholders to continuously improve a scheme is vital. Feedback is essential for success and should therefore be used effectively. This implies careful consideration of communication with stakeholders. Evaluation and adjustment of the recommendations is beneficial. The approach applied needs to be sensitive to the needs and beliefs of forums, administrative bodies and other stakeholders. The final proposal should be widely acceptable for the varied stakeholders.

## 3.2 Operational objectives

This chapter aims to:

a. build understanding of the steps involved in developing a national agri-environment programme;
b. enable a programme planner to collect feedback from stakeholders to improve proposals;
c. assist a planner with identification of the most important stakeholders;
d. provide ideas on how to develop positive momentum for an agri-environment programme by building alliances with stakeholders;
e. help identify potential financial limitations for implementation of an agri-environment programme in one or two pilot areas, determine a minimum and a maximum budget, and suggest potential funding sources.

## 3.3 Designing a national agri-environment programme

A national agri-environment programme can take different forms depending on the situation. The minimum plan presents suggestions and recommendations, and the maximum outlines an action plan, including a description of organisations, tasks, time frames, results, coordination and budgets.

**Box 3 Indicative steps in the development of an agri-environment programme**

| | |
|---|---|
| Relation to already existing policies<br>Identification of problems<br>Defining basic policy objectives | National context |
| Promoting political co-ordination<br>Identifying lead organisation for scheme administration<br>Deciding location of national agri-environment problems<br>Setting environmental objectives<br>Setting nature conservation priorities<br>Deciding whether to have horizontal and/or zonal schemes | Main design elements |
| Encouraging stakeholder participation<br>Identifying financial limitations | Building commitment |
| Deciding whether to use selection criteria schemes<br>Defining geographic boundaries | Scheme design |
| Gathering environmental and socio-economic base-line data<br>Providing scientific and political justification for area selection | Data collection |
| Defining management prescriptions<br>Defining eligibility criteria for farmers<br>Defining time period for management contract<br>Defining criteria for setting payment level | Management agreements |
| Ensuring implementation is co-ordinated<br>Planning for application handling<br>Organising payments<br>Designing control measures for ensuring contract compliance<br>Training administrative staff<br>Providing information and advice to farmers | Administrative issues |
| Setting environmental standards<br>Designing indicators<br>Developing methods for monitoring<br>- environmental effects<br>- effects on incomes and employment<br>- effects on agricultural production | Monitoring procedures |
| Developing means for measuring<br>- scheme uptake<br>- farmers' attitudes<br>- efficiency<br>- effectiveness<br>- aims<br>Revision of national programme/schemes | Evaluation |

## 3.4 Establishing a working group of stakeholders

A national working group should be established to take a leadership role during the preparation of a national agri-environment programme. A successful outcome requires the compilation of expertise from different disciplines, proper participation/representation of stakeholders and political commitment. During the work several problems of a technical or political nature can occur. To solve them the appropriate involvement of stakeholders is essential.

The term 'stakeholder' refers to the various institutions, social groups and individuals which possess a direct, significant and specific stake in an agri-environment programme. A 'stake' may originate from the institutional mandate, historical reasons, related livelihood dependence, economic interest or a variety of other capacities and concerns. In general, stakeholders are aware of their interest. They usually possess specific capacities (eg knowledge, skills) and/or competitive advantages (eg mandate). Stakeholders are usually willing to invest specific resources (eg time, money, political authority) into preserving their interest.

It is likely that stakeholders can be found among the following.

a. *Decision makers in ministries and the Parliament* because at some point they are likely to take political decisions related to the scheme. Relevant ministries may be: agriculture, environment, finance, foreign affairs and others responsible for EU accession, EU assistance programmes of the EU or harmonization of legislation. A problem for the working group may be that politicians tend to change their position relatively often.
b. *Officials* in ministries working on agriculture and environment who prepare policies and who are likely to stay despite political changes. These people are useful as they can ensure continuity in the ministries on this issue.
c. *Farmers associations and communities* that will be affected by an agri-environment programme. Farmers and rural communities may not only be affected in their income but also in their knowledge, capacities and aspirations for the future. The possession of rights to use natural resources will be changed, and an agri-environment programme may affect unique cultural, religious and recreational values. The success of a programme depends on participation of farmers and their acceptance of the scheme. Farmers participate on a voluntary basis, which implies that a programme should be attractive for them.
d. *Government institutions and administrative authorities* that deal with natural resource use on a daily basis as part of their mandate. These include National Park, freshwater and tourism authorities, agricultural extension services and district and municipal authorities. They offer unique knowledge and skills for the management of natural resources.
e. *Research institutes and universities* that are likely to have agri-environment issues at the heart of their professional concerns. They can potentially steer a debate on agri-environment issues and policy development in scientific as well as political circles.
f. *Public interest organisations* (environment, nature conservation, consumer protection) due to their concerns on agri-environment issues. They may have a role in providing knowledge and skills as well as representing the public.
g. *Business and industries* because they can be significantly affected by the management agreements.

The working group should develop good relationships with selected stakeholders because they can reinforce the work of the working group in many ways, such as:

- providing feed-back on proposals of the working group to make them more realistic;
- communicating with other people in their network about the issue;
- supporting the proposals of the working group when they are asked to do so.

To develop mutual trust between the working group and stakeholders outside the working group, the working group should make an inventory of stakeholders' views, requirements and wishes, and should communicate according to their needs. Box 4 provides some relevant suggestions for categorising stakeholders.

**Box 4 The profile of a stakeholder**

- What do they already known about agri-environment schemes?
- What are their views?
- Is their viewpoint/knowledge needed?
- What are their interests?
- What are their fears and uncertainties?
- What resistance/opposition can be expected?
- What co-operation can be expected?
- Which previous experiences (positive or negative) will influence their attitude?
- What is their level of education?
- Which communication means do they use (eg newspaper, letters, verbal communication)?

According to what is considered possible and desirable (eg in legal, political, financial and social terms) by the working group it can decide whether and how to involve stakeholders. It may:

- ignore the interests and capacities of the stakeholders and minimise their relationship with the working group;
- inform the stakeholders about relevant issues and decisions;
- actively consult stakeholders about such issues and decisions;
- negotiate with them on an open basis (thus effectively involving them in the decision-making process);
- share with them authority and responsibilities in a formal way.

Whenever possible positive, friendly and/or mutually beneficial relationships with stakeholders should be sought.

## 3.5 Communication tools

The national working group seeks to create a positive momentum for the implementation of an agri-environment programme by building alliances with stakeholders and leaders of stakeholder groups. To develop cooperation with stakeholders, certain steps are necessary to create understanding for the work, acceptance of its importance, and ultimately support. In this process with stakeholders high quality communication is of crucial importance.

Communication is about sending messages in the most effective way to achieve change. In communication there is at least one sender and one receiver involved, but it is likely that the senders and receivers are multiple. The challenge with communication is to get a message understood by the receiver in exactly the same way as it was intended to be understood by the sender. This is an art, because it is very difficult not to make mistakes in communication. Professional communicators work with a communication plan that includes the following elements:

- explicit and clear communication target;
- justification of the target;
- sender;
- target group (receivers);
- message;
- communication means;
- timeframe;
- feed-back.

*Communication targets* can be set at four different levels. At these different levels the communication aims that the stakeholder:

- is informed about something;
- participates in something;
- has changed his/her attitude towards something;
- has changed behaviour or actions.

In order to set a realistic target, the likely resistance of the stakeholder should be taken into account. Usually there is a high resistance to new ideas. When resistance of the stakeholder is high, it is wise to target 'the informed stakeholder'. It is important not to ask too much from a stakeholder because this can lead to frustration and make further communication more difficult. Try to look for an early success. To avoid misunderstandings and frustration, the working group has to make an effort to understand the stakeholder well so that messages can be adapted to the needs of the stakeholder. This is why it is so important to make a profile of each stakeholder. Some stakeholders will be more open to change than others, which will make it easier for the working group to co-operate with them.

*Justification, sender, target group and message* all need to be made explicitly clear. Why is it necessary to communicate at all? Which person will communicate with stakeholders: the project co-ordinator or other working group members as well? Who will communicate with whom? What exactly will the message be?

*Communication means* can be both one-way, from sender to receiver or two-way, from receiver to sender. Means for one-way traffic include written communication such as memos, letters, brochures, leaflets, reports and manuals, as well as (audio)visual communication such as films and videotapes. Means for two-way traffic are formal and informal presentations and discussions. What is appropriate depends on the situation. Personal communication (two-way traffic) is more reliable for complex and sensitive messages because it allows the sender to adjust the message according to feedback from the receiver. Written communication (one-way traffic) is sufficient for instruction. For background information almost all communication means can be applied.

*Time frame and feedback* are important as well. When do you communicate? How do you organise feedback? Is there a structure for dealing with feedback?

## 3.6 Financial limitations

An agri-environment programme provides financial incentives to farmers for doing something on their land that is considered important by society. There are costs involved in the implementation of an agri-environment programme, including:

- payments to farmers who have signed a management agreement;
- a training scheme for farmers;
- administration of the scheme;
- a monitoring and evaluation programme.

It is likely that most of the budget will be used for payments to farmers. Administration of the programme may use a substantial part of the resources (between 5-20% of the budget). Also, the monitoring and evaluation programme should be relatively well-funded to collect useful data for improvement of the design of a national agri-environment programme. See chapters 8 and 9 for more information.

Before designing schemes, it is important to know the financial limitations in advance. In order to 'regulate' the ambitions of the scheme. It is possible to work with two budgets: a minimum and a maximum budget. The budgets should be used as a financial framework for the following chapters.

## 3.7 Creating support for a pilot agri-environment scheme

By involving sufficient stakeholders in the design of an agri-environment programme, it is more likely to gain political support. Key stakeholders include the following.

a. *Representatives of farmers associations and communities.* Farmers and rural communities may be not only affected through their income, but also their knowledge, capacities and aspirations. The possession of rights to use natural resources will be changed and a scheme may affect unique cultural and recreational values. As the success of a programme depends on participation of farmers, which is on a voluntary basis, it is important to ensure that the scheme is attractive to them.
b. *District, municipal and National Park authorities.* These organisations deal with natural resource use on a daily basis as part of their mandate. Their authority should be respected in the design of the scheme. Their knowledge should therefore be used through ensuring they are involved during planning.
c. *Farm advisors.* They offer unique knowledge and skills for the design of appropriate management agreements.

A working group may need to be restructured to incorporate all relevant stakeholders. Different options for the working group include:

a. incorporating members to work at national and local level as one team;
b. creating a sub-group to work on the pilot scheme, dividing the tasks between the two groups and ensuring coordination and cooperation among the groups.

It can be beneficial to organise a presentation of the programme after a working group is established and the main design elements are clear. If the (local) community is not formally informed it is possible that inaccurate information about a project could circulate informally, which could result in resistance developing. A useful strategy can be to win the support of relevant stakeholders, provide them with sufficient information and encourage them to disseminate it at a public meeting. It can also be valuable for the planners to give a presentation. It is useful to take the following aspects into account:

- the need for an explicit and clear communication target;
- justification of the target;
- the sender;
- the target group (receivers);
- the message;
- the communication means;
- the timeframe;
- feed-back.

Concerning the *message, communication means* and *feed-back,* it is important not to create expectations which are unattainable, and to provide a realistic view of the availability of funds and the possibility for delays before implementation. Suitable communication means are forums, training sessions, exhibitions, a press event, or a presentation during a farmers' gathering or market fair. It is important to have the possibility for two-way communication. It is useful to ensure that people are able to ask questions and have them properly answered. It can be useful to have a person who is responsible for the Public Relations during the design phase of a scheme.

# 4 Design of agri-environment schemes

## 4.1 Introduction

Environmental objectives are defined in this chapter, as well as initial conservation targets, up-take targets, and preliminary global management packages. This is only a first step, as a description of how to collect more data is outlined in chapter 6, and guidance on how to formulate management packages is provided in chapter 7.

Administrative issues are equally important for a well functioning scheme. This chapter deals with some of these issues, and chapter 8 provides further detail. The same applies to the monitoring and evaluation programme.

## 4.2 Operational objectives

Chapter 4 aims to provide guidance for:

a. identifying the environmental and socio-economic problems which can be addressed in a scheme, and formulating initial environmental objectives and targets;
b. clearly defining the characteristics or even the boundaries of an area in the case of zonal schemes;
c. identifying the methods of selecting and highlighting appropriate agri-environment measures;
d. discussing how to achieve political coordination, and an efficient administrative set-up;
e. identifying stakeholders in schemes and creating positive momentum by building alliances with stakeholders.

## 4.3 Selection criteria

The selection of schemes must be well justified and understood by the government and those who are funding the scheme. The best way of achieving this is through using a number of criteria. Each of the selection criteria presented in Box 5 may be more or less important, depending on the national conditions.

**Box 5 Selection criteria for schemes**

*Environmental problems/biodiversity value of the area.* The area contains farmland of high biodiversity value, and agriculture practice is relevant to the maintenance or enhancement of this biodiversity.

*Agricultural use.* Farmers use a large proportion of the area. It is not an abandoned area in which farming activity needs to be restored.

*Urgency.* There is a problem that needs to be addressed urgently. If the agri-environment scheme is not started soon valuable habitats, species or traditional production methods will be lost permanently or further environmental problems will arise.

*Local support.* There is an organisation in the area which is capable of initiating the programme. For example, an organisation capable of raising the interest of farmers about the programme.

*Data availability.* To minimise resources needed for baseline data, and to prevent delays encumbered by a need for baseline data collection, ideally there should be substantial data available for the scheme.

*Clear and simple management agreements.* Complicated management agreements increase the risk that a scheme will fail to function properly. The area should therefore be reasonably homogeneous, and the management goals should be feasible.

*Type of farmers.* The effectiveness of the scheme depends on farmers' participation. Consider, therefore, socio-economic and demographic features, such as the size of farms, social structure, and mentality, as potential factors for scheme up-take by farmers. Economic conditions on farms (marginal or relatively wealthy) are also relevant because the future payments to farmers must be justified in a broader societal context. Institutional conditions such as status and/or plans for land (re)privatisation is important, because farmers may not enter a management agreement if the land is not theirs.

*Political acceptability.* There may be other rational and irrational arguments why a certain area is acceptable or not. For instance, is there an ethnic minority living in the area?

*Administrative body.* Ideally schemes will be managed by one organisation. It may be a problem to find one lead organisation, and much time could be wasted in coordination.

## 4.4 Setting objectives for schemes

Environmental objectives can have two levels of ambition: maintenance of the present situation or improvement of the present situation. Objectives should be clear and set out the priorities for maintenance and improvement of conditions over the long-term. In addition, possibilities for monitoring and evaluation should be considered when selecting objectives.

**Box 6 Examples of environmental objectives**

| | |
|---|---|
| To prevent | further intensification, environmental pollution, soil degradation and further loss of habitats. |
| To maintain | extensive grazing systems, wet grasslands, habitats of key bird species and landscape features. |
| To restore | wetlands and habitats of key bird species through grazing. |



Thriving wetlands

Initial management packages should be aimed at attaining specific objectives. For example, in a grassland habitat management prescriptions could include:

- no change in management of the grassland;
- strict conditions on drainage, irrigation and fertilisation;
- specific mowing and grazing regimes;
- obligatory management for hay meadows such as fixed mowing dates.

Management packages address the farm level, while the objectives address the scheme as a whole.

In order to monitor and evaluate the effectiveness of the scheme in attaining the objectives, more explicit targets need to be formulated. A target is justified by the objective, is explicit, result-oriented and measurable. For example it is important to distinguish between conservation targets and up-take targets. A conservation target refers to the amount of a species or habitat which the scheme aims to conserve. Linked to the conservation target is an up-take target that bridges the gap between the two levels: the pilot area and the farm level. An up-take target defines the amount of the area that the scheme aims to cover.

**Box 7 An example of environmental targets**

| | |
|---|---|
| Conservation target: | maintain 2,000 hectares of habitat A. |
| Up-take target: | 65% of the farmers in the pilot area participate in package IA which aims at conserving habitat A, which ensures that the conservation of 2,000 ha will be achieved. |

Due to the likelihood that lack of information may prevent a scheme progressing further than initial environmental and up-take targets, it is important to identify what information is needed to define preliminary global management packages. A description of how to collect this information is provided in chapter 6.

## 4.5 Scheme design

In chapters 3 and 5 guidance is provided on national level programme design. This guidance is also appropriate for designing schemes, although the scheme design should be modified.

Verify the following design elements:

a. *Political co-ordination.* Presumably, the co-ordination of a scheme fits the proposals made for the national level. If a local authority is involved in the design and implementation of the scheme, it is important to clarify how this authority relates to other institutions.

b. *Environmental priorities.* It is important to verify whether the environmental objectives defined for the scheme are of national relevance, and fit priorities. If they do not this would imply that the scheme should be a zonal scheme.

c. *Horizontal/zonal scheme.* There may be a tendency to design a specific zonal scheme for areas. However, horizontal schemes may be important from a national perspective. If appropriate, horizontal and zonal schemes may be combined.

a. *Administrative set-up.* It is important to verify whether the lead organisation responsible for the implementation of a national agri-environment programme is prepared or experienced. If not, administrative capacity should be developed in this organisation. A local partner can be involved in the administration of the pilot scheme, but it is possible to administer the scheme from outside the region.

b. *Eligibility criteria.* Depending on the objectives, the programme can require that a whole farm is included in the management agreement or that a contract can be made for specific parts of the farm.

# 5 Establishing a national agri-environment programme – the professional background

## 5.1 Introduction

This chapter provides information on how to create an appropriate structure for national agri-environment schemes within the framework of the RDR. It also highlights some important background considerations for designing agri-environment programmes. The ideas presented for scheme design are intended to be suggestions, rather than strict rules to be followed.

The following sections discuss important background considerations for designing agri-environment programmes. Examples of the main design patterns for national agri-environment programmes which have been used by the current EU Member States, and that may be suitable for the situation in CEE, are described below. Building on this information a 'model' structure for schemes is provided in the next section. Most models are presented in the form of a list of basic principles for scheme design. A final short section highlights the importance of adequate monitoring procedures and scheme evaluation.

## 5.2 Operational objectives

The aim of this chapter is to provide guidance on:

a. the principles of the design of agri-environment programmes;
b. comparing advantages and disadvantages of different models;
c. developing environmental/biodiversity objectives for agri-environment schemes and setting targets to achieve these objectives;
d. identifying appropriate institutions and procedures for monitoring, legal arrangements with farmers, and the enforcement of legal obligations.

More information on management prescriptions and payments is provided in chapter 7, while administrative issues and monitoring are discussed in more detail in chapters 8 and 10, respectively.

## 5.3 First steps for preparing a national agri-environment programme

The following issues should be considered when preparing a national agri-environment programme.

a. Previous work should be taken into account, along with any current or past policies on agri-environment. It can also be very helpful to draw on the experiences of other countries and institutions.
b. It is important to be clear about the basic policy objectives of the national programme. Individual schemes may have mainly a social (ie income) function, serve environmental purposes, or pursue both objectives at the same time. The overall aim should be to promote the sustainability of

traditional agricultural systems, in farming as well as environmental terms. It may thus be important to support farmers as well as desirable management practices.

c. An analysis of overall agricultural policy with regard to agri-environment schemes is useful. It is useful to try to minimise conflicts between production policies, subsidies and agri-environment payments. Such conflicts are likely to be less severe in CEECs than in the EU.

d. Try to foster a consultation process during the preparation phase, including farm organisations and conservation groups. Such an approach can provide essential information on the appropriateness of individual schemes and contribute considerably to their acceptance in the farming communities.

e. Identify potential allies and important partner institutions for the introduction of agri-environment schemes. These can be crucial during the preparation phase (for further information see chapter 4).

f. Choose the most appropriate organisations to design and implement the national agri-environment programme. The lead organisation should be the one that has the greatest credibility with farmers, as well as sufficient administrative capacity, expertise and a well developed administrative network. At the same time it should make use of, and have access to, specialised expertise in other government units.

g. Establish good co-ordination procedures between environmental and agricultural departments for the preparation as well as the implementation phase. These should also include relevant parts of the regional administration, such as national park authorities. The combined knowledge of both ministries, and of the directly affected regional authorities, is likely to lead to well designed schemes and a more coherent national programme.

h. Try to be realistic with ambitions for the national programme or regional schemes. This refers to total financial commitment and level of scheme complexity, as well as administrative capacity, expertise and presence in the affected areas. Especially when introducing a new policy instrument, it is better to start small to ensure efficiency rather than to be over-stretched and cause delays and problems with implementation. The latter situation is bound to diminish the good will of the farmers, and may lead to a rejection of the concept, with serious consequences for the success of any future programme.

i. Ensure there is adequate information for farmers about agri-environment schemes. To achieve a good understanding of, and compliance with, the contract conditions, the schemes should be kept as simple and clear as possible. Adequate information material also has to be provided (see chapters 8 and 9 for further information).

j. Good training and motivation of officials who are the first contact point and source of information for the farmers is essential. Their knowledge about the scheme, and efficiency in dealing with farmer applications, has an important influence on overall scheme uptake (see chapter 9 for further information).

## 5.4 Basic principles for programme development

When designing agri-environment programmes, the following principles may be helpful for maximising environmental effectiveness.

a. Establishing a list of well-defined environmental objectives and prioritising them, eg what environmental issues are of most concern, which are the most threatened agricultural habitats, where are they located?

b. Setting clear targets for each of the environmental objectives where possible;

for example, what percentages of the selected habitat type or how many hectares are expected to be covered by management agreements.

c. Considering possible agreements for national horizontal measures. It is however, important to aim for clear geographic targeting of the zonal schemes. From an environmental point of view it is more effective to achieve positive effects in the most important areas rather than to spread resources over the whole country.

d. Designing the agri-environment measures as far as possible in such a way that they promote the implementation of relevant national or EU environmental legislation (for example, the EU habitats or birds Directive, or national biodiversity strategies).

e. Defining basic environmental standards that would be obligatory for participation in any agri-environmental scheme ('Good Farming Practice').

f. Identifying what choices farmers have; and making sure management agreements are flexible enough to be acceptable for them. This can be ensured through a menu of options from which the farmers can choose, or through the introduction of several tiers of environmental restrictions which differ in their severity.

g. Trying to avoid excessive bureaucratic complications and aiming to make scheme participation as easy as possible.

## 5.5 Important elements of agri-environment programme preparation

Certain elements or steps are essential to implement an agri-environment scheme. They are briefly reviewed here and discussed in more detail in chapters 8, 9 and 10. Some of the elements listed below take up the principles discussed above.

a. Analysis of the initial environmental situation and problems: a correct analysis of the environmental situation and the problems to be addressed by the policy instrument forms the background to any successful scheme design. Such an analysis will mainly rely on biological and environmental surveys, although data on agricultural and/or economic trends are also very important, as they can help to explain farmer behaviour and agricultural practice.

Example: Biological surveys show that traditional grassland systems are disappearing from lowland areas. Agro-economic data suggest that they are not as profitable as intensive livestock systems or arable crops.

b. Definition of objectives and targets: when the environmental problems have been identified, clear objectives and targets need to be defined for alleviating or solving the problem in question.

Example: All remaining extensive grassland should be preserved. Traditional grassland systems should be restored in certain national parks and, where important, links between existing remnant areas have to be created. The overall area of extensive grassland to be maintained by management agreements should reach 50,000 ha after five years and 60,000 ha within 10 years (including 10,000 ha of restored grasslands).

c. Selection of policy instrument: to achieve the defined policy objectives, it is important to choose an appropriate policy instrument (in this case, likely to be various kinds of agri-environment scheme).

Example: There are strong economic pressures on farmers to achieve the highest possible yield from their land. Regulatory policies to maintain or create traditional grasslands would not work, as the farmers would not obey them for economic reasons, or would just abandon the grassland. Thus a payment system (= agri-environment scheme) has to be devised which compensates them for continuing with, or re-introducing, traditional management methods.

d. Contract design: the agreements or contracts between the farmer and public authority are a central part of any agri-environment scheme. They must be well designed so as to contribute to the overall policy goal and meet practical requirements at farm level.

Example: Late mowing dates and low levels of fertiliser applications are essential for establishing or maintaining extensive grassland systems. Thus, both factors have to be addressed in the management contracts. However, mowing dates should not be set so late that the resulting hay loses all its value as animal fodder. If the farmers cannot make use of the hay they will not enter into the scheme, or the payments would have to be very high.

e. Payment level: to choose the right payment level for a given management condition is often difficult, as many different factors have to be taken into account. However, the level of payment is crucial for good uptake rates and high cost effectiveness. Good agro-economic baseline data are essential for calculating the right payment levels, which often takes up considerable time. Factors to be considered include: the gross margin of the crop affected by the agreement (the expected reduction in average crop yield, possible loss of crop quality and resulting decrease in crop value) and additional costs incurred (due to use of specialised machinery or labour; cost savings due to reduced inputs; costs of additional bought-in feed if fodder production is affected etc). Where possible, such calculations should also be validated in conversations with potential scheme participants.



Sheep grazing is essential for preventing shrub invasion in many areas (for instance the Romanian Carpathians)

Example: The management conditions may require a reduction of yearly grass cuts from three to two. This would reduce grass production by about one third. Grass cut after flowering has a considerably lower protein content, which affects its fodder quality. Livestock grazing density may be limited, which will lead to reductions in overall livestock numbers on the farm, with resulting income losses. If water levels are not raised, no additional mowing costs are assumed. Fertiliser limitations will reduce input costs, but lower grass yields are likely to make higher quantities of bought-in feed necessary etc.

f. Information and advice: especially where farmers are not familiar with agri-environment schemes it is essential that they are given adequate information and advice. This should be as pro-active as possible.

Example: The question of how to reach the farmers was discussed at the beginning of the scheme. It was decided that farmers in all targeted grassland areas should receive a leaflet about the scheme, explaining its objectives and the different management contracts. In addition, national park officers would visit the relevant farmers in their area individually. The agriculture minister and/or national park director would provide an interview to the local newspaper about the scheme. Representatives from the administration or farmers unions would give talks in the villages targeted by the scheme. One official would be designated for giving advice about the scheme to the farmers, either personally or over the telephone.

h. Scheme administration: the bureaucratic implementation of an agri-environment scheme is an important aspect of overall scheme design. Factors to be considered are where to place the administrative responsibility for the scheme, how to co-ordinate scheme implementation, how much administrative time is required for processing a certain number of applications, how to organise payments and effective financial management, who would make farm visits to resolve difficult questions etc.

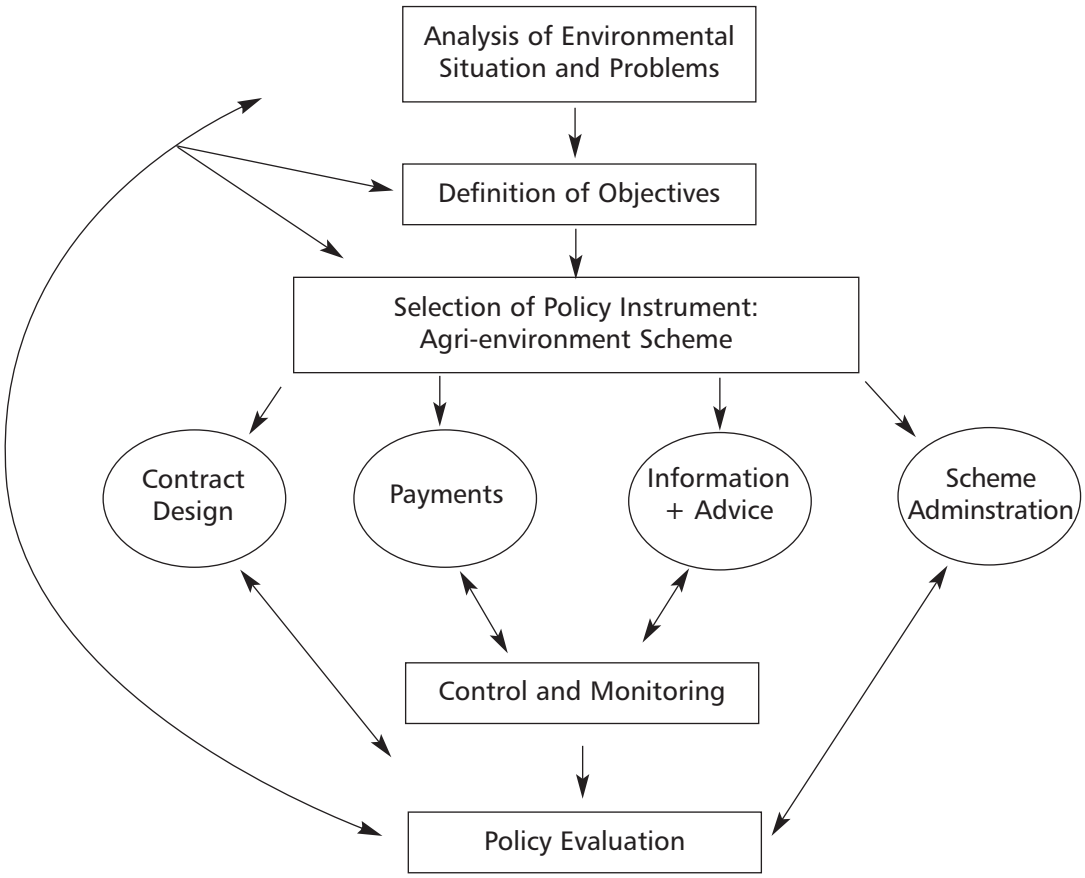
Example: Overall administrative responsibility, including financial management, is placed on the agriculture ministry. However, national park officers help with checking scheme applications and carrying out farm visits where required. Twice yearly co-ordination meetings are arranged between national park officers and the responsible officials from the agriculture ministry, each time in different scheme areas.

i. Control and monitoring: full compliance with agri-environment contracts can only be expected where effective control measures are in place. Management prescriptions which are controllable should therefore be chosen. Effective legal or financial sanctions are also important to deter possible breaches of contract. Monitoring serves to control compliance, as well as the success of the scheme in achieving its objectives (see below). Both are very important parts of overall scheme design.

Example: The limitations of inorganic fertilisers might be difficult to control. Parts of the sanctions and fines from the national tax code are used for breaches of contract in the agri-environment scheme. Monitoring and control visits are carried out by the experts/officers. The use of background information from soil analysis laboratories, organic certification bodies or produce councils might be valuable.

Most of these different elements are interrelated, and the success of one factor depends on the quality of others. Figure 4 summarises the links between the different parts of an agri-environment scheme design.

**Figure 4 Linkages between elements of agri-environment schemes**




## 5.6 Policy evaluation

Both the RDR (Regulation 1257/1999), the rules for its application (Regulation 445/2002) and its predecessors (Regulation 2078/92 and Regulation 746/96) stress the importance of adequate monitoring procedures and comprehensive scheme evaluation. This is particularly relevant in a situation where there is limited experience with previous schemes and their effectiveness is not yet known. Agri-environment schemes can only be improved and provide value for money if sufficient data is collected on their environmental and socio-economic effects. Particular attention should be paid, therefore, to the following points:

- set scheme objectives and environmental targets which are clearly defined and measurable through appropriate monitoring;
- monitor the environmental effect of the individual schemes and contracts with regard to these targets to assess the effectiveness of scheme design;
- think about monitoring schemes which would allow cross-farm comparisons between similar participating and non-participating farms;
- where possible collect environmental and socio-economic baseline data which allow a comprehensive evaluation of the effects of the individual agri-environment schemes of the national programme;
- ensure that scheme evaluation is independent where possible, and that it is used in the revision process.

Further information about scheme monitoring and evaluation is provided in chapter 10.

## 5.7 Approaches to and models for programme design

As pointed out in chapter 1, implementation of the RDR is governed by the principle of subsidiarity, which gives individual Member States considerable freedom in their national programme design. As a result, there are many different types of schemes in the fifteen present Member States.

### *5.7.1 Regulatory basis*

The elaboration of agri-environment programmes should follow the rules set out in the RDR. The aid scheme elements which should be applied in schemes horizontally or zonally are summarised in Table 2.

**Table 2 Agri-environment aid scheme elements in the Rural Development Regulation 1257/1999**

| **Chapter VI, Article 22** |
|---|
| A) an environmentally-favourable extensification of farming and management of low-intensity pasture systems; |
| B) ways of using agricultural land which are compatible with the protection and improvement of the environment, the landscape and its features, natural resources, the soil and genetic diversity; |
| C) the conservation of high nature-value farmed environments which are under threat; |
| D) the upkeep of the landscape and historical features on agricultural land; |
| E) the use of environmental planning in farming practice. |

### *5.7.2 Zonal versus horizontal: models for the application of agri-environment measures*

The subsidiarity principle allows flexibility and adaptability for individual countries in the design of their national programmes. There are many different approaches to the application of agri-environment schemes in Member States. Under the first agri-environment Regulation (2078/92), Member States were asked to develop *zonal programmes* (Article 3 Paragraph 1). Zonal programmes cover an area homogeneous in terms of the environment and the countryside. This approach is no longer obligatory under the RDR, but may still be useful in scheme designs.

An alternative application pattern is called the *General Regulatory Framework* (GRF). The GRF can contain one or more aid scheme elements for a horizontal application throughout the national territory, especially in typical 'horizontal' issues such as organic farming, preservation of endangered livestock breeds, extensive grassland management, or environmental training for farmers.

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Racka sheep, an endangered traditional Hungarian breed, well adapted to dry alkaline grassland conditions

In practice Member States have preferred the GRF option, and implemented it on a national territory or on a regional administrative territory. Zonal schemes have been mostly applied to local, specified or designated areas, especially in relation to nature management, biodiversity protection or landscape conservation and implemented in addition to GRFs.

Approaches can be grouped into the following models:

a) The simplest model is a *single horizontal scheme* for the whole country. Such horizontal schemes contain supplementary elements that are focussed on specific objectives, such as conversion to organic farming. Typically most of the supplementary elements are applicable all over the country, although there may be local variations, or schemes targeted at specific zones.

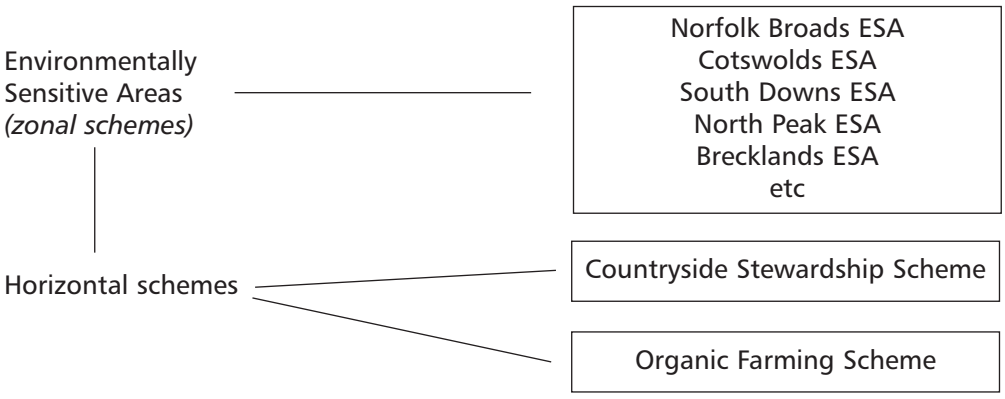
   In this model, it is generally necessary for a farmer to enter the national horizontal scheme to be eligible for supplementary elements. Ireland is an example that follows this model: the national horizontal programme adopts a whole farm approach. The application of this model in Ireland is provided in Figure 5.

**Figure 5 The Irish Rural Environmental Protection Scheme (GRF)**

| **General obligatory aid scheme elements** |
|---|
| • to establish a waste management, liming and fertilisation plan;<br>• to establish a grassland management plan;<br>• to protect habitat and landscape features such as watercourses, hedgerows, field boundaries, archaeological remains etc;<br>• to keep the farm tidy and preserve its architectural heritage, and;<br>• to attend a 20-hour training course in environment-friendly farming practices. |
| **Optional supplementary elements** |
| • a livestock management and/or de-stocking plan in one type of protected area;<br>• rearing local breeds in danger of extinction;<br>• long term set-aside to protect salmon rivers;<br>• organic farming. |

b) The most commonly applied approach, however, consists of a *national framework programme* containing several horizontal measures that are applicable throughout the Member State, *complemented by zonal schemes* at regional or local level. In this case the national horizontal measures, for example the introduction of organic farming, the maintenance of extensively managed grassland or the continuation of arable cropping systems with a high percentage of fallow, are available in large parts of the country. Alongside these schemes the *zonal schemes* can play a major or a minor role. Figure 6 illustrates this model.

**Figure 6 National Framework Programme with additional Zonal Schemes**
– an example of English agri-environment schemes



c) The third model applies mostly in federal states such as Italy or Germany. In these states the national agri-environment programme is applied as a GRF on regional level. In these federal states there is usually a national framework that defines the measures, which are permissible, or for which federal co-funding is available. While this will limit their options, the main responsibility for the agri-environment programme lies with the regions. They have to design their own schemes, perhaps in partnership with local authorities.

   In Germany, for example, if the Länder choose to stay within the federal framework their schemes are eligible for national co-funding, but if they go outside it they will not receive national co-funding (but are still eligible for EU-reimbursement). Under this model, individual horizontal measures apply only to one administrative region.

All the approaches described above are simplified models. In practice, their borders are not very clearly defined and intermediate forms can be found. National horizontal measures have the advantage of guaranteeing attention to widespread habitat or farming types all over the country, independent of regional preferences. By establishing one type of agreement for the whole country they offer the same options to all farmers, and they may also make scheme administration and monitoring procedures easier.

On the other hand, if horizontal schemes do not take account of regional differences in soil productivity, farm types or harvesting times, their conditions may be inappropriate for some parts of the country. There will then be a danger of very uneven uptake rates, and different participation possibilities for farmers in different regions.

Zonal schemes have advantages where specific, geographically defined environmental problems (conflicts), landscapes or habitat/biotope complexes are targeted. They can be better tailored to local conditions, and are particularly suited to more demanding land management tasks involving greater restrictions on farm management. However, they often require a greater administrative effort. They can lead to frustration among farmers outside the scheme area, especially where their borders are not based on immediately obvious geographical differences.

**Box 8 Contrasting examples of the selection of pilot areas in Hungary and Bulgaria**

**The selection of pilot areas in Hungary**

The basis for preparation of the National Agri-environment Programme (NAEP) lies in the establishment of a zonal system of land use in Hungary[3]. The selection of the pilot areas was based on the land use zonation (agricultural suitability – environmental sensitivity). The zonation provided a scientific background and acted as a decision support tool for development of the NAEP. The study, launched as an initiative of the Agri-environmental EU Harmonisation Working Group of the Ministry of Agriculture and Rural Development (MARD), aimed to establish a unified land qualification system. A zonal system was developed as a result of this, according to the main co-ordinates of agricultural suitability and environmental sensitivity. The Environmental and Landscape Management Institute of the GAU coordinated the analyses.

The land use study was based on a digital Geographical Information System (GIS) database. Target areas were delineated for nature, landscape, soil, water and combined sensitivity and vulnerability. For the analyses, the Arc/Info & ArcView 3.0 PC geographical information system software were used, on SUN computer platform.

The variables and databases used for the evaluation and qualification of agricultural suitability were related to relief and soil parameters, as well as to climatic parameters. The descriptors and databases used for evaluating environmental sensitivity covered nature, soil and water parameters as well as land use and land cover parameters and databases.

[3] The contributors to the NAEP are the Agri-environment Management Department of the Ministry of Agriculture and Rural Development (MARD), the Office for Nature Protection of the Ministry for Environment, the Environment and Landscape Management Institute of the GAU, the Soil Science and Agri-chemistry Research Institute of the Hungarian Academy of Sciences, the Institute of Geodesy, Cartography and Remote Sensing, the Hungarian Association of Ornithology and Nature Protection and the professionals of other institutes.

The overall number of variables and descriptors of both the agricultural suitability and environmental sensitivity amounted to more than thirty. They were all categorised and all categories were weighted (values determined) according to the role they play in the formation of agricultural productivity and environmental sensitivity.

The areas identified through this analysis were mainly regions which were vulnerable from the aspects of nature, soil and/or water protection. The selected areas cover areas sensitive in one aspect (eg nature, landscape, soil, water sensitive) and areas with combined (complex) sensitivity. They are defined as Environmentally Sensitive Areas (ESAs) and are classified in order of their importance as: pilot areas of the NAEP, very important ESAs, important ESAs and potential ESAs.

There are nine ESAs that are stated to be the most important in the NAEP. Their total area is 715,815 ha. For the purposes of the Hungarian SAPARD Plan and, especially for the agri-environment measure, 15 pilot areas selected as ESAs are defined with a total area of 399,579 ha.

**The selection of pilot areas in Bulgaria**[4]

The natural and structural diversity of Bulgaria, combined with a high number of environmentally sensitive areas, demanded a relatively high number of pilot projects to cover the general and specific objectives of the SAPARD agri-environment measure. Each pilot project should cover a certain geographical zone, and this should be a protected area, an environmentally sensitive area, or a valuable type of agro-ecosystem. Since data and information were scarce and time limits were strict for the selection and preparation of specific pilot projects proposals, it was only possible to develop a general framework for future activities.

Pilot areas should meet one or more of the following geographical criteria:

- They should be within or around a protected area, and/or within the buffer zones of the protected area;
- within, or adjacent to, an environmentally sensitive area or an area with valuable agro-ecosystems;
- near river banks, lake banks or coastal areas.

Priority is given to areas with salinisation and erosion problems. Additionally, each pilot project has to meet at least two of the following criteria:

- a large proportion of the area is in agricultural use;
- the area has a high biodiversity value;
- agri-environmental problems in need of urgent attention exist in the area;
- both farmers and the local population can provide support.

Agri-environmental pilot projects are open to, and can be proposed by a variety of organisations, including:

- the Ministry of Agriculture and Forestry;
- the Ministry of Environment and Water;
- the SAPARD Agency;
- local administration;
- the agricultural producers and/or their organisations;
- non-governmental organisations.

It is assumed that encouraging regional organisations to become involved will promote 'bottom-up' planning. At the same time, when at national level an area is considered important the government can propose it as a pilot area.

[4] The presentation of the selection procedure is according to the National Agriculture and Rural Development Plan for the period 2000-2006 under the SAPARD programme, as the European Commission approved it on 13 September 2000. However, there is a Technical Assistance project in ministry of agriculture currently running, under which the agri-environment measure has been revised and re-designed, as has the selection procedure.

A selection committee evaluates the pilot project proposals based on the following criteria:
- the situation in less developed areas (according to the NARDP);
- % of agricultural producers that expressed an intention to participate in the pilot project, compared to the total number of agricultural producers;
- % of agricultural producers from the region that intend to participate in training on organic farming methods, compared to the total number of agricultural producers;
- % of the production to be produced under organic farming methods, compared to the total agricultural production in the region of the pilot project;
- the project's contribution to the increase of soil fertility and bio-diversity, preservation of landscape, as well as to decreased pollution in soils, rivers and underground waters;
- the number of agri-environment activities included in the pilot project;
- the potential market outlets for products produced according to the organic farming standards;
- the potential employment created in the region of the pilot project;
- the compliance of the pilot project with relevant EU legislation.

# 6 Area description for scheme design
## (with special attention to zonal schemes)

## 6.1 Introduction [5]

Every agri-environment scheme needs to be clearly defined and justified for approval by the European Commission or any other funding agency. Geographic, agricultural, socio-economic and ecological data need to be collected for this reason. The aim of this chapter is to assist with identification of the type of data needed to satisfy potential funding bodies, and the research programme. The data collected should form the basis for completing the following tasks:

- a geographical description of the area covered by the scheme;
- fine-tuning of the scheme objectives;
- a definition of management packages and calculation of payment levels;
- establishment of baseline data for monitoring scheme with success and efficiency.

The following sections cover the information categories which are required in order to describe the scheme area.

## 6.2 Operational objectives

Chapter 6 aims to provide guidance on:

a. the geographical definition and description of the area related to a scheme;
b. collecting relevant data about the socio-economic structures in the area related to a scheme;
c. determining which environmental data to collect and organising data collection in the area related to a scheme;
d. determining which farm management data to collect and organise data collection in the area related to a scheme.

## 6.3 Guidelines for data collection

In order to minimise resources expended on data collection, it should be stressed that existing information and statistics collected for other purposes should be used wherever possible. A key action is to identify the organisations and individuals in possession of relevant information and knowledge about farming and farm businesses, and which are familiar with further information sources and know the locality.

[5] The authors are grateful for the help of Mark Temple, ADAS, UK, in preparing this chapter.

Institutional structure differs greatly between countries, but the following organisations are good starting points:

- Ministries of agriculture and environment;
- Counsellors for agriculture and nature protection within the regional authorities;
- Chambers of agriculture;
- agricultural advisory services;
- private farm consultancies;
- university departments of agricultural economics;
- non-governmental bodies like farmers unions; and
- environmental working groups.

Information on biodiversity is likely to be obtained from:

- experts at universities and research institutions;
- public nature conservation authorities such as national park services or county wildlife officers;
- conservation bodies; and
- amateur ornithologists or botanists.

In order to maximise the value of research, it can be useful in the long-term to collect data that can provide a baseline for a monitoring programme. Articles 48 and 49 of the RDR describe the monitoring and evaluation requirements.

The following sections describe the type of data which is useful, but it should be stressed that this is only a guideline. The research programme may be restricted by the availability of time and funds.

## 6.4 Geographical definition and area description

The area should be defined and described according to physical and socio-geographical conditions. The following data should define and justify the scheme area, and prepare a base for the management prescriptions (described in chapter 7).

### *6.4.1 Boundary assessment (only in the case of zonal schemes)*

- the scheme boundaries and size should be clearly defined;
- in order to prepare legal agreements, land register information can be used for identifying the land ownership and justifying the boundaries of the individual properties.

### *6.4.2 Introduction of the area*

- a general description of some abiotic conditions like geology, geomorphology, and hydrology is useful;
- national or international statutes (conservation or planning laws) affecting the area should be listed eg National Park, Protected Landscape, RAMSAR site, World Heritage site, Less Favoured Area (an EU agricultural term), special development plan for agriculture for the area;
- an overview of the main land uses in the area should be described using a map and the percentage of each land use should be calculated;
- also useful is an overview of the general socio-economic situation in the area which may determine proposed changes in land use, eg employment rate in some sectors, main sources of income;

- a map of the main settlements and infrastructure is useful, as well as a topographic map;
- an outline of landscape characteristics and values, historical land use patterns, plant and animal ecosystems and elements of historic rural culture can provide useful background information.

### *6.4.3 Formulation of objectives for farm-level implementation*

- description of objectives within the framework of Article 22 of the RDR;
- justification of the objectives by national and/or international legislation, ie provide a list of EU or other national/international environmental/ biodiversity legislation which the scheme seeks to fulfil.

### *6.4.4 Basic data for defining the management packages (where relevant for the scheme objectives)*

- a more detailed description of agricultural uses (eg cropping systems, intensity of farming with indication of low intensity farms, farm structures with indication of permanent pastures and hay fields, application of fertilisers and pesticides, ownership types);
- a more detailed description of natural values on the farms for relevant habitat types like extensive grasslands and arable lands, water bodies like ponds and ditches and other habitats if necessary such as bushes, hedgerows and marshes;
- a more detailed description of environmental issues to address, such as water quality in specific areas for restoration, and soil potentials for restoration;
- a more detailed description of how to restore landscape and natural values by extensification of land use, and other possibilities in the framework of the regulation;
- trends in land use eg increasing use of fertilisers.

It should be taken into account that the available information is often quite fragmented and sometimes based on 'best expert judgement'. This means that preparing a plan for an area is a creative process, and that the involvement of locals, like farmers and biologists, is advisable for solving the need for information and reflection (justification of proposals).

## 6.5 Collecting data about socio-economic structures and farm management

Several techniques and existing databases may be helpful during collection of data about farming in a pilot area. These are reviewed below.

### *6.5.1 Principles of farm typology*

In the context of an agri-environment scheme the term 'farm structure' refers to the types of farm businesses in an area. There are many ways of categorising farm businesses of which the following are just some examples.

- Type of farm production, eg dairy farm, arable cropping farm, mixed farm.
- Farm size (often this is defined by area, but other measures of business size can be used).
- Socio-indicators such as age, average household size, average yearly income, full- or part-time farmers.
- Business-indicators such as average output, yields, average input of fertilisers and pesticides per ha, average investment rate, forage method.
- Land tenure (eg owner, occupier or tenant).

A method of categorising farms is often called a 'typology'. As an example, a typology used by a university to categorise lowland farms in south-west England is outlined below:

| *Farm Classification* | |
|---|---|
| Specialist Dairy Farms | 0 – 40 hectares |
| Specialist Dairy Farms | 40.1 – 80 hectares |
| Specialist Dairy Farms | over 80 hectares |
| Mainly Dairy Farms | 100 hectares and under |
| Mainly Dairy Farms | 100.1 hectares and over |
| Lowland Cattle & Sheep Farms | 80 hectares and under |
| Lowland Cattle & Sheep Farms | 80.1 hectares and over |
| Mixed Mainly Crops | 100 hectares and under |
| Mixed Mainly Crops | 100.1 hectares and over |

This typology uses both the type of farm product and farm size. Note that the typology is designed to fit the farmers of the area. In south-west England there are many dairy farms but few cropping farms. Hence the typology describes dairy farms in some detail but lumps cropping and mixed arms together. A typology for the east of England where cropping is very important and livestock farms are rare would look very different. Of course, for each farm type there has to be a precise definition – eg to divide Specialist Dairy Farms (> 80 % of income from dairying) from Mainly Dairy Farms (> 50 % of income from dairying) etc.

When describing the farm types of a proposed pilot area, the type of farm production and size will often be the most appropriate typology. In CEECs it should be noted that there may be radically different types of farms operating side by side: small family run farms (whether recently established from land restored to original owners or of long standing) and large scale agricultural businesses (working with the assets which were formerly those of co-operatives). These businesses are likely to have very different performance (yields of crops and livestock) and different patterns of costs. They may sell production into different markets and achieve different prices. The typology should take this into account. It is often possible to adapt an existing typology by discarding farm types not present in the zone.

The importance of creating a farm typology, even if crude, is that when designing management packages and payments for different tiers, it is useful to think in terms of complete farm systems, not just units of production.

### *6.5.2 Use of farm census data*

Most countries carry out a farm census at regular intervals when each farmer is required to report the area of their farm, the types of crops and forage and the number of livestock. Obtaining the census data for the agri-environmental zone, usually held by the ministry of agriculture, is useful. Agricultural census data may be confidential, especially individual farm business data. It may therefore be necessary to use staff from the ministry of agriculture to carry out work related to individual farm census data.

It is important to obtain the census totals for land use and livestock in the zone. For example, it is useful to know the total area of wheat grown in the zone or the total number of dairy cows. These simple figures may not be easy to establish because census figures usually report by business, and the zonal boundary is unlikely to follow business (individual farm) boundaries exactly.

If census figures are summarised by the smallest local administrative area (eg in the UK by parish) and the zone's boundaries follow parish boundaries, then arriving at approximate totals is fairly straightforward (approximate because although farms are identified by parish, their boundaries rarely follow parish boundaries). But often there will be good reasons why the zonal boundary should not follow the parish boundary. It may still be possible to categorise individual farms as 'in' or 'out' of the zone and re-analyse census data. Accurate land use totals for the zone will only be achieved by mapping.

With individual business census data it is possible to work out a typology that will allow categorisation of the farms in the area.

### 6.5.3 Farm management data

All members of the EU have to provide farm management accounts data to the Commission as part of what is known as the Farm Accounts Data Network (FADN). The FADN are annual farm management accounts for a sample of individual farm businesses. These accounts include both physical and financial data (eg livestock numbers, acreage of arable crops, financial return per hectare of crop) that allow the farm's production system and profitability to be thoroughly understood. Information of this type is available in most European countries, and those that are working towards EU membership often have ongoing projects to build up data, which will in due course be suitable for inclusion in the FADN. For instance in Lithuania the Agricultural Advisory Service collects information from private family-run farms, and the Institute of Agrarian Economics collects information from large farming companies. Information of this type is contributes greatly to understanding the financial circumstances of farm types within a zone.

When data has been collected as a national sample it will often need to be adapted to represent the farms of the agri-environment scheme area. For instance stocking rates or crop yields may differ markedly from the national averages. A skilled agricultural economist or farm business specialist working with someone familiar with farms in the area is often able to use national farm business data to show typical levels of costs and returns for the zone.

### 6.5.4 Other information about farm management and land use change

Agri-environment schemes are mostly about stopping or reversing detrimental changes in land use. While farm structures and farm business data indicate the likely administrative ease of implementing the scheme, farmer participation, the type of contract design and likely payments required, land use change data indicates the most important targets for a scheme and the most vulnerable habitats in an area. It is therefore very important to collect accurate information about present (or potential) land use trends in an area. This information will help to target the management agreements on the most important or most vulnerable habitats within the target area.

Aspects of current farm management may be relevant to targets of an agri-environment scheme and can easily be identified by a survey. A good example is whether farms conserve grass as hay or silage, and the dates of the first cut. Other examples include the stocking density of grazing land, ploughing or drainage of grasslands, abandonment of remote pastures, overgrazing or undergrazing of pastures, application of fertilisers, and presence of permanent grasslands. Other factors which may be relevant are described in sections 6.6 and 6.7.

Information can easily be gathered by interview or telephone survey, although in some countries without comprehensive telephone networks this may produce biased results. Selecting which information to collect requires a balance between what information would assist scheme design and budgeting, and what can be easily provided by farmers and others. A good starting point can be to talk to local farm advisers or naturalists living in the area about trends in land use and the intensity of agriculture. With this initial information it should be possible to draw up a list of important questions to ask a number of selected farmers in the area. The sample of farmers should include farmers from all categories (eg young/old; big/small) are represented according to their share in the original farming population.

It may be possible to gather all, or most, of the relevant information about land use change from existing sources, such as old maps, repeated wildlife surveys, and information provided by local experts. It is important however, always to confirm the accuracy of this information by interviewing a few farmers or farmer representatives. This will also help you to find out what they regard as the driving force for these changes, eg different economic returns or ease of work, introduction of new technologies etc. Correctly identifying these forces for change is often crucial for designing management packages in a way that is acceptable to farmers.

## 6.6 Collecting biodiversity data

The data collection programme should be clearly based on the target of proposed management, such as pasturing and delayed cutting of grasslands. Figure 7 shows the type of data needed for an assessment of biodiversity. This can be regarded as a checklist, although priorities will differ according to the local situation. Additional information on requirements for a description of biodiversity is provided by the EC habitats Directive (94/43), which is summarised in Annex 3.

**Figure 7 Identification of biodiversity data for implementing an agri-environment scheme**

| Management targets | Recommendations for biodiversity data collection |
|---|---|
| Basic protection for ecosystems | – information on the semi-natural ecosystem types in the area involved, especially oriented on vegetation types and distribution of breeding birds (office and field research) |
| Special protection for arable land ecosystems | – understanding the potential for improving the quality of arable land ecosystems through analysis of historical records of the ecosystem (office research) |
| Protection of semi-natural grassland types | – gathering information on the location and quality of semi-natural grasslands in the area involved (field research) |
| Restoration of grassland types | – understanding of the potentials for restoration of semi-natural grassland types by analysis of abiotic conditions such as soil type and groundwater regime (office research) |
| Achieving an appropriate grazing regime | – data collection in order to identify the grazing threshold to ensure restoration of the quality of semi-natural grassland, including identification of areas requiring specific grazing regimes (office research)<br>– undergrazing is a problem in marginally used, agricultural areas, and analysis of the current situation is needed (office research and/or field research) |
| Landscape protection, including geomorphology and cultural heritage | – understanding the historical and ecological importance of old low input farm practices by description of some example-farms (field research) |
| Restoration of landscape features such as hedgerows, stone walls, old roads, historical settlements, old orchards, etc | – understanding of the characteristic features of the landscape involved by analysis of actual landscape structure (including geomorphology) and proposals for restoration (office research)<br>– understanding the situation of local breeds by making an inventory of the gene pools (office research) |
| Establishment of spontaneous forests, bushes and shrub ecosystems | – determining which sites are suitable for 'set aside' for the purpose of establishment of forest, bush and shrub vegetation (office research) |

A brief description of the data structure should follow, in order to provide the working group with information about the data which needs to be collected for different scheme targets. It is important to endeavour to discover trends in the use of agricultural habitats and analyse present land use and its effect on habitat quality.

### *6.6.1 Extensiveness and quality of semi-natural grassland types*

The RDR provides the Member States with the opportunity to make voluntary agreements with farmers in order to continue the existing grassland management practices. The distribution of semi-natural grasslands can be identified by interpreting space images (Russian space images have a very good resolution!), topographical maps, maps of potential and/or actual vegetation. Further information may be obtained from research institutes. The habitat mapping for the CORINE-project can also provide useful supplementary information.

An analysis of historic farm management and comparison with the presence of semi-natural grasslands in the past, and at present, can provide useful guidance for targeting and designing management plans for farms. Protection for existing grasslands should be ensured.

### *6.6.2 Potential for restoration of arable ecosystems by the presence of gene pools*

The ecosystems which depend on arable land are in danger throughout Europe as a result of intensification. Stress factors include a change of cropping pattern, and population fragmentation through intensification of arable land.

The distribution of species is often well known by local specialists such as ornithologists and botanists. For larger-scale information, distribution maps can also provide basic information on species distribution.

### *6.6.3 Potential for restoration of semi-natural grassland types according to soil and groundwater conditions*

In wet areas, such as floodplains and peat bogs, the conditions for restoration can be assessed by estimating the quality of soil and groundwater. Both of these abiotic factors determine the development of semi-natural grassland types. Recent data is not readily available in some countries, but it is possible to deduce from past and current land use the likely input of nutrients into the groundwater and soil.

### *6.6.4 Classification of farms according to grazing intensity*

Often socio-economic research and data on farm management can be used to predict where under- and over-grazing takes place. Further research can be carried out through interviews with local farmers.

### *6.6.5 Quality of present landscape and geomorphologic features*

Farming practice should be compatible with maintaining the quality of landscape and geomorphologic features. The methods for assessing these aspects should be based on the type of landscape. Cultural heritage aspects should be included, as should the presence of geomorphologic features. In many cases the relevant data can be obtained from national and regional governments and institutes. It can be useful to carry out a quality assessment at the a global level to ensure that a consistent framework for landscape quality can be used over the total area of the programme-scheme.

### *6.6.6 Potential for landscape restoration according to the presence of historical remnants such as hedgerows and old roads*

Where old hedges or roads exist and historical management and features are present, these can provide targets for restoration.

### *6.6.7 Potential sites for a set-aside strategy to strengthen ecological networks*

Agricultural land which is taken out of production is most valuable if it can strengthen an ecological network. Many countries have prepared a development plan for ecological networks which can provide a useful guide.

## *6.7 Collecting data on environmental issues*

If environmental factors are important for a scheme it is important to collect data about some basic environmental parameters. A similar method of data collection to that introduced in section 6.6 can be used (see Figure 8).

**Figure 8 Identification of environmental data for implementing an agri-environment scheme**

| Management targets | Recommendations for environmental data collection |
|---|---|
| Protection of groundwater quality | – understanding the quality of groundwater in the area by analysis of water quality data (office research) |
| Protection of surface water quality | – understanding the quality of surface water by analysis of surface water data (office research) |
| Production of organic farming products | – understanding the potential for production of organic food by analysing farm systems and market conditions (office research) |
| Prevention of soil erosion by overgrazing | – understanding actual erosion processes on slopes by analysis of slope conditions (office research) |
| Reduction of forest fires/natural hazards | – understanding potential risks for hazards in the area by analysis of spots which are vulnerable for such accidents (office research) |
| Protection of regional water systems | – understanding the regional water systems (ground- and surface water systems) by analysis of geo-hydrological system (office research) |
| Protection of soil quality | – understanding the potential for improvement of soil quality by analysing the average use of fertilisers in the area (office research and/or additional field research by consulting 'example-farms') |
| Protection of water quality by afforestation | – understanding the potential for protection of waters by afforestation in a set aside scheme (office research) |

A brief description of the data structure, and further information on the contents of the data sets will is set out below.

- *existing environmental quality of ground- and surface water and soil*

  The quality of ground- and surface water and soil was also mentioned under biodiversity aspects. In general, undertaking an agri-environment scheme provides possibilities for water protection through encouraging a decreased use of fertilisers and pesticides. Assessments of water quality should be based on existing data from governmental bodies and institutes. A detailed assessment is not necessary. Only a brief assessment is needed to determine

whether the water quality conditions will limit the possibilities for protection and restoration of natural ecosystems.

- *potential conditions for organic farming*

  Organic farming provides possibilities for the protection of environmental conditions, such as soil and water quality, but also for improving food quality. The potential for organic farming depends on the quality of land and ability of local farmers to produce food according to organic standards.

- *risk analysis for hazard assessment such as forest fires, soil erosion on slopes, water pollution*

  Assessments of environmental risks provide the planner of a pilot project with the ability to forecast potential risks. Using local experts as an information source can help to identify risks.

- *regional water systems (ground- and surface-water flows)*

  A quality assessment of ground- and surface-water should be carried out in the framework of an analysis of the water system: infiltration and pumping out of water. This can provide an insight to the relationship between the landscape and water flow. This is particularly valuable in wet areas, as the potential of an area is determined by its position in the water system. Often research of this type has not been carried out in the past, so the collection of sufficient data may not be achievable over the short-term.

- *potential for improving soil and water quality*

  Conditions for improving the quality of soil and water are very much determined by trends in the area. It can also be useful to predict the conditions of agriculture in the future in order to forecast the potential environmental impacts.

# 7 Design of management packages and payment calculations

## 7.1 Introduction [6]

Management agreements, or packages, are the most important instrument for achieving the objectives of agri-environment schemes. This chapter briefly addresses how different types of binding agreements can be made and considers the practical considerations of developing management prescriptions. It also explains the most important ways of providing options to farmers, as well as the types of conditions required to achieve the desired land management. The method for calculating payments is set out, and the total cost of the payments for the zone are then estimated. The chapter provides guidance on designing the format of management agreements for a pilot scheme and for understanding methods for calculating appropriate payment rates and the scheme budget for management payments.

## 7.2 Operational objectives

Chapter 7 provides guidance on:

a. designing management packages which would fulfil the objectives and targets defined in chapters 4 and 5 based on the data collected in chapter 6;
b. identifying the most important elements of a management contract with farmers, and the conditions under which farmers enter into management agreements;
c. calculating the economic costs (loss) for farmers when participating in specific management agreements
d. listing the financial resources required to implement the proposed management packages on a large scale (high scheme uptake) within the pilot area(s).

## 7.3 Design of management packages

### *7.3.1 Outline for legal agreements*

To receive the incentive payments farmers are required to enter into legally binding contracts. The format of the agreement will need to ensure that, according to the laws of the country concerned, the administering body has a legally enforceable contract. The agreement needs to be worded so that there is no ambiguity about what it contains. The agreement must spell out exactly what each party is committed to under the contract. It must also specify the time period of the agreement (eg start and end dates) and be signed and dated by the farmer and a representative of the administering body. To ensure that the agreement is properly constructed it is necessary to get guidance from a competent legal authority. It should be stressed that simple scheme designs are best in the long-run, as they save time and difficulty when administering the scheme, and make communication with farmers easier.

[6] The authors are grateful for the help of Paul Terwan (Avalon), Mark Temple (ADAS, UK), Martin Ryan (FRCA, both UK), and Johan Heinen (DLG, the Netherlands), in preparing parts of this chapter.

### *7.3.2 Identification of potential packages*

Relating to figures in previous chapters 2 and 6 (Figures 3, 7 and 8) possible management conditions for the protection of biodiversity and environment are presented below. The examples are only prepared as indications of how the biodiversity and environmental aspects can be translated into practical packages. To assist understanding of the objectives, a difference is made between biodiversity and environment aspects, although both aspects are complementary. It can also be useful to adopt this distinction during development of a pilot project.

**Table 3 Identification of potential management packages targeting biodiversity protection**

| Biodiversity protection | Examples of management conditions |
|---|---|
| Basic protection for ecosystems | – reduction of fertilisers/pesticides |
| Special protection for arable land ecosystems | – reduction of fertilisers/pesticides |
| Protection of semi-natural grassland types | – extensive grazing regime<br>– continuity in mowing (mowing date also)<br>– maintaining groundwater level |
| Restoration of grassland types | – restoration of groundwater regime<br>– applied mowing regime<br>- applied grazing regime<br>– reduction of fertilisers |
| Achieving right grazing regime | – reduction of overgrazing<br>– increased grazing in undergrazed areas |
| Landscape protection, including geomorphology and cultural heritage | – protection of landscape features such as hedgerows<br>– protection of cultural remnants such as stonewalls and old roads |
| Restoration of landscape features | – restoration features such as hedgerows, stone walls, old roads, historical settlements, old orchards, etc |

**Table 4 Identification of potential management packages targeting environmental issues**

| Environmental protection | Examples of management conditions |
|---|---|
| Protection of groundwater quality | – limited fertilisers/pesticides |
| Protection of surface water quality | – limited fertilisers/pesticides |
| Production of organic farming products | – crop rotation schedules |
| Prevention of soil erosion by overgrazing | – decrease of grazing regime intensity<br>– restore strips of permanent vegetation on slopes |
| Reduction of forest fires/natural hazards | – increase intensity of grazing regime |
| Protection of regional water systems | – decrease fertiliser use in infiltration areas |
| Protection of quality of soil | – maintain groundwater level<br>– reduce fertiliser use |
| Protection of water quality by afforestation | – set aside for spontaneous afforestation |

### *7.3.3 Examples of management packages from the UK and the Netherlands*

Examples of a tier scheme from the UK and a menu scheme from the Netherlands demonstrate how schemes could be designed in CEE. Annex 4 also contains a useful example of the scoring system used by the Austrian Öpul scheme. The UK example is particularly relevant to upland areas, and the example from the Netherlands is more relevant to wetland areas.

**Introduction**

Agri-environment schemes have to provide farmers with sufficient flexibility to encourage them to enrol. There are two principal options for achieving this: a) to provide farmers with a number of tiers for the same habitat that differ in their severity, or b) to provide a menu of options from which they can choose.

Figures 9 and 10 provide a graphic representation of these two options.

**Figure 9 Examples of prescriptions for farmers in a tier structure**

| | | |
|---|---|---|
| Tier 1: fertiliser use | | |
| Tier 2: fertiliser use | mowing date | |
| Tier 3: fertiliser use | mowing date | cutting bush encroachment |

**Figure 10 Example of prescriptions for farmers in a menu-structure**

| | Farmer A | Farmer B |
|---|---|---|
| fertiliser use option 1 | x | |
| fertiliser use option 2 | | x |
| mowing date option 1 | | |
| mowing date option 2 | x | |
| mowing date option 3 | | x |
| cutting bush encroachment | | x |

X= choice of prescriptions by individual farmer A or B in the same homogenous region

In the tier structure the basic conditions from Tier 1 are also obligatory in Tier 2, and those of Tier 2 are obligatory in Tier 3, and so on. Farmers cannot, therefore, freely combine the management conditions for their contracts, but they can choose among different levels of severity or number of restrictions when entering into a management agreement. Sometimes there are also combinations with the menu structure, usually involving a number of additional options in a tier system.

Under the menu system the farmers can choose from among several different measures those that suit them best, and combine them into a management package.

**Tier structure from the United Kingdom**

Different tiers are commonly used to achieve graduated degrees of environmental enhancement in return for increased payments. Four tiers are generally regarded as the maximum. For example, in the Somerset Levels ESA, an area of grass wetlands, there are four tiers:

Tier 1 Permanent grassland
Tier 1a Extensive permanent grassland
Tier 2 Wet permanent grassland
Tier 3 Permanent grassland with wet areas

For each tier the prescriptions are explained in detail. It is important that descriptions are clear, but it must be kept brief. For example the description of Tier 1 contains 57 paragraphs, but paragraph 5 only says 'Do not use fungicides or insecticides'.

Other ESA schemes operate with a smaller number of paragraphs, eg the Cereal Steppes ESA in Castilla y León, Spain. In this scheme the number of paragraphs in each contract is between 10 and 12, as the agricultural habitat which is to be protected does not require such varied prescriptions. It is advisable to keep the number of paragraphs in a contract to the minimum possible to make the agreement easy to understand for the farmers, and to keep to one topic per paragraph.

There are usually many prescriptions for each tier, because in general occupiers are legally free to make use of their land as they wish. The prescriptions therefore have to rule out all the potentially seriously damaging activities that the administering body does not wish to occur. It is, however, important to only preclude activities that can be clearly justified. Minimising the conditions imposed on farmers should encourage their enrolment and focus their attention on complying with the most crucial conditions. It can be useful if the design of tiers conforms to some system of farming to which the farmers can relate. Usually the tiers attempt to specify some system of non-intensive farming that used to be common in the area before intensification took place. Farmers are likely to find it easier to relate to tiers if they have some agricultural title that they understand, for example 'Meadow Bird Scheme' or 'Permanent Grassland Enhancement'.

Prescriptions can be designed to represent a gradation in farming intensity. For example, Tier 1 in the Somerset Levels ESA specifies that only chain harrows and rollers can be used (other cultivation is prohibited) and maximum rates of fertiliser are 75 kg/ha of N, 37.5 kg/ha of P and K (Figure 11). The next Tier 1a for extensive grass specifies in addition that no chain harrow or roller may used between 31 March and 1 July plus a maximum of 25 kg/ha of N, 12.5 kg/ha of P and K. The different inputs and operations are restricted in a progressive way, which results in the higher tiers having cumulatively higher restrictions which require higher payments to compensate the farmers for the farming profit they lose. Tiering payments in this way allows the varying situations of farms to be taken into account, and the highest tiers ensure that some very high nature value habitats can be conserved.

**Figure 11 Examples of management conditions in different tiers in the UK**
(prices from 1998)

| | Cultivation | Max. Fertiliser | Payment |
|---|---|---|---|
| Tier 1 Permanent Grass | Only chain harrows & rollers | 75:37.5:37.5 kg/ha of NPK | 83 EUR/ha |
| Tier 1a Extensive Permanent Grass | Only chain harrows & rollers but not from 31/3 to 1/7 | 25:12.5:12.5 kg/ha of NPK | 120 EUR/ha |

**Menu structure from the Netherlands**

In the Netherlands, the management packages for biodiversity and landscape are prepared in a menu structure. The regional governments (provinces) decide in which areas the scheme will be applicable and which packages will be included. As soon as the provincial plans are decided upon, farmers in designated areas can choose from the available menu. Possible menu choices may include:

- individual or collective (> 100 ha) contracts for the protection of meadow birds;
- in the case of collective contracts: different levels of ambition as to the number of breeding birds per 100 ha;
- different mowing dates (1 June – 22 June) for the protection of meadow birds;
- different widths of field margin management on grassland or arable land;
- in the case of botanical grassland management: different levels of ambition as to the number of plant species per 25 $m^2$;

- in the case of landscape features and cultural heritage: several possibilities for creating, restoring and/or maintaining features (the landscape menu is shown in Figure 12 below).

**Figure 12 Management packages for landscape features in the Netherlands**

| Management Prescription | Payment* |
|---|---|
| Planting or restoring landscape features | Up to 9,075 per ha |
| Basic requirements and management | — |
| No changes in the composition of landscape features other than management of the features | — |
| No application of chemical pesticides and fertilisers and no burning near the features | — |
| Requirements relating to the timing of activities (eg all timber management should take place during the winter) | — |
| If necessary: establishment and maintenance of a fence at a distance of at least 1 metre from the landscape feature | 0.42 per m |
| Yearly or periodic management of the following landscape features | |
| 1. Wooded banks | 238 – 474 per ha |
| 2. Wooded dykes and land boundaries | 238 – 474 per ha |
| 3. Shelter belt / windbreak | 215 – 431 per ha |
| 4. Alder coppice | 11 – 22 per 100 m |
| 5. Coppice woods | 431 per ha |
| 6. Hedges | 0.80 per m |
| 7. Shrubs / brushwood hedge | 0.19 per m |
| 8. Pollarded trees | 2.72 per tree |
| 9. Wooded hollow roads | 1,060 per ha |
| 10. Standard fruit trees | 9 per tree |
| 11. Duck ponds | 1,493 per ha |
| 12. Ponds | 41 – 77 per pond |
| 13. Reed borders and small reedbeds | 499 – 694 per ha |

* Payments may vary according to the coverage (eg density of trees) or the size of the feature (eg for ponds). Except for planting or restoration payments, the payments mentioned are annual.

## 7.4 Costs of management packages

In this section, approaches for calculations of the costs for payment of the management agreements are described by taking three examples. The UK example illustrates the income foregone approach, the Netherlands example illustrates the cost incurred approach, incorporating an incentive payment, and the Czech example shows a combination of the income foregone and cost incurred approach.

The UK approach is based on calculating the Gross Benefits of a farm, called the Gross Margin. The benefits and the variable (direct) and fixed costs are calculated using standard indicators for benefits of annual yield and crop value and for costs of labour, machinery, seed, fertilisers, pesticides etc. The calculation follows the traditional economical method of cost-benefit balances under different patterns of cropping and/or grassland management.

Concerning the Dutch approach, there was a previous discussion on how to calculate the effects of using extensification schemes, mainly dealing with the practices of intensively managed dairy farms.

In particular, grassland research focused on the feeding value of grassland by extensification of the grassland management, eg by delaying the mowing and grazing dates and by limiting the use of fertilisers. In the Dutch situation, the feeding value of grasslands is important due to the high level of livestock units per hectare. The payment method for grassland extensification is based on the financial impact of reducing the energy value of grass crops, expressed in so called kVEM.

### *7.4.1 Calculation of payment levels in the UK: an example*

**Method for calculation of costs**

The calculation of costs is often carried out by agronomists or other specially trained experts, and relies on the availability of financial data on the sales and costs of farmers. It can be useful to test estimates of payments by asking reliable/trustworthy farmers in an area whether such an amount would tempt them to enrol in a scheme. This cross-checking was used in the UK to establish payment rates for the first ESA schemes.

The calculation of income change (or income forgone) for farmers participating in particular schemes is central to the setting of payment levels. The *partial budget method,* which is presented below, combines the effects of all elements that will be altered by scheme participation. Any item of revenue or expenditure that will change must be included. A very good knowledge of the existing farm system and the farm system the farmers will adopt to come within the scheme rules is essential for the calculation. In practice, farm business specialists tend to use Gross Margin data as a short cut to doing the calculations.

Gross Margins are obtained by subtracting the costs of inputs, such as fertiliser or tractor fuel, from the price achieved for a crop/agricultural product which was produced with those inputs. These input costs are also called *variable (or direct) costs.* The Gross Margin gives an initial estimate of the profitability of a specific crop or livestock. There are also other long-term costs, however, which the farmer has to take into account, such as land rental charges and wages, insurance for buildings etc. These are called *fixed costs* because they cannot be altered easily.

Examples of Gross Margins for arable crops grown in England, and used to calculate the Gross Margin of a typical arable rotation are shown in the example given below (Figure 13). As this rotation contains some set-aside its Gross Margin is slightly less than that of the crops.

**Figure 13 Calculation of Gross Margin for UK circumstances (1998 prices)**

| All figures are per hectare | Winter | Winter Barley Malting | Winter Oilseed Rape | Spring Barley Feed |
|---|---|---|---|---|
| Gross Output | | | | |
| Yield (tonnes) | 7.0 | 5.5 | 2.5 | 5.7 |
| Price (EUR/tonne) | 150 | 200 | 265 | 150 |
| Crop Value (EUR) | 1000 | 1100 | 660 | 840 |
| Area Payment (EUR)* | 415 | 415 | 700 | 415 |
| Total (EUR) | 1500 | 1500 | 1400 | 1300 |
| Variable Costs | | | | |
| Seed | 65 | 72 | 60 | 70 |
| Fertiliser | 160 | 110 | 144 | 125 |
| Sprays | 260 | 240 | 130 | 120 |
| Miscellaneous | | 6 | 60 | 6 |
| Total (EUR) | 490 | 430 | 400 | 320 |
| Gross Margin (£) | 960 | 1070 | 960 | 930 |

* This is based on an EU subsidy for cereal producers.

The elements of Gross Output and Variable Costs show many of the farmers costs and returns which are likely to alter when the farming system changes. They give an initial idea of the different factors farmers have to take into account when considering whether to join an agri-environment scheme. It is important that each figure used to calculate the Gross Margin reflects the farming in the area. For instance, if the typical yield of winter wheat is only 6 t/ha, then the Gross Margin would have to calculated taking this local variation into account.

### *7.4.2 Calculation of payments in the Czech Republic*

Field margin extensification (or the creation of 'buffer strips', see glossary for details) is a typical example of income foregone, and has been used here as an example as it shows clearly the concept and calculation process. The estimation of prices was based on figures from 2001.



A field margin (or 'buffer strip') without herbicide application in the UK

*Measure: Not using fertiliser or pesticide on 10m field margins on arable land*

The payment calculation was based on the assumption that the loss incurred by the farmer is total (quality and quantity of crop decline is substantial). Loss is expressed by gross margin[7] (GM) per hectare (average GM based on sold crops[8]). However, farmers also have savings on this margin (eg pesticides, fertilisers and mechanisation costs). Savings are based on costs of a particular input or machinery use, and this is the subject of a regular survey among the providers of goods and services that is carried out by the Research Institute of Agricultural Economics (RIAE). This working capital could be used by the farmer in a different way, and the usual use is investment at a bank which results in an income of interest. For the purposes of the calculation the interest rate was taken as 4 per cent per annum, and it was assumed that working capital was used for half a year, on average. The core of the calculation is therefore: GM/ha minus interest from saved working capital/ha, which can be considered as the core of the payment level. The payment was then calculated per hectare of arable field surrounded by extensive field margins. This was calculated by assuming an average field size (which was estimated according to survey done in the area under consideration)[9]. GM data were obtained from the Research Institute of Agricultural Economics and Reference book (for advisors and agricultural economists).

**Payment calculation**

| | |
|---|---|
| *Extra cost* | |
| Arable land Gross Margin | €214.5/ha |
| Decline of Gross Margin | 100% |
| *Saved cost* | |
| Fertilisers and sprays | €74.5/ha |
| Other variable costs (eg machine use) | €9.7/ha |
| Total | *€84.2/ha* |
| Interest (4% per annum for 6 months) | €1.7/ha |
| Income foregone minus savings of costs (214.5-1.7) | €212.8/ha |
| Area of 10 m strip if an average field is 25 ha (10 × 4 × 500[10]) | 2 ha |
| Payment per hectare (2 ha × €212.8/25 ha) | €17.0 |

In each calculation case there was an assessment of the possible use of an incentive payment. It was proposed to use incentives only in cases when the need was really clear (eg when a low participation rate of farmers on arable land was expected).

[7] Value of sold commodities minus variable costs (for example: fertilisers, pesticides, seeds etc.)
[8] Like grain, oilseed rape etc. Surveys have shown that farmers are not keen to introduce measures leading to a decline of forage crops, especially in the case of maize. With other types of forage crops (such as clover or lucerne) there less significant problem because these do not require a significant amount of fertilisers or pesticides.
[9] As an example let us assume fields there are on average 25 ha. Field margins 10 m wide represent 2 ha per field. If the payment per ha for margins is €212,8, then the payment per ha for the average field is (2 × 212,8)/25 = €17.
[10] It means 4 sides of a field, each of 500 metres in length of field by 500 metres.

*Main difficulties with payment calculations in the Czech Republic*

- Cost data availability (especially about less common crops and farmers activities). For example, a minimum of one year is needed in order to get production costs for organic vegetables and monitoring is needed on several farms.
- Allowances for spot and linear features in payments (eg occurrence of temporal pools on meadows is not regular and evenly spread).
- Overcoming conceptual difficulties to meet the requirements of payment calculations based on income foregone/costs incurred. These include the creation of arguments to support maintaining current extensive production based on the opportunity cost concept, the necessity of fodder production evaluation when animal production produces negative or zero GM[11], looking for an argument to support abandoned land management etc.

It should be noted that the discussion of calculation concepts, data collection and the calculation itself took more than half a year during the preparation of two agri-environment pilot projects in the Czech Republic.

### *7.4.3 An example of a payment calculation for arable conversion*

The following budget illustrates the effect, typical of 'Arable Reversion' tiers, of replacing one hectare of arable cropping with one hectare of low intensity livestock production.

Stopping arable production results in a loss of the arable Gross Margin. However, cost savings can be achieved in labour and machinery (fixed costs) and interest on working capital (Table 5).

**Table 5 The financial impact of stopping arable crop production**

| Prescription | Arable Reversion | Losses EUR/ha | Gains EUR/ha |
|---|---|---|---|
| **Costs Saved** | | | |
| Interest on work + capital on arable crops | | | 23 |
| Fixed costs savings | | | 200 |
| **Income Lost** | | | |
| Loss of arable gross margin | | 930 | |

Similarly, the introduction of enterprises on the low intensity grassland involve the following costs: establishment of grass, leasing of quota, the annual cost of fencing, and interest on working capital in the stock enterprise. The gains that must be considered in the Gross Margin from the sale of hay and livestock.

**Table 6 The financial impact of starting low intensity grassland management**

| Prescription | Losses EUR/ha | Gains EUR/ha |
|---|---|---|
| **Extra Income** | | |
| Hay production | | 200 |
| Grazing (0.2 LU at €460/LU) | | 92 |
| **Extra Costs** | | |
| Interest on work + capital (ie livestock) | 20 | |
| Livestock quota leasing | 6 | |
| Grass establishment (amortised) | 52 | |
| Fencing (amortised) | 25 | |

These two separate elements can now be combined in the partial budget calculation.

[11] This is designed to produce an incentive to cut meadows, as there is no market for hay. In this case income foregone for grass production is calculated by taking into account reduced inputs and the reduced yield.

**Table 7 Financial impact of arable reversion**

| Prescription | Losses EUR/ha | Gains EUR/ha |
|---|---|---|
| **Extra Income** | | |
| Hay production | | 200 |
| Grazing (0.2 LU at €460/LU) | | 92 |
| **Costs Saved** | | |
| Interest on work + capital on arable crops | | 23 |
| Fixed costs savings | | 200 |
| **Income Lost** | | |
| Loss of arable gross margin | 930 | |
| **Extra Costs** | | |
| Interest on work + capital (ie livestock) | 20 | |
| Livestock quota leasing | 6 | |
| Grass establishment (amortised) | 52 | |
| Fencing (amortised) | 25 | |
| **Total** | 1033 | 515 |
| **Income Change** | 518 | |

The income change is the same as the compensation the farmer will need if they are to be no worse off. This layout can be used in all calculations of income change. In addition to the loss of income calculated above, many agri-environment schemes also provide an incentive for the farmers to join the scheme (see the example from the Netherlands). This should be taken into account when calculating the overall payment levels.

### *7.4.4 Calculation of management costs in the Netherlands: an example of a grassland management scheme*

The grassland package consists of the following management prescriptions:

- mowing annually;
- not ploughing, reseeding or using rotary cultivators;
- not using pesticides, except to control spots of creeping thistle, nettle and broadleaved dock;
- not rolling or chain harrowing between 1 April and 15 June;
- not applying animal manure between 1 April and 15 June;
- not mowing or grazing between 1 April and 15 June.

The optimum production level in the Netherlands is 10,000 kVEM (unit for returns of grassland, based on energy value). On peat soil, the 'standard decline' (the difference between the optimum and the reference situation) is calculated to be 23 per cent. This means that the reference situation on peat soil is 7,700 kVEM. The various management prescriptions lead to a decline in returns of 30.7 per cent. There is also an additional labour requirement for the farmer to control spots of creeping thistle, nettle and broadleaved dock.

These extra man-hours are calculated as 1 hour per hectare. Finally, operating costs and savings due to management must also be considered. Operating costs are related to the prohibition on applying animal manure during a certain period. Of course these costs will only be compensated insofar as they exceed the requirements set by law. The operating savings are related to reductions in the number and type of operations permitted on grassland and reduced fertiliser use.

Combining these elements results in a financial compensation for the management prescriptions, supplemented by an incentive to stimulate farmers to enter into the management agreements. This recognises that a farmer entering into a management agreement has to accept an administrative burden and restrictions on the management options available, both annually and in the medium term.

The total compensation (per hectare per year; including an incentive of 15 %) is:

| | |
|---|---|
| decline in returns: | 30.7% of the reference level (7,700 kVEM) = 2,370 kVEM |
| extra man-hours: | 1,15 hours |
| operating costs: | net savings of €3 (sum of costs and savings) |

The price of 1 kVEM and 1 man-hour is fixed annually. The kVEM price is based on the market price of concentrates over the last five years. The price of labour is based on collective labour agreements. In this example the price of 1 kVEM is €0.16, and 1 hour of labour costs €15. As a result, the total compensation for the grassland package is €402 per hectare per year.

## 7.5 Financial resources: a UK example

The cost of all the payments to farmers in the scheme can be calculated if the area of eligible land in the zone is known, and assumptions are made about participation rates. Suppose there are 10,000 hectares of arable land in the zone that are eligible for grass reversion in Tier 1. If the environmental objectives of the scheme are known to require 50% participation, and payments will be set to achieve that level, then the cost of the payments will be:

10,000 ha x 50% x €526/ha = €2.62 million per year.

Calculations of this sort will have to be done for each Tier and Option to arrive at the total annual cost of compensation payments. Suppose the scheme has another option aimed at making existing permanent grassland more favourable to nesting birds, and there are 5,000 hectares of this grassland in the ESA. To achieve the environmental objectives, 75% should come within the scheme at a calculated payment rate of €82/ha. The cost will be:

5,000 ha x 75% x €82/ha = €0.31million per year.

The total cost of the scheme adds up to €2.94 million.

# 8 Administrative issues

## 8.1 Introduction

The administrative arrangements required to set-up national or pilot agri-environment schemes vary according to the governmental and administrative structures of each country. The rather complex administration in some EU Member States is not necessarily a model for other countries. Due to the former collective farm structures in most CEECs there may not be the necessary administrative structures for informing, and dealing with, a great number of individual farmers. The implementation of any agri-environment scheme is a considerable bureaucratic challenge and this chapter aims to provide assistance with this task.

Several of the important administrative issues, such as the characterisation of programme areas and the definition of management packages, have been dealt with in the preceding sections. This chapter mainly discusses the administrative implications of the presentation and justification of schemes for approval by the European Commission, as well as practical aspects of scheme implementation on the ground.

It is assumed in the text below that agri-environment schemes are being introduced within the administrative framework applying in the EU. This will not necessarily apply in all circumstances in CEECs. Pilot schemes introduced under SAPARD are subject to the framework set out by the European Commission, which is similar, but not identical.

## 8.2 Operational objectives

Chapter 8 provides guidance on how to:

a. develop a proposal for the institutional set-up of agri-environment schemes;
b. understand the administrative guidelines of the European Commission;
c. develop an information scheme for farmers about agri-environment schemes;
d. assess the administrative capacity available to deal with scheme applications of farmers, and develop a proposal of how much administrative capacity would be needed (time and people);
e. develop a proposal for transferring payments to farmers;
f. develop a proposal for ensuring contract compliance by farmers;
g. list the financial resources required to implement the administration of agri-environment schemes in the pilot area(s).

## 8.3 Basic principles

Important principles to be taken into account for national scheme design are discussed in chapter 4.

Several of these are also relevant for the implementation phase of agri-environment measures. The following basic considerations should be taken into account.

a. Agri-environment schemes are often established and/or administered jointly between environmental and agricultural departments. Good working co-ordination or liaison procedures are important for successful and coherent implementation of such schemes. These can be assisted, through twice-yearly meetings, regular inter-departmental communications, or other means. Where applicable, such procedures should also include relevant parts of the regional administration or national park authorities etc.

b. Important feedback on the progress and acceptance of schemes, as well as on possible administrative problems, can be gained through consultative committees. These could usefully include regional or local authorities, as well as representatives of farming and conservation organisations. Even though they may only meet once a year they can bring considerable outside expertise into the running and evaluation of agri-environment programmes.

c. The administrative design and procedures for implementing agri-environment schemes should be realistic. Most schemes in the EU are carried out by agricultural ministries and their regional offices; in a few cases the environmental administration is responsible. As pointed out in chapter 3, the lead organisation for implementing an agri-environment scheme in any country should be the one that has the greatest credibility with farmers (this is also important in training, see chapter 9), as well as sufficient administrative capacity, expertise and presence in the affected areas. At the same time it should make use of, and have access to, specialised expertise in other government units. There may also be an important role for other government agencies, technical and research institutions, extension services etc. Furthermore, the administrative complexity of scheme and contract design should be adapted to the level of administrative resources available, without endangering the minimum standards for EU approval. In many cases it will be necessary to increase the staffing level of the responsible institutions.

d. Given the lack of experience with agri-environment schemes, the training of administrative staff at all levels will be an important factor for scheme success in all CEECs. This applies particularly to administrators who are in direct contact with the target group, as their knowledge about the scheme and efficiency in dealing with farmer applications has an important influence on scheme acceptance among the farming community. Similarly, the training of farm advisors and teaching staff is an important first step in establishing a scheme (see chapter 9 for more information).

## 8.4 Scheme presentation and justification

The presentation of a technically well prepared proposal based on the requirements outlined in Regulations 1257/1999 and 445/2002 is essential for the fast approval of an agri-environment scheme by the European Commission.

While the considerable body of common market regulations cannot be discussed in detail here, it is important to be aware that any agri-environment schemes have to be compatible with, and build on, these regulations. Of course, these do not apply prior to accession to the EU.

Specific requirements for the presentation of agri-environment schemes are listed in Articles 41 to 44 of Regulation 1257/1999, and are further specified, along with requirements for justification of schemes in Regulation 445/2002. When these legal texts are summarised, a number of necessary conditions can be

identified for the technical presentation of an agri-environment programme. Schemes submitted for approval to the European Commission need to contain the following information.

a. A *geographic definition* and description of the programme areas (Reg. 1257/1999, Art. 43). Information on this requirement has been provided in chapter 6.
b. A *description of the proposed objectives* and their justification in view of the characteristics of the area, including an indication of the relevant Community policy objectives which the programme seeks to fulfil (Reg. 1257/1999, Art. 22). This requirement is intended to promote an integration of objectives between different Community policies.
c. A *description of the management packages* and the conditions for entering into management agreements (Reg. 1257/1999, Art. 23). This provision has been discussed in chapter 7.
d. The *amount of aid* to be paid for different management contracts on the basis of the conditions to be fulfilled (Reg. 1257/1999 Art. 24). The payment levels have to be justified with comprehensive agro-economic calculations, showing the expected loss of income suffered, and the additional costs incurred by complying with management prescriptions, and taking into account a baseline code of Good Farming Practice. Where the payment includes an incentive component this should, as a rule, not exceed 20 percent of the loss of income suffered and the additional costs incurred (Reg. 445/2002, Art. 17). The size of the *incentive component,* as well as any deviations from the 20 per cent rule, have to be justified as indispensable for the effective implementation of the measure (Reg. 445/2002, Art. 19). See chapter 7 for more information.
e. An *estimate of the annual expenditure* for implementing the programme (Reg. 1257/1999, Art. 46). This condition is intended to facilitate the budgetary planning by the EU authorities.
f. *Provisions for the information of farmers* about the agri-environment programme. The European Commission defines two different objectives for this part of an agri-environment scheme to give publicity to the Community contribution towards establishing the programme (Reg. 1257/1999 Art. 43). Both points are covered in more detail in section 8.5.1.
f. *Plans and procedures for control* (Reg. 445/2002 Arts. 58-64). The control of contracts is discussed in more detail in section 8.5.4 below.
g. *Monitoring and evaluation* is given considerable emphasis in both Regulations (Reg. 1257/1999 Arts. 48 and 49 and Reg. 445/2002 Arts. 53-57). Monitoring and evaluation are discussed in chapter 10.

## 8.5 Administering the farm contracts

### *8.5.1 Information and advice*

The provision of good information and advice to farmers is important for ensuring satisfactory scheme uptake. Sufficient administrative resources have to be set aside for this task, which may require the hiring of additional staff. Direct contact between knowledgeable scheme officers, or administrators and farmers, is the best means for convincing them to sign a management contract. The more pro-active the administration can be in this respect the better. In the UK (and other Member States) it has proved very successful to designate a special project officer for each agri-environment scheme. These officers maintain continuous contact with the farmers in their area, advising them on the selection of contracts and best management practices, as well as monitoring compliance with the agreement, and reporting scheme results (see Box 9).

Where such ideal conditions cannot be created, there should at least be provision for sufficient training of scheme administrators, and for consultation periods with the farmers. In some cases it may also be possible to make use of private or cooperative farm advisory services. As long as a certain quality of information can be guaranteed, a very pragmatic approach is to be recommended. In some parts of Spain the agricultural extension services have informal arrangements with rural banks for example. The reform of the CAP in 1992 brought many new bureaucratic requirements which farmers are not familiar with. In exchange for depositing their subsidies with a specific bank, the latter help the farmers with paperwork such as subsidy applications. This system can also be exploited for informing farmers about available agri-environment measures, as the bank advisors are also an important source of information for them about new agricultural policy programmes.

While direct contact with farmers is the most successful way of interesting them in an agri-environment scheme, such an approach can be complemented by written information. Particular care has to be taken that the documents prepared for farmers use language which is clear, and easily understood. Such material should be widely available, and can be provided directly to rural communities, by posting it either to each farm holding or to the mayor or another key person in each village. A third valuable means of publicity for agri-environment schemes can be the farming press or rural newspapers. Where they exist, an appropriately placed article could be a good source of information for farmers about the new measures.

### *8.5.2 Dealing with applications*

As is obvious, the usual administrative procedures apply to the registration of applications in agri-environment schemes, such that the applicant's name, date and the geographic location of each application is recorded in an overall register. These data provide an invaluable framework for monitoring and evaluation programmes.

Fast and efficient processing of applications helps to ensure scheme acceptance among the target group. Bureaucratic delays and problems are a serious deterrent for farmer participation in any voluntary scheme. Thus, sufficient administrative resources need to be made available for this task. Furthermore, the complexity of application forms should be kept to a minimum for ease of administration and to simplify the application process for potential participants. In the UK, for example, farmers are first asked to send in a 'notification of interest' in which they indicate their strong interest in participating in a particular agri-environment scheme. The final application form for that scheme is then filled in with help from a professional adviser. In some areas of Spain, farmers unions have taken over such a role and are compensated for their efforts by a small payment per contract from the regional government.

### *8.5.3 Managing payments*

The usual mechanism for making payments to participants in agri-environment schemes in the EU is via bank transfers. In countries where not all farmers have a bank account it would obviously be problematic to rely solely on such a mechanism. However, as no other methods have been required so far in the EU there is no experience with other mechanisms that could be built on. It may be that the availability of agri-environment payments could contribute to an extension of the banking system into rural communities, as indicated by the example of Spain (see 8.5.1 above).

Another possibility could be to make block payments for the whole enrolled area of one village or agricultural marketing cooperative to a neutral party or respected representatives of these entities. This may, however, just transfer the problem, and could lead to potentially serious disputes within the rural communities themselves. In the Welsh Tir Cymen Scheme payments are sent out as cheques to the individual farm businesses enrolled in the scheme. Payment via cheque which could be turned into cash at banks appears to be a promising option in areas where the banking system is still underdeveloped.

In addition, Regulation 445/2002, Art. 47, outlines reporting requirements for the Member States' expected expenditure. Member States also have to provide progress reports (Reg. 445/2002 Art. 53) which include information on the action taken to ensure effective implementation, measures taken to ensure compatibility with Community policies, progress of measures and priorities, and any change in general conditions such as socio-economic trends, by 30 April of the year following the one covered in the report. Furthermore, Member States also should forward forecasts of expenditure to the Commission by 30 September each year (Reg. 445/2002 Art. 47). Naturally, these conditions would only apply fully to Candidate Countries after accession to the EU has been completed.

### *8.5.4 Ensuring contract compliance*

Agri-environment programmes can only achieve their environmental goals if there is effective contract compliance. To ensure contract compliance there have to be effective control procedures. These should include administrative controls as well as on-the-spot checks.

Regulation 445/2002 stipulates in Art. 59 that Member States should define the systems and means for the control of management contracts as well as the persons who will be subject to such tests.

The same regulation specifies in Art. 60 that administrative checks shall be 'exhaustive and include cross-checks'. The term exhaustive means that all the conditions for granting a management contract have to be checked individually and comprehensively. In the EU cross-checks should be carried out with the help of the integrated administration and control system (IACS), where appropriate. This system was developed as the administrative basis for implementation of the 1992 CAP reform. IACS contains data on the amount of land and types of crops grown by each land holding in the EU as well as their livestock numbers and breeds.

Such a comprehensive data system takes time to be developed, but the principle of the Regulation still applies. Wherever possible, cross-checks within the administrative system should be carried out to avoid unjustified double payments to the same land holding from different subsidy programmes (see also Art. 60 of Regulation 445/2002), and to have a second control on the correctness of the farm data supplied by an applicant. On-the-spot-checks are probably the most efficient means of ensuring contract compliance as they show the farmers within their own villages the need to comply with agreed management conditions. Title III in Reg. 2419/2001 defines the requirements for such checks. Firstly, at least 5 percent of holdings from all different types of contracts in an agri-environment scheme should be covered by this control method every year. In addition, as far as possible at the time of the visit all the conditions agreed to by the farmer shall be investigated in the same on-the-spot-check.

When breaches of contract have been found, appropriate infringement procedures and penalties need to be in place to ensure future compliance. Art. 64 of Regulation 445/2002 stipulates that Member States have to institute and put it into operation an adequate system of penalties. It also requires any penalties imposed to be effective, to be proportionate to the severity of the infringement, and to have an adequate deterrent effect.

It is left to the Member States to define and justify what constitutes an 'adequate deterrent effect', but in many cases this will include an appropriate monetary fine. In cases where 'a false declaration has been made as a result of serious negligence', the beneficiary in question should be excluded from participating in any schemes under Regulation 1257/1999 for the calendar year (Art. 63 of Regulation 445/2002). In cases where 'a false declaration [is] made intentionally' they should be excluded for two years.

## 8.6 Financial and resource aspects

As will have become clear from the above, monitoring and evaluation procedures require considerable financial and administrative resources. In the UK, on average five percent of total scheme costs are spent on these measures. However, as they assure overall cost effectiveness and successful policy development such expenditure is justified.

The general administrative costs are even higher. In the UK running costs for ESAs have been higher during the initial years of the schemes than total premiums paid out to the farmers. Even well-established schemes still require about 20 per cent of the overall expenditure to be spent on administration. It has to be said that the very successful system of ESA project officers takes up the major part of this expenditure. Schemes with less complex management contracts, such as some horizontal programmes, may not demand quite such big administrative resources. Nevertheless, it is very important to be aware of the potentially considerable administrative costs of implementing an agri-environment scheme.

In order to work out the cost of the administrative resources required for implementing an agri-environment scheme, the following factors have to be taken into account:

- time spent on scheme design and presentation of the scheme for approval by the relevant authorities;
- time spent on preparing information material for farmers;
- cost of publishing this information material;
- (additional) administrators required for processing applications;
- agri-environment project officers or field staff responsible for liasing with farmers and control of contracts;
- resources spent on contract enforcement, should breaches occur;
- administrative resources and time spent on management of payments and the overall agri-environment budget;
- monitoring and evaluation costs;
- training.

This list is not necessarily exhaustive, but should be a useful aid when calculating costs. It has to be said that only a limited number of EU countries calculate their administrative costs in such detail. In fact, in quite a few cases EU Member States have relied on existing administrative structures for implementing agri-environment schemes, without employing any additional staff except for scheme monitoring. Such an approach can work when the existing administrative network is sufficiently strong. However, this is rarely the case, and all successful schemes have mostly required additional personnel. Finally, it should be noted that several of the above tasks, such as the preparation of information material or monitoring, can also be contracted out to private organisations.

To date, the European Commission has not been willing to contribute to the administrative costs of agri-environment schemes. It may be advisable to draw up a proper costing of planned monitoring and evaluation procedures in order to apply for funding of these important tasks from alternative sources.

## 8.7 An overview of administrative issues

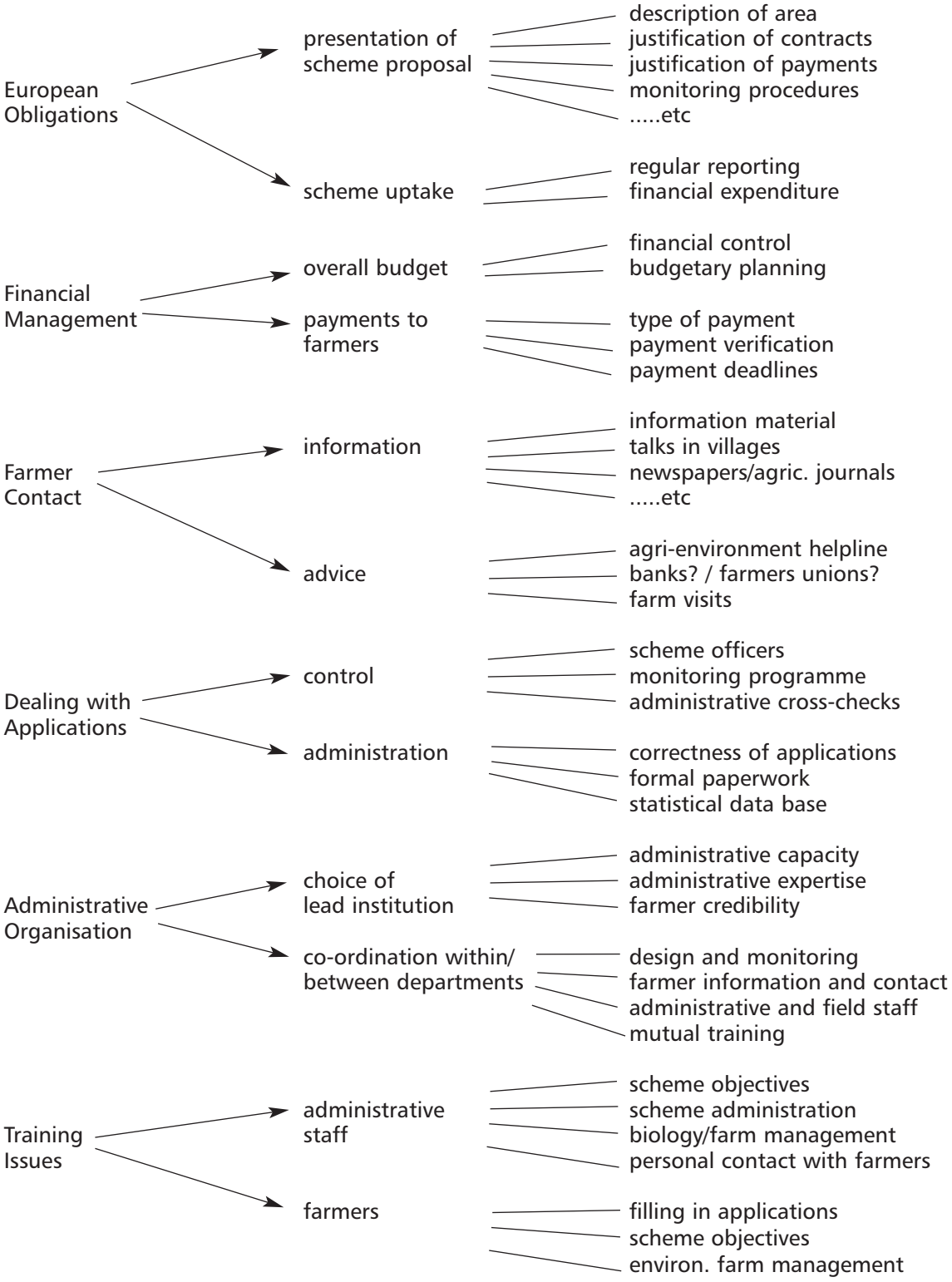
It will have become obvious that running an agri-environment scheme is potentially a very complex operation, but this does not mean it is impossible, as demonstrated by the 15 present EU Member States which have all already established their own schemes with greater or lesser success. Many did so in a rather short period.

One of the most important factors to be considered when introducing agri-environment schemes is to set realistic goals, and establish well-defined schemes with clear objectives. At the outset it will not be possible to apply all the administrative principles and rules which have been listed above. Nevertheless, the best possible design should be aimed for. In doing this it is particularly important to take account of the basic principles described in section 8.2. Furthermore, any initial schemes should be considered a learning experience. This means that those involved should be looking out for possible improvements, and that monitoring and evaluation procedures have to be given due attention, as they

are very valuable for assisting the development of further and improved agri-environment measures. Further information on this important aspect of scheme design is provided in chapter 10.

An overview of different administrative aspects to be considered for the implementation of an agri-environment scheme is presented in Figure 14. This overview is not exhaustive, and does not cover monitoring and evaluation procedures, but hopefully provides a useful checklist for establishing any new agri-environment programmes.

**Figure 14 Administrative issues to be considered in agri-environment schemes**



**Box 9 A working day of an ESA project officer in the UK**

As ESA project officer, John Smith, is responsible for a wide range of tasks. One of his typical working days could be as described below.

In the morning John Smith has two appointments with farmers in his area. The first visit is to an established participant in the ESA scheme. This farmer wants to change the management of his farm slightly and needs to discuss with the project officer whether the planned changes are compatible with the ESA management conditions for his hay meadows, and the stocking limits on his other grassland. Fortunately the farmer had interpreted his ESA contract correctly, and John Smith raises no objections to the planned changes. The second visit is to a farmer who has not yet enrolled in the ESA scheme but is considering it. He is unsure whether his more intensive livestock system would enable him to participate in the ESA scheme, and whether the ESA payments would compensate his loss of earnings due to compliance with the ESA conditions. John Smith and he discuss possible options for a considerable time but do not find a solution that would satisfy the farmer. The farmer promises to think it over again, and the project officer leaves (without immediate satisfaction).

Before going into his office John Smith decides to pay a visit to a river valley where much of the grassland has been entered into the ESA scheme. It is only a few days before the earliest allowed mowing date under the hay meadow contract, the weather has been very hot during the last week, and he wants to check whether all farmers in the ESA scheme have resisted the temptation to cut the grass before the date specified in their ESA contract. Some farmers are mowing their meadows, but not on land enrolled in the ESA. He greets them to make sure that everyone knows about his control visit, and is relieved that there will be no need to engage in dispute with a farmer or to impose sanctions for a breach of contract.

At midday he reaches his office to start the paperwork, which is a big part of his overall work. There is further information to be sent out to the second farmer, the ESA contract of the first farmer needs to be updated, and there are many more tasks to complete. ESA project officers collate data on the uptake of the different management contracts within their ESA scheme, send out information material about the scheme, process ESA applications and verify that the data given are correct. Each ESA officer is responsible for about 300 – 400 farmers which generates a considerable number of queries.

During some evenings John Smith may also give a talk to a local farmers' group or a village council about the purpose and functioning of the ESA scheme and the different management contracts available. He also attends agricultural shows with information about the ESA, and shows groups of visitors and/or farmers around ESA farms. Furthermore, he is responsible for liasing with local authorities and interest groups such as conservation bodies or farmers' unions, about the scheme. There are specific liaison meetings set up for this purpose where the different groups meet. Information and suggestions for improvements from these contacts is used by John Smith for writing his yearly reports. With this material he contributes significantly to the evaluation and review process for the ESA scheme.

# 9 Training

## 9.1 Introduction

It is often said that sustainable agriculture is 'information intensive' and the successful development and implementation of an agri-environment scheme is no exception to this simple rule.

In order to achieve the long-term and durable changes in agricultural practice necessary to benefit the environment, an agri-environment scheme must produce significant changes in the attitudes, knowledge and practical skills of a range of stakeholders involved in all stages of the scheme from development to delivery to final evaluation. This inevitably involves the 'input' of significant amounts of information, including:

- general awareness-raising and publicity campaigns, including articles in relevant trade/sector journals, as well as contact with both formal farmer unions and informal farm networks (eg farmer 'discussion groups');
- extensive consultation with the local farming community (eg whilst developing management prescriptions);
- personal contact by mail, telephone or meeting with individual farmers to encourage their participation;
- information days for potential participants;
- technical support from farm and wildlife conservation advisory services during the planning and implementation of management prescriptions;
- publications, including brochures, newsletters, fact-sheets etc;
- establishment of demonstration farms;
- targeted training activities.

This chapter focuses upon some of the targeted training activities appropriate for supporting agri-environment schemes. Other activities (eg information and advice) are addressed elsewhere in the manual.

## 9.2 Operational objectives

**Chapter 9 provides guidance on how to:**

a. identify why training is an essential element of a successful agri-environment programme;
b. identify which people need which type of training;
c. develop and implement a suitable training scheme.

## 9.3 The importance of training

Comprehensive and relevant training programmes are an essential component of the preparation and implementation of any agri-environment scheme, especially where schemes are being introduced for the very first time.

However, training was not a mandatory component of Regulation 2078/92 and was (with the notable exceptions of the Netherlands, Sweden[12] and Finland) often neglected or poorly implemented by EU Member States when agri-environment schemes were first introduced. Subsequent evaluation suggests that typical reasons for the poor implementation/uptake of these early training programmes by farmers were as follows:

- lack of relevance to the agri-environment scheme eg a tendency to use existing general environmental courses rather than specially-prepared courses to support the national/regional agri-environment measures;
- participation in training activities was voluntary rather than compulsory for farmers;
- poor administration of training programmes;
- poor promotion of training events;
- inadequate facilitation of training activities;
- a lack of 'training of trainers'.



Training for trainers in Croatia

There was also a tendency to focus only upon the training of farmers, overlooking the need to engage a broader range of stakeholders in training activities, including Ministerial staff, paying agency administrators, project officers, farm and countryside advisers, NGOs, scientific staff responsible for monitoring etc.

## 9.4 General principles

Any training activity (irrespective of the subject matter) should always be conducted with a clear understanding of:

**Who** the target audience is;
**What** are the aims and objectives of the training; and
**How** the desired learning outcomes will be achieved.

Training to support the development and delivery of an agri-environment scheme generally has two broad aims:

1. to build and/or reinforce the institutional and administrative capacity of the national, regional and local level institutions which are responsible for the scheme. Since considerable parts of the scheme may be region-specific, it is often the capacity amongst staff and project officers at a regional/local level that needs most strengthening;

[12] About 10% (€22.4 million) of the total financial resources committed to the original Swedish agri-environment programme was spent on training. This was considered essential to achieve effective implementation of the measures in the programme, particularly the regional sub-measures targeted upon the conservation of biodiversity and cultural heritage.

2. to provide appropriate information and technical support to those farmers whom are either preparing to join, or already participating in, the scheme.

The methods and resources used for training should obviously be tailored according to these very different aims and there is a broad range of training activities relevant to agri-environment schemes and associated target groups that can be selected. These include:

- lectures and seminars (eg general courses on the background to agri-environment schemes for all stakeholder groups);
- short practical courses (eg ranging from nutrient management planning to stone wall building);
- one-to-one training (eg during the preparation of whole farm plans);
- workshops (eg for the exchange of experience between advisers in different localities);
- guided visits to demonstration farms (eg to demonstrate the application of new techniques);
- study tours to other regions and/or countries (eg exchange visits by administrative staff to other Ministries of Agriculture with other Ministries);
- training manuals (eg containing comprehensive information for administrative staff).

There are also some general principles specific to agri-environment training that are useful to remember:

a) **Always promote a 'holistic' perspective** – agri-environment schemes involve the adoption of alternative forms of farm management that must be perceived by farmers as both financially viable and agronomically practical. However, farmers must be discouraged from viewing agri-environment schemes as 'just another' form of support payment that can be used to generate revenue from land that is marginal for production or ineligible for other forms of aid. It is important to promote agri-environment schemes as a part of an integrated package of rural development measures that are building the basis of a more sustainable future for farming and clearly identify the broad range of environmental, socio-economic and cultural benefits arising from this approach.

b) **Build upon local knowledge and experience** – many environmentally-friendly farming practices are not 'new' or 'different', but are derived from traditional local practice. This should be reflected in the agri-environment training programmes adopted. A significant proportion of the training for farmers especially should be locally and regionally targeted and aim to build upon local farmers' knowledge and experience in the context of local conditions. Regular consultations with the relevant NGOs and government agencies in a region are also important in terms of incorporating their specific and usually comprehensive regional knowledge in the development of agri-environment measures and programme implementation.

c) **Use existing local networks of knowledge** – training activities at a regional/local level should not automatically 'import' trainers from elsewhere, but where appropriate should either use 'local' trainers or other training measures (eg workshops) to encourage as much as possible the exchange of relevant information and the sharing of experiences amongst existing sources of local knowledge, such as farmers, advisers, environmental NGOs, scientists (eg universities), local government, environmental protection agencies and other interested parties. Where possible can also be a

good idea to support these local networks of knowledge with training materials and other documents (eg an occasional newsletter) that are specific to the local area.

d) *Ensure that training is an on-going and reinforcing process* – try to avoid training programmes that are too short or fragmented. Ideally farmers should be obliged to participate in training activities for more than just the first year of their involvement in the scheme. For example, farmers can be required to attend a short-training course every year to update their knowledge of the scheme. This can be supported with other activities such as regular information bulletins, visits to a local demonstration farm and voluntary participation in regional workshops.

e) *Select trainers according to the target audience* – the success of any training programme ultimately depends upon competent trainers and they must be selected according to the target audience. University lecturers, for example, can be excellent for seminars with policy-makers, but may be less convincing at farm level. In most cases farmers are the most effective at encouraging other farmers to embrace new methods of management.

f) *Ensure demonstration farms are credible and respected* – demonstration farms and exchange visits between regions are useful methods of training. It is important, however, that the managers of demonstration farms have credibility amongst their peers. It is not necessary for demonstration farms to be the most profitable in an area, but the farmers must be respected as leaders of innovation.

## 9.5 Training for officials and administrators

Training is an important part of the capacity building and institutional strengthening required for the effective design and implementation of an agri-environment scheme at both national and local level. Typical target groups for training include the following.

i) Officials concerned with the design and steering of the agri-environment scheme.

ii) Administrative staff (including paying agency staff) responsible for the practical day-to-day management of the agri-environment scheme and its various measures. In the specific case of an organic farming support measure, the target group for training might also extend to the private or voluntary sector organisations responsible for inspection and certification.

iii) Officials, administrative staff and others responsible for the monitoring and evaluation of the scheme (although this is a function that might also be sub-contracted to external agencies or organisations eg universities, research institutes etc).

Indicative topics and training activities for the different target groups of officials and administrators involved in the design and implementation of agri-environment schemes are identified below.

**Table 8 Indicative topics and training activities for agri-environment officials and administrators**

| | Indicative Topics | Indicative Training Activities |
|---|---|---|
| **Design and steering** | • General introduction to agri-environment schemes and EU policy objectives regarding agriculture, environment and rural development.<br>• Experiences with agri-environment schemes in the EU Member States and with similar programmes in Candidate Countries.<br>• Relevant EU legislation and regulations, necessary budgetary and administrative procedures.<br>• Identification and comprehension of key national agri-environmental issues and ther driving forces.<br>• Options for scheme design, including definition of suitable horizontal and zonal measures.<br>• Operational frameworks for monitoring and evaluation, including selection of suitable indicators and reporting procedures.<br>• Potential linkages between agri-environment schemes and other rural development measures. | • Seminars and workshops with national and international experts.<br>• Study tours to EU Member States and Candidate Countries.<br>• Farm visits and discussions with farmers. |
| **Day-to-day administration** | • General introduction to agri-environment schemes and EU policy objectives regarding agriculture, environment and rural development.<br>• Experiences with agri-environment schemes in the EU Member States and with similar programmes in Candidate Countries.<br>• Relevant EU legislation and regulations, necessary budgetary and administrative procedures.<br>• Identification and comprehension of key national agri-environmental issues and their driving forces.<br>• Overall concept and objectives of the agri-environment scheme being implemented.<br>• Detailed administrative procedures, including handling and control of applications (and co-ordination with IACS), selection criteria, handling over-subscription, finalising contracts, payment procedures, field inspections and farm visits, penalties and sanctions etc. | • Specialist training courses.<br>• 'On-the-job' training.<br>• Seminars and workshops with national and international experts.<br>• Study tours to EU Member States and Candidate Countries.<br>• Regular 'in-house' workshops for exchanging experience and evaluating procedures.<br>• Detailed operating manual.<br>• Farm visits and discussions with farmers. |

| | Indicative Topics | Indicative Training Activities |
|---|---|---|
| **Monitoring and evaluation** | • General introduction to agri-environment schemes and EU policy objectives regarding agriculture, environment and rural development.<br>• Experiences with agri-environment schemes in the EU Member States and with similar programmes in Candidate Countries.<br>• Overall concept and objectives of the agri-environment scheme being implemented.<br>• Operational frameworks for monitoring and evaluation, including selection of suitable indicators and reporting procedures.<br>• Detailed development of indicators according to EU guidelines and associated data collection systems. | • Seminars and workshops with national and international experts.<br>• Study tours to EU Member States and Candidate Countries.<br>• Regular 'in-house' workshops for exchanging experience and evaluating procedures. |

## 9.6 Training for other support staff

Two other important target groups for agri-environment training are:

a) **Farm advisers** – experience suggests that some of the best advisers for supporting the implementation of agri-environment schemes are agricultural advisers or specialists who are 're-trained' in agri-environmental issues, including specialist subjects such as organic farming. The simple fact is that farmers often assess the credibility of an adviser first and foremost upon his/her agricultural knowledge and then upon their ability to present a viable solution to the day-to-day problems faced by the farmer. Sympathetic and well-respected agricultural advisers can therefore be excellent for encouraging and reinforcing the adoption of agri-environment measures.

b) **Trainers** – adequate attention should be given during the design of the agri-environment scheme and its associated training programme to the 'training of trainers'. Although many of the trainers engaged for delivery of the programme are likely to be qualified and accredited, all of the trainers should be able to demonstrate:

- good basic knowledge of the background principles and practice of agri-environment schemes in addition to their own specialist areas of knowledge;
- competence in presentation skills, preparation of training materials, facilitation of farm visits etc.

Indicative topics and training activities for the advisers and trainers implementation of agri-environment schemes are identified in Table 9.

**Table 9 Indicative topics and training activities for agri-environment advisers and trainers**

| | Indicative Topics | Indicative Training Activities |
|---|---|---|
| **Farm Advisers** | • General introduction to agri-environment schemes and EU policy objectives regarding agriculture, environment and rural development.<br>• Experiences with agri-environment schemes in the EU Member States and with similar programmes in Candidate Countries.<br>• Relevant EU legislation and regulations, necessary budgetary and administrative procedures.<br>• Identification and comprehension of key national agri-environmental issues and their driving forces.<br>• Overall concept and objectives of the agri-environment scheme being implemented.<br>• Overall concept of the agri-environment management agreement.<br>• Assessment of agri-environment measures in appropriate agronomic and economic terms.<br>• Practical application of whole farm planning approaches/software packages (if available).<br>• Assessment of the impact of individual measures upon farm business performance.<br>• Contemporary advisory methods. | • Specialist training courses<br>• 'On-the-job' training.<br>• Seminars and workshops with national and international experts.<br>• Study tours to EU Member States and other Candidate Countries.<br>• Regular workshops for exchanging experience with other advisers.<br>• Farm visits and discussions with farmers to keep in touch with contemporary developments. |
| **Trainers** | • General introduction to agri-environment schemes and EU policy objectives regarding agriculture, environment and rural development.<br>• Overall concept and objectives of the agri-environment scheme being implemented.<br>• Selection of appropriate training techniques and the planning of training activities.<br>• Basic (and more contemporary) presentation and facilitation techniques. | • Specialist training courses.<br>• Seminars and workshops with national and international experts.<br>• Study tours to EU Member States and other Candidate Countries. |

## 9.7 Training for farmers

The provision of good training support for farmers participating in agri-environment schemes is increasingly viewed as crucial to enable them to confidently undertake the measures they have selected. In particular, it is obvious that farmers need to be convinced of a number of things:

a) the financial viability *and* agronomic practicality of participation in the scheme;

b) that they have the necessary know-how to meet the requirements of the management prescriptions without the possibility of non-compliance and the risk of incurring penalties;

c) that participation in the scheme offers additional benefits for their farm, such as the opportunity for marketing quality products from an environmentally-friendly farming system;

d) that agri-environment schemes provide an opportunity for long-term opportunities and financial security.

At the same time, it is important that farmers comply with the requirements of the management prescriptions in order to produce the desired environmental benefits.

The training programmes selected for farmers will vary considerably depending upon the design and content of the agri-environment scheme. For example, a compulsory basic training package for all farmers participating in a scheme might involve the following main elements.

1. 16 hours (2 days) of training at a local/regional venue on the overall concept and practical implementation of agri-environmental measures, including:
   - an introduction to the main agri-environmental problems in the country concerned (1 hour);
   - an introduction to the basic concepts of an agri-environmental action (ie the integration of agricultural production with environmental protection conservation) and the idea that farmers can be paid to manage the environment (1 hour);
   - an exploration of the advantages and disadvantages of different farming systems and methods for minimising their environmental impact (1 hour);
   - a discussion of the proposed agri-environment programme and its potential benefits for the environment (1 hour);
   - development of understanding of the range of agri-environmental measures included in the scheme (6 hours);
   - a discussion of the obligations of participation in the pilot project, including the concept of a whole farm management agreement/contract (1 hour);
   - an introduction to the concepts of Good Farming Practice and Whole Farm Agri-environment Plans (2 hours);
   - an introduction to the farm records necessary for the agri-environment measures included in the scheme and discussion of appropriate systems for keeping the records (2 hours);
   - a discussion of the opportunities for linking participation in the agri-environment pilot project with other rural development activities eg rural tourism, processing and marketing high quality food products etc (1 hour).

2. 8 hours (1 day) of additional training at a local/regional venue on the preparation of a Whole Farm Agri-environment Plan involving:
   - theoretical training on the preparation of plans (2 hours);
   - practical training eg how to identify environmentally-sensitive areas on the farm (6 hours).

3. 8 hours (1 day) of training at regional/local level every year during years 2, 3, 4 and 5 of the pilot project to:
   - update all farmers with developments and progress with the agri-environment scheme;
   - encourage them to 'learn from each other' by sharing experiences and problems;
   - introduce new ideas etc.

# 10 Monitoring and evaluation

## 10.1 Introduction

Monitoring and evaluation have been touched upon several times in previous chapters. They are important aspects of scheme design. This chapter aims to provide a good understanding of the role and functioning of these two processes. It covers legislative background and definitions, provides guidelines for the design of monitoring and evaluation programmes, and gives advice on practical monitoring aspects.

The primary aim of monitoring and evaluation is to gather information on scheme functioning that can be used for future improvements in design. The presentation of such information is discussed in a short final section, including an annex of relevant monitoring parameters. This section also analyses the use of monitoring and evaluation data for scheme improvement. Finally, a practical example is used to summarise the information contained in this chapter, and to make links with other preceding chapters. This aims to give further insight into the overall functioning of agri-environment schemes, and shows the gradual evolution they are undergoing in all countries.

## 10.2 Operational objectives

**Chapter 10 provides guidance on:**

a. understanding monitoring and evaluation procedures;
b. developing a proposal for a monitoring programme;
c. developing a procedure for monitoring the results of management packages;
d. developing a proposal to evaluate the success of scheme objectives in pilot areas;
e. listing the financial resources required to implement a monitoring and evaluation programme linked to the pilot agri-environment schemes.

## 10.3 Legislative background and definitions

Art. 53 of Regulation 445/2002 outlines the commitments of Member States for the monitoring and evaluation of schemes.

***Monitoring*** is the process by which data on the activities, outputs, and results, of individual measures are gathered during the implementation of an agri-environment programme. Monitoring data have to be collected in a way that facilitates the adjustment of agri-environment schemes on the basis of the needs that become apparent during implementation. Monitoring must be an objective, systematic and regular activity that lays the basis for the evaluation of a programme.

***Evaluation*** is the in-depth analysis of the impact of measures with regard to pre-determined objectives, based on the data resulting from the monitoring and from other relevant sources of information. Evaluation should go beyond the mere reporting of data collected during monitoring. Instead, it should provide a proper analysis and interpretation of the impacts of the scheme in question, including links with other policies and programmes. Art. 49 of Regulation 1257/1999 stipulates that the evaluation of agri-environment schemes should be carried out on the basis of the principles laid down in Arts. 40-43 of Reg. 1260/1999. It has to cover socio-economic, agricultural and environmental aspects, and should be devised on the basis of trends in and the characteristics of the area of application.

## 10.4 Basic considerations for monitoring and evaluation

The design of monitoring and evaluation procedures can be quite complex, and should take into account the following basic considerations.

a. ***Planning:*** Monitoring and evaluation require early and careful planning, irrespective of the state of implementation of the scheme. As soon as, or even before, an agri-environment programme exists on paper, some basic decisions about evaluation and monitoring must be taken. It is thus essential to include these aspects in the earliest drafts.

b. ***Objectives:*** The main purpose of monitoring programmes is to obtain information on the success or failure of a given policy in achieving its principal objectives. Indicators are often a useful tool for this purpose. However, indicators must directly relate to the objectives of the programme in question. This is only possible if the programme objectives are clearly defined, at various levels of detail. Different kinds of objectives can be distinguished:

   - operational objectives (expressed through targets for the output of the measure, eg number of applications, or, more detailed, the number of old/young, big/small farmers applying);
   - specific objectives (linked to targets for quantitative results or immediate impact of the measure, eg number of plant species per hectare or concentration of nitrates in run-off water);
   - general objectives (expressed in terms of broader outcomes or longer term impact of the measure, eg achievement of broader programme objectives such as the financial viability of extensive farming systems, or the protection and enhancement of biodiversity).

c. ***Scheme evaluators:*** While it is advisable to include the officials responsible for agri-environment schemes in monitoring and evaluation processes, independent experts can also contribute substantially to these tasks. They bring with them the required specialised knowledge and a more detached point of view, therefore facilitating scheme evaluation procedures that are as objective and comprehensive as possible. Independence and expertise are thus very important factors in the choice of evaluators.

d. ***Links with other policies:*** Monitoring and evaluation procedures for agri-environment schemes may be usefully complemented by an examination of links to other policies, especially agricultural measures, in order to assess complementarity and competition between them. For example, competing subsidies, local taxes or land ownership legislation may make participation in an agri-environment scheme financially unattractive.

## 10.5 Practical guidelines for the design of a monitoring programme

Monitoring procedures should be cost-effective and provide clear and useful results. Monitoring data which serve no real purpose, or which are not sufficiently reliable, are not worth collecting as they are of no use in the evaluation phase. Therefore, quality has to be given preference over quantity. This principle also applies to the selection of personnel and monitoring methodology. At the same time efforts should be made to cover all the important objectives of a given scheme. The following guidelines aim to provide a comprehensive framework for achieving both these objectives. Where the resources are not available for applying all the recommended methods, a selection of the most appropriate procedures has to be made.

a. ***The use of indicators:*** As it is not practical, nor even physically possible, to measure all the parameters affected by agri-environment schemes in the field, a system of indicators should be developed. Ideally, such indicators should be simple and clear as well as operational and meaningful. They need to be based on available and reliable data, and facilitate practical and cost-efficient evaluation at regular intervals. In some cases, especially for schemes targeted at biodiversity conservation, they will need to be complemented by detailed biological and/or environmental surveys and evaluation procedures. The following examples provide an illustration of different types of indicators that could be usefully applied in the evaluation of different elements of an agri-environment scheme (a non-exhaustive list of biodiversity indicators can be found in Annex 2):

   - number of hectares of arable land converted into pasture (land use);
   - concentration of nitrates (N ppm) in run-off water (water quality);
   - number of breeding pairs per hectare of targeted bird species (habitat quality);
   - percentage of income due to the agri-environment scheme (farm income).



Breeding hoopoes (*Upupa epops*) in Hungary

b. ***Indicator selection:*** The selection of the most appropriate elements and indicators should be made systematically. Indicators should fulfil three basic functions: simplification; quantification; and communication. Furthermore, the data sources on which monitoring and evaluation are based must be made explicit. Finally, if monitoring systems for other policies or programmes could provide important information for the evaluation of an agri-environment scheme such data should also be used.

c. ***Standards:*** The results of indicators and monitoring are only meaningful if they can be compared with certain standards. Such standards have to be selected and defined before monitoring begins. Three different types of standards are most commonly used:

   - ***baselines:*** the environmental/ socio-economic/ agricultural situation before the start of a programme, with which changes can be compared. Where no baseline data are available the monitoring should establish

them as quickly as possible (eg during the first year of operation). For a proper operation, however, it is essential to establish baselines before the launch of a new scheme.

- ***benchmarks:*** standards by which the performance of a measure can be assessed in terms of expected outputs, results and outcomes. Some standards will be defined by national or European regulations, others by the competent authorities: good farming practice is an example of this kind of standard. Most relevant standards, however, will be the result of an interpretation of the programme objectives regarding agricultural practices or environmental protection.
- ***control farms:*** comparisons with control farms can be crucial for the success of scheme evaluation (although few EU countries have followed this procedure). Ideally, monitoring should cover both participating and non-participating farms in the area of the scheme in question. The selection of farms for both samples should be as representative and reliable as possible. Both samples should have similar socio-economic, agricultural and environmental characteristics, so that comparative data are made available for the evaluation of scheme impact. The effectiveness and efficiency of agri-environment programmes cannot be properly assessed without such a comparison. Where no such control sample is available, general trends in farm management cannot be detected early, and changes due to scheme effectiveness are difficult to identify.

## 10.6 Monitoring costs and further research

As indicated in chapter 8, the monitoring costs for the British agri-environment programme are estimated to be five per cent of overall scheme expenditure. This percentage is likely to be close to the upper limit for monitoring costs, as the UK has a very elaborate monitoring programme. In other countries monitoring costs may be considerably lower. As a general rule, the greater the scheme complexity and the more ambitious the scheme objectives, the higher the monitoring expenses are likely to be. For this reason most horizontal schemes will require less resources for monitoring than very targeted zonal programmes.

The precise costs of adequate monitoring systems for individual agri-environment schemes will depend on the level of national wages for monitoring personnel, the target habitat or species group of the scheme in question, the availability of baseline data from already established data sources etc. When selecting the pilot agri-environment scheme these factors should be taken into account (see chapter 6). Annex 2 provides some initial information on the suitability of different species groups to serve as indicators for the success of agri-environment schemes.

When the objectives and most likely indicator species of the pilot agri-environment scheme have been defined, and the appropriate monitoring methods have been decided upon, it is useful for a group of biologists or other relevant experts to prepare an estimate of the probable monitoring costs for a representative sample of sites/fields in the pilot area. This estimate of funds and time required needs to include data collection, data input into a computer with subsequent statistical analysis and scientific interpretation of the results, and preparation of monitoring reports as well as a final evaluation report for the whole scheme. The frequency of data collection needs to be adapted to the biological characteristics of the main indicator species. In the case of slowly responding indicators, such as plant communities, data may only need to be collected at the beginning and at, or close to, the end of a scheme. On the other hand, if the breeding success of birds has been chosen as a main indicator of scheme impact, the breeding success of the relevant species should be monitored every year to obtain a reliable number of observations in different meteorological situations. In such a case data input, statistical analysis and reporting should also be carried out on a yearly basis. Where appropriate, the

team of experts may only determine the minimum monitoring requirements for the scheme and the defined monitoring programme be put out for tender by private organisations.

The considerable costs of proper monitoring and evaluation procedures provide another argument for giving them a great deal of attention during the preparation phase. Only if the expenditure for monitoring and evaluation systems is well calculated and justified will any applications to EU institutions for funding of such programmes be successful. In this context it should be stressed that up to now the European Commission has refused to finance any part of the administrative costs of agri-environment schemes through SAPARD or the Rural Development Regulation. The current EU funds for assistance to CEE (such as PHARE) do, however, offer the possibility to include certain administrative and capacity-building costs in re-fundable project expenditure.

## 10.7 The results of monitoring and scheme evaluation

As pointed out before, the collection of monitoring data serves both as scheme control and improvement. Scheme control operates at an internal and external level. The most important external control obligations are the reporting procedures stipulated in Art. 53 of Regulation 445/2002. The following paragraphs provide information about the format and content of an evaluation report to the European Commission.

a. ***Presentation of scheme evaluation.*** An evaluation report should contain at least three different sections: a) a description of scheme characteristics, objectives and uptake; b) the results of the monitoring programme for the individual parameters analysed; and c) an evaluation of results with regard to the scheme objectives, building on the monitoring programme and other material. In addition, the Commission requires an executive summary of each report for greater accessibility of overall results, and the results of evaluations should be made available to the public. See Annex 1 for a detailed list of parameters that could be relevant for such a report.

b. ***Programme improvements.*** Monitoring and evaluation should have a practical orientation, and lead to suggestions for improving the scheme in future. This is particularly relevant for schemes that come to the end of their first five-year period. The following basic standards of success should be analysed in this respect.

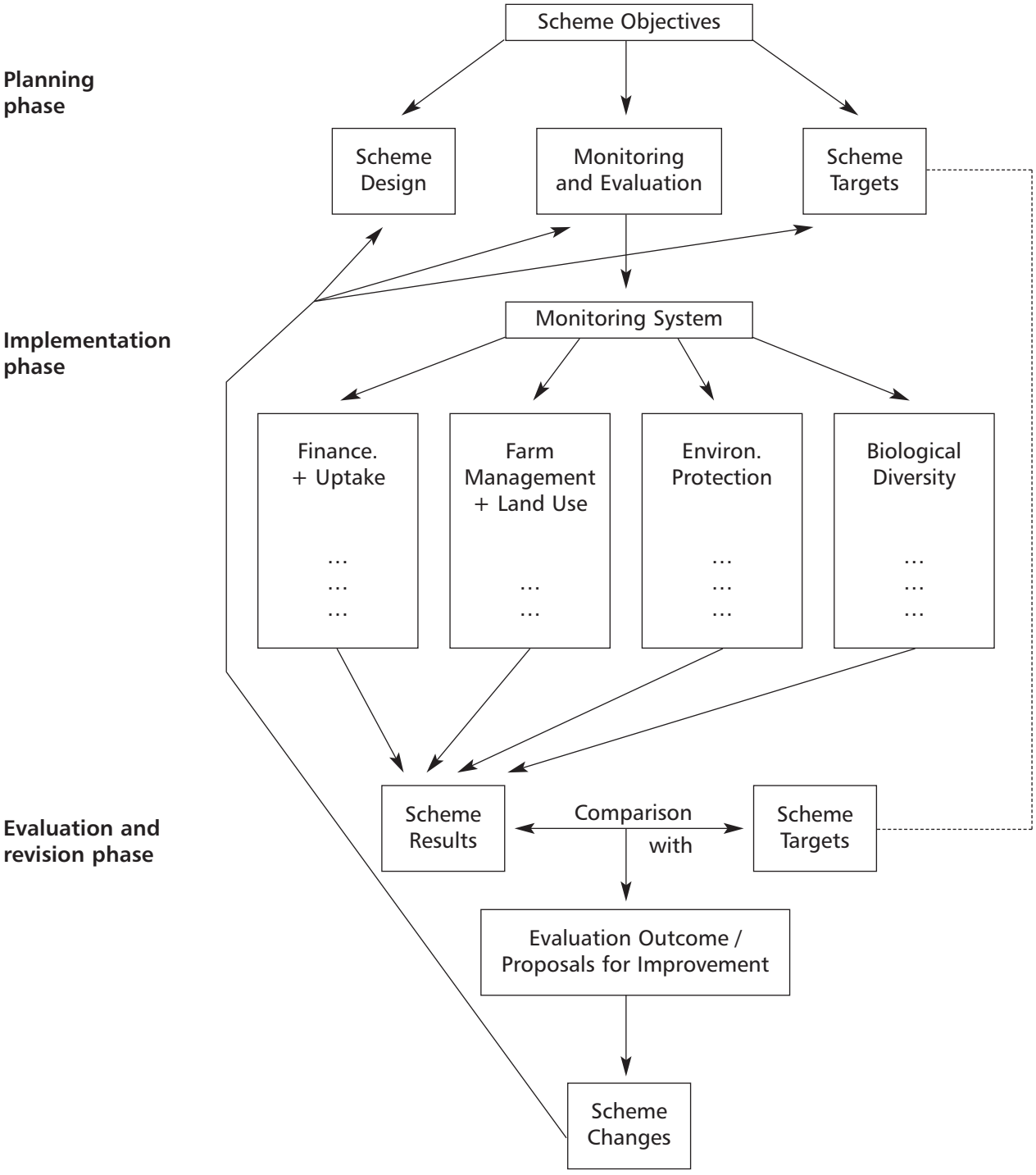
   - ***Relevance:*** To what extent are the scheme's objectives still important? Do the farmers obligations still meet the requirements of Regulations 1257/1999 and 445/2002, or of national biodiversity strategies?
   - ***Effectiveness:*** How far have the scheme's impacts contributed to achieving its specific and general objectives?
   - ***Efficiency:*** How economically have the scheme incentives and administrative resources been converted into outputs and results? Are the payment levels still appropriate?

It is important to be able to answer these questions for the successful development and justification of agri-environment measures. Answers can, in turn, only be provided through adequate monitoring and evaluation systems, which underlines the importance of these procedures in overall scheme design. As well as providing important feedback for European agricultural policy making, scheme monitoring and evaluation are also very useful for internal scheme revision.

A well-designed monitoring and evaluation programme is especially important for a pilot agri-environment scheme. It serves not only to introduce this aspect of the new agricultural policy instrument, but can also help to collect data for the design and implementation of a national agri-environment programme. An illustration of how such procedures can work is given in the example in

Annex 5. Although fictional, it is close to reality, and has been written in such a way to show the linkages between monitoring and evaluation and other elements of scheme design. The same perspective is also taken in the following figure that summarises the most important elements, and the links of the monitoring and evaluation system in an agri-environment scheme.

**Figure 15 The position of monitoring and evaluation in agri-environment schemes**



Annex 1

# Elements for monitoring and evaluating the impact of agri-environment schemes

## A. General questions

### 1. *Uptake*

- percentage of uptake in relation to total potential uptake: number of hectares, livestock units and beneficiaries involved, as compared to initial estimates and target levels;
- geographic distribution or pattern of uptake.

### 2. *Areas of application*

- intensive or extensive agriculture;
- protected areas (wildlife/habitat directive, where applicable)
- less favoured areas, Objective 1 Regions, 5b Areas (where applicable).

## B. Socio-economic impacts

### 1. *Farm income*

- part of farm revenues provided by payments under Reg. 1257/1999;
- gross revenue/ha compared with aid level, or rate of investment.

### 2. *Farm size*

- relation between farm size and uptake/participation;
- changes in farm size (eg as a result of extensification or animal production);
- changes in farm business structure.

### 3. *Training and demonstration*

- subjects of course or training;
- number of applicants (training), number of visits by other farmers (demonstration);
- practical uptake in farming practices;
- geographical distribution.

### 4. *Public Access*

- extent of public use;
- pattern of public use of pathways, seasonal fluctuations.

## C. Agricultural impacts

### 1. *Markets*

- percentage of production sold to intervention;
- link to CAP direct payments in market sectors.

### 2. *Product quantities*

- yield/ha per crop.

### 3. *Production type*

- type of crop involved;
- diversification of production.

### 4. *Livestock density*

- number of Livestock Units (LU) per forage hectare.

### 5. *Inputs*

- expenditure/ha on fertiliser and pesticides;
- quantities/ha of fertiliser and pesticides used;
- percentage of farm land with integrated farming practices;
- percentage of land not affected by pesticides.

### 6. *Organic-farming factors*

- addition to, or substitution of, non-organic production;
- modification in supply, demand, market distribution, and prices of products.

### 7. *Land use*

- trends of land abandonment, or towards land use exclusively for environmental purposes;
- trends towards intensification elsewhere, as a consequence of extensification measures;
- trends in land coverage by forest.

## D. Environmental impacts

### 1. *Water quality*

- concentration of nitrates;
- concentration of pesticides.

### 2. *Soil quality*

- erosion;
- chemical and physical soil characteristics;
- drainage patterns;
- land under irrigation.

### 3. *Biodiversity*

- vegetation: presence of certain types of vegetation, presence and densities of different species of botanic interest, changes in species composition and sward structure;

- targeted habitats: extent and quality, ecological links between sites;
- birds: presence and densities, diversity, breeding success, changes in population densities and species composition;
- other animal groups: presence and densities, diversity, breeding success, changes in population densities and species composition.

### *4. Local breeds*

- number of animals per breed;
- presence of different breeds (local breed register).

### *5. Landscape*

- percentage of land or contracts with provision on the maintenance of countryside and landscape;
- areas of specific nature and landscape values;
- density of elements like stone-walls and terraces, quality of preservation;
- recent changes to landscape elements ;
- involvement of contiguous farms.

### *6. Preventing fires*

- reduction in number and severity of fires.

# Annex 2

# Comparison of the potential for species of different taxa groups to act as indicators of impacts of agriculture on biodiversity

Key. Suitability of the taxa with respect to the attribute: * = Poor; ** = Moderate; *** = Good; ? = Uncertain.

| Attribute | Mammals | Birds | Reptiles | Amphibia | Insects & Spiders | Other invertebrates | Higher plants | Lower plants |
|---|---|---|---|---|---|---|---|---|
| A number of species are concentrated in agricultural habitats | * | ** | * | * | *** | ** | *** | * |
| Widespread and common in agricultural habitats | ** | *** | * | ** | *** | *** | **[1] | * |
| Easy to identify | *** | *** | ** | ** | * | * | ** | * |
| Easy to observe and census | * | *** | * | ** | ** | * | *** | * |
| Well understood ecology and interactions with agriculture | ** | ** | * | * | ** | * | *** | ** |
| Sensitive to agricultural practices | ** | ** | * | * | *** | ** | *** | ** |
| Representative of a large number of other taxa | ** | ** | * | * | ? | ? | *** | * |
| Well monitored at local, national & international scale | ** | *** | * | * | ** | * | ** | * |
| Potential flagship species | *** | *** | ** | * | * | * | ** | * |

Notes: [1] Originally much more common, but now scarce in many intensive agricultural habitats.

Source: Ecoscope Applied Ecologists (Rebane and Tucker) (1997) *Countryside Stewardship: Monitoring and Evaluation of the Pilot Scheme 1991-96*. EAE: Cambridge.

# Annex 3
# The Habitats Directive
## (Directive 92/43)

Criteria for selection of areas (related to habitat types listed in annex 1 and species types listed in annex 2 of the Directive)

Habitat criteria:

- representativeness of the type of natural habitat in the specific area;
- extensiveness of the specific habitat type regarding the total area of habitat type in the country involved;
- continuity potential of structure and functions of the identified habitat type and restoration potential;
- common evaluation of significance of the identified area for the type of habitat under consideration.

Species criteria:

- extension and completeness of populations of species under consideration in relation with populations in the country itself;
- continuity of elements of the relevant habitat which are of importance for the species under consideration and restoration potential;
- aspect of isolation of the population in the area under consideration regarding the natural distribution area of the species;
- common evaluation of the significance of the area under consideration for the species involved.

# Annex 4
# The scorepoint system according to the Austrian Öpul scheme

The Austrian Öpul scheme (Österreichische Programm zur Förderung einer umweltgerechten, extensieven und den natürlichen Lebensraum schützenden Landwirtschaft) is a comprehensive agri-environmental scoring system under the Austrian Rural Development Plan. The two main elements of the 'Ecopoint' system are as follows.

- Points are awarded for all land use activities: fertilising, herbicide use, crop rotation, ground cover, mowing and grazing regimes and conservation measures.
- Minus points are deducted for less environmentally sound measures, especially in the field of herbicide use. Pronounced non-sustainable practices are, of course, restricted by legal baselines and codes of good farming practice.

The scheme includes an extensive table with measures and points, which is shown below. The system is operated as follows:

- each point equals a payment of €13 for grassland and arable land and €26 for other types of land use;
- there is a payment ceiling of €690 per ha for grassland and arable land and €1,017 for other land uses;
- the ceiling is lower for larger farms (ie the scheme operates 'modulation');
- there are bonus points for organic farms: 3 per ha for grassland and arable farms, 6 per ha for horticulture.

| MEASURE | NUMBER OF POINTS |
|---|---|
| **Crop rotation** | |
| a. number of crops in a 5-year rotation | 0 - 3 per ha |
| b. crop type and sequence | 0 - 4 per ha |
| **Ground cover** | |
| Growth of intermediary crops, under-sowing, green manure crops, mulch crops etc: | |
| – on arable land | 0 - 7 per ha |
| – on horticultural land | 0 - 9 per ha |
| **Cropping pattern** | |
| Points for small-scale cropping (< 2,5 ha) | 0 - 5 per ha |
| **Fertiliser use (organic and artificial fertiliser)** | |
| – arable and horticultural land | –9 to +6 per ha |
| – grassland | –6 to +8 per ha |
| **Fertiliser type and spreading** | |
| – use of (stable) manure and compost | 2 per ha |
| – application of fertiliser in small doses | –3 to +3 per ha |
| – application of organic manure by grazing cattle (in terms of livestock units per ha) | 0 - 5 per ha |
| – use of straw-manure on arable land | 2 per ha |
| **Grassland use** | |
| – number of grass cuts | 0 - 6 per ha |
| – livestock density | 0 - 6 per ha |
| **Grassland age** | |
| 'Natural' grassland, more than 5 years old | 3,5 per ha |
| **Herbicide use** | |
| – all types of land | –7 to 0 per ha |
| **Landscape features*** | |
| Percentage of surface area covered by landscape features (range from 0 to over 30%): | 0 - 25 per ha |
| a. area-based elements: timber lots, fallow land, low-productive grasslands (very dry or wet ones, or with trees, orchards etc.) or non-productive land (with quarries etc.) | |
| b. linear elements: hedges, hollow roads, banks, shelterbelts, field margins etc. | |
| c. other elements: sole trees and bushes, stone features, ponds etc. | |

*Points for landscape features require a minimum number of points from the categories mentioned above. If the score on other topics is below 13, 17% of the landscape points are deducted. If the score is below 6, 33% of the landscape points is deducted.

# Annex 5
# Scheme evaluation in northern Germany – a fictional example

The following example shows how useful adequate monitoring and evaluation procedures can be for assessing and improving agri-environment schemes. Although not all the monitoring methods outlined in chapter 10 were used for each scheme, the procedures that were applied contribute significantly to improving the individual schemes. Both administrators are fictional characters, and the schemes presented below are only distantly related to the actual schemes in Schleswig-Holstein. The example has been designed not only to illustrate a good use of monitoring and evaluation procedures, but also to give further insight into other aspects of agri-environment scheme administration and implementation:

Diplom Agraringenieur Hans Andresen and Dr. Nils Hansen are the main administrators for the regional agri-environment programme of Schleswig-Holstein, and work in the agriculture and environment ministry, respectively. Today they have the task of finalising an evaluation report for the European Commission on three of the regional schemes:

a) the horizontal ***Arable Wildlife Strip Scheme*** which is applicable in the whole region; its aim is to favour arable weed associations and the insect and bird communities which depend on them, by reducing fertiliser applications and banning pesticide use on field margins;

b) the horizontal ***Amphibian Programme***, which is administered by the environment ministry, who select the most suitable applications from all over the region; its objective is to support threatened amphibian species by delaying mowing dates on grasslands, by the establishment of buffer zones around aquatic habitats and the creation of suitable migration routes;

c) the zonal ***Meadow Bird Programme***, which is applied only in specifically selected ESAs; its aim is to enhance bird communities of wet grasslands by delaying mowing dates and/or raising water tables, as well as reducing fertiliser use.

There are three different types of information available to them for writing the report:

i) the original scheme designs presented to the European Commission for approval, which outline the main objectives of the individual programmes and set indicative targets;

ii) monitoring data in the form of

- statistical data from the agricultural ministry which show the uptake of the different schemes and its geographical distribution,
- an in-house monitoring report from the environment ministry on the Amphibian Programme,

- monitoring reports on the Arable Wildlife Strip Scheme and the Meadow Bird Programme, commissioned to a wildlife consultancy formed by members of the regional university, and
- yearly reports written by the two regional ESA administrators; as well as

iii) reports from third parties, such as:

- an agro-economic study by a team of researchers on the reasons among the local farmers for not participating in the scheme; and
- comments on the various regional agri-environment programmes by the two main conservation bodies, the regional farmers union and the hunters association.

Building on this material, which they have studied for some weeks now, they discuss each programme individually and come to the following conclusions.

***Arable Wildlife Strip Scheme:*** The statistical data show that the distribution of scheme uptake is skewed towards the medium and light soils, whereas there is hardly any scheme uptake on the most fertile soils in the south-east of the region. According to the agro-economic study (and the submission of the farmers union) this is due to insufficient financial compensation on the more productive soils.

The monitoring report by the wildlife consultancy analyses two main indicators for scheme success, average number of arable weed species per square metre, and insect biomass and species number per 30 sweeps with a standardised sampling method. The latter is also taken as a good indicator of food availability for bird species. Plant diversity and insect counts increase considerably on field margins enrolled in the scheme. However, the report points out that the very low uptake on the fertile soils leads to a lack of protection for the rare, more continentally influenced weed communities in the south-east of the region. Furthermore, cross-farm comparisons have shown that a reduced cereal sowing density on field margins has no influence on botanic diversity, but significantly increases insect diversity and biomass. This is considered to be due to greater patches of bare soil and a higher sunlight penetration to the ground which favours the development particularly of thermophilic insect species.

Finally, the hunting association laments the lack of scheme uptake on the fertile land in the south-east which used to be renowned for its abundance of small game. It points out that many of its local members have very good contact with farmers, and that they would be very happy to promote the Arable Wildlife Strip Scheme if they had more knowledge about it.

Herr Andresen and Dr. Hansen come to the conclusion that the following three changes should be made to scheme design and administration:

a. The payment on the more fertile land has to be increased to induce more farmers in the botanically important south-east to enrol in the scheme.
b. A maximum sowing density should be added to the contract conditions to ensure greater scheme effectiveness. This may require a small increase in the average premium. Herr Hansen is to consult his colleagues in the ministry about this, possibly also experts from the regional agricultural research institute.
c. The hunting association and/or its local groups should be included in the mailing list for information about the Arable Wildlife Strip Scheme.

***Meadow Bird Programme:*** The statistical data show that there is a good and widespread uptake of Tier 1 of the scheme, which does not impose very strict conditions. Tier 2, which requires very traditional management, is only accepted in a few locations on very wet ground. Both the reports from the ESA project managers and the comments by the farmers union, point towards the farmers' fear of a loss of productivity and of fodder quality as well as greater harvest insecurity as the main reasons for the lack

of uptake of Tier 2. The farmers union report recommends an increase in payment levels for this tier as the solution.

The monitoring report of the wildlife consultancy uses wading bird species diversity, breeding density and fledging rate as indicators for scheme success. They show that chick mortality rates due to early mowing have decreased markedly because of scheme impact. Moreover, the breeding density of the more common species has increased. However, the decline of the more demanding wading birds, such as snipe Lymnocryptes minimus or ruff Philomachus pugnax, has not been stopped by the scheme, except very locally where Tier 2 is accepted by the farmers. Cross-farm comparisons, between and within samples of participating and non-participating holdings, have shown that vegetation density is a very important parameter for chick survival. Dense vegetation is suspected to hinder chick mobility when searching for diverse food sources, and to increase the negative effect of wet conditions on survival rates due to hypothermia. Under normal conditions farmers encourage vegetation density on grassland through fertiliser applications to increase productivity. The few management conditions in Tier 1 reduce fertiliser use only to a very limited extent. Thus, the monitoring report argues that Tier 1 does not fulfil the objectives of the Meadow Bird Programme, and that the severity of its conditions, especially regarding fertiliser restrictions and minimum water table levels, has to be increased. The Meadow Bird Programme is severely criticised for the same reasons in the submissions of the conservation bodies who classify Tier 1 as a waste of money and demand it to be scrapped.

The two scheme administrators discuss this problem long and hard. The environment ministry is disappointed about the lack of impact of the scheme on the most threatened wading bird species, whereas the agricultural representative stresses the fact that nevertheless many bird chicks profit from the delayed mowing date in Tier 1. Dr. Hansen suggests that either the conditions of Tier 1 should be tightened, especially regarding fertiliser use, or that the approval of applications for Tier 1 should be made conditional on a certain percentage of the land under ESA contract on each holding being put into Tier 2. Herr Andresen rejects these proposals by arguing that they would either be too costly or too complex to administer. He finally wins the argument by pointing out that Tier 1 is very popular with the farmers, that it is the agricultural ministry which runs this scheme, and that 99% of all farmers would simply not accept any new conditions which required them to make big management changes. Both representatives agree, however, that the payment for Tier 2 should be increased to attract a higher uptake, and that the agriculture ministry should give clearer guidance on fertiliser use to the farmers in the information provided about the ESA scheme.

***Amphibian Programme:*** The in-house report from the environment ministry comes to the conclusion that the programme has been a success where all its measures have been applied together. In these places amphibian numbers have increased considerably, and other aquatic wildlife has also benefited. However, scheme uptake has been quite low in most parts of the region, and there have been considerable difficulties in creating the envisaged migration routes. These problems are mainly due to a lack of interest in these measures on the part of the Land Consolidation and Water Authorities, part of the agricultural administration, which should carry them out. The environment ministry report points out that without a proper collaboration of these authorities in the programme, many of its objectives cannot be achieved. Both conservation organisations applaud in their reports the 'innovative nature' of the Amphibian Programme, but also strongly criticise the 'lack of co-ordination' between the two ministries. The regional farmers union states in its submission that its members are not very comfortable in dealing with representatives of the environmental administration, as the latter do not properly understand the 'pressures and constraints imposed on farming by modern agricultural technology and an increasingly free-market agricultural policy'.

After the dispute regarding the Meadow Bird Programme the two scheme administrators find it easier to reach common suggestions for improving the success of the Amphibian Programme. Herr Andresen agrees that the Land Consolidation and Water Authorities have to show more interest in the programme. He promises that the agriculture ministry will appoint one specific official per authority as a liaison person for the Amphibian Programme, and that a part of each authority's budget will be

earmarked for the measures under this programme. Both representatives should also agree to organise mutual training days for the staff involved in the programme. The environment ministry will host a training session for the liaison persons from all Land Consolidation and Water Authorities to explain the objectives and functioning of the Amphibian Programme. Equally, the agriculture ministry will provide training about agricultural issues and farmer expectations for the wildlife officers involved in the programme.

After their long working day the two officials go to the next pub to have a drink of pure German beer. In spite of the arguments, they are quite pleased about the overall outcome of the day and the progress they have made in co-ordinating and developing their respective schemes. They both agree that the detailed regional monitoring schemes have been very worthwhile. Both think that in pooling their knowledge and experience they have made better progress than would otherwise have been possible, although some political constraints remain. Dr. Hansen remarks that he hopes that the planned increases in scheme funding will be sanctioned by the finance ministry. Herr Andresen agrees with this, and wonders whether such a good scientific basis and overall good co-ordination are replicated in other regions of the European Union. Both take another long sip from their glass . . .

# Annex 6
# Glossary of agri-environment terms

*Biodiversity* Defined in Article 2 of the Convention on Biological Diversity as 'the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems'.

*Buffer strip* An area of land at least 1 metre wide, usually uncultivated, between the edge of the crop and boundary features. May also be situated alongside sensitive habitats such as water bodies. No fertilisers or pesticides are applied to such strips. Also known as boundary or sterile strip. May be used to protect features from agricultural inputs or as a weed management measure. Strips of cultivated land where no pesticides are applied are used in some conditions. Alongside areas where certain pesticides are in use, there is a statutory requirement for the establishment of buffer strips of six metres, usually adjacent to water bodies.

*Buffer zone* Areas of grass or scrub established around sensitive habitats such as water bodies and protected areas. Usually 6-20 metres wide and not treated with any fertilisers or pesticides except herbicides to control docks, thistles and ragwort.

*Conditionality* A term often used to refer to the attachment of conditions (usually environmental) to agricultural support payments.

*Directive* Most commonly used EU legislative instrument and binding in terms of its objectives, for example that certain standards are to be met by certain dates, but Member States are free to choose the methods for doing so. More flexible than a Regulation as a degree of interpretation by national governments is allowed. However, in cases where the provisions of the Directive are unconditional and precise and leave no national discretion in their application, the Directive is considered to have a direct effect.

*EAGGF* The acronym for the European Agricultural Guidance and Guarantee Fund – the CAP budget. Accounts for around 45 per cent of the Community budget and is composed of two sections. The Guarantee Section finances Community public expenditure resulting from the policy on agriculture markets and prices, including direct payments. It funds intervention designed to stabilise the markets and export refunds paid to non-member countries enabling disposal of agricultural products on world markets. The Guidance Section is concerned with improving the structure of European agriculture and a range of rural development measures, including agri-environment schemes.

| | |
|---|---|
| *Fixed costs* | Overhead expenses such as labour and machinery on a holding which do not vary in proportion to small changes in the scale of the enterprise, unlike *variable costs*. |
| *Green cover* | A crop which occupies ground which would otherwise remain fallow. Its purpose may vary. It may be created through natural regeneration, sowing grass, sowing a wild bird cover, sowing another acceptable cover or by leaving the existing cover. Prior to planting a commercial crop, the green cover is ploughed into the soil. |
| *Gross margin* | The output of an enterprise less its *variable costs*. Not a measure of profit as fixed costs are not taken into account. Used to compare the competitiveness of individual farming enterprises, eg different crops. |
| *Headland* | The perimeter of a field between the crop edge and the first tramline. Its width depends on the tractor boom width, which is usually six metres. |
| *Income foregone* | A concept which provides the basis for generating the rates of payment available in many schemes involving management agreements. Takes account of the estimated profits which a farmer will forgo by following prescribed management practices, making allowance for such factors as the financial security which the agreement will provide, the average size of the farm in the scheme and farm practice. |
| *Livestock unit (LU)* | A common agricultural term, also used as the basis for the payment of headage payments using the following range of EU conversion rates: bulls, cows and other cattle over two years = 1.0 LU; bulls, cows and other cattle between six months and two years = 0.6 LU; sheep and goats = 0.15 LU. In addition, it is used for indicating acceptable *stocking density* limits in management schemes. |
| *Management agreement* | A contractual term used to describe documented agreements completed between public authorities and farmers regarding their management of land, usually under an agri-environment incentive scheme. |
| *Regulation* | An EU legislative instrument which is directly applicable to citizens and governments in all Member States. Unlike a Directive, a Regulation is binding both in terms of its objectives and the means to achieve them and so is equivalent to national laws. Most agricultural policy under the Common Agricultural Policy is in the form of Regulations. |
| *Tier* | A level within a staged agri-environment scheme (ie a scheme that offers management options at increasingly demanding levels). Higher tiers are generally associated with higher payments. |
| *Under sowing* | Sowing of a grass mixture after an arable crop is established. Both develop at the same time and the under-sown grass is left as a cover after the arable crop has been harvested. |
| *Variable costs* | Expenses incurred on a holding which vary in direct proportion to small changes in the scale of the enterprise according to the crops, livestock and practices in use. Main items are fertilisers, seed, sprays, casual labour and contract work specific to a crop, concentrate feed, veterinary expenses and bought-in forage. |

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Published by:

Institute for European Environmental Policy (IEEP)
Dean Bradley House
52 Horseferry Road
London SW1P 2AG, UK
Tel: 44-(0)20-77 99 22 44
Fax: 44-(0)20-77 99 26 00
E-mail: central@ieeplondon.org.uk