A Research Paper of the Cross Compliance Network

The Relationship Between Cross Compliance and Agri-environment Schemes

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The Cross Compliance Network is co-ordinated by the Institute for European Environmental Policy (IEEP) and consists of the following partner institutions:

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Table of contents

1 Introduction

This paper looks at the relationships between environmental cross compliance and agri-environment schemes (AES).

The point of departure for the paper is the 2003 mid-term reform of the CAP, as implemented by Member States. An important part of this reform is a new cross compliance policy requiring Member States to design and implement environmental standards (as well as other standards with different purposes) in order to protect and enhance the environmental condition of the European territory. All farmers receiving single payment support must comply with the implemented standards.

Among several implications of the new cross compliance policy is the linkage – immediate as well as indirect ones - to AES. Thus it seems obvious that this new environmental cross compliance is either affecting, or directly dealing with issues which have traditionally been objectives of AES. Examples of the way environmental cross compliance affects AES are the changes to the baseline of some agri-environmental payments and changes in AES objectives and obligations. The introduction of the new cross compliance policy may also give rise to potential synergies between cross compliance and agri-environmental policy objectives.

The purpose of this paper is to clarify some of the relationships between cross compliance and agri-environmental policies. Our aims are to respond to the following questions:

- What are the policy implications of the way cross compliance is coping with the environmental costs of agricultural practices and how is this affecting the traditional AES?
- How are the current AES promoting environmental enhancements and ensuring the proper management of Natura 2000 areas and other designated nature reserves and cultural landscapes?
- What are the needs and potentials for specific cross compliance measures related to the AES?

This last question is equivocal. It partly addresses the question asking to what extent the implemented cross compliance standards cope with the relevant environmental problems. Also, it partly raises the question about the extent to which there are environmental costs related to farming in certain areas (despite cross compliance measures in operation) which require specific solutions, for example a combination of direct payments with the requirement to participate in rural development schemes.

We have tried to answer the questions through theoretical reflections on the relationship between cross compliance and AES (chapter 2) and by studying cross compliance and AES in practice (chapter 3). The study is based partly on a literature review and partly on new data gathered through the project's partners.

1.1 The mid-term reform and the new cross compliance policy

The introduction of the new cross compliance policy in the 2003 CAP reform may be seen as another phase of the ongoing 'greening' and adaptation process of the CAP in becoming a more competitive and sustainable agricultural sector policy for the European Union.

The 'greening' process, also referred to as the process of environmental integration, has its roots in the mid 1980s when AES were introduced as a voluntary policy tool for Member States to implement (and as a voluntary tool for farmers to apply). In 1992 the policy became obligatory for Member States and during the 1990s the policy was further developed (Buller et al 2000).

Cross compliance was introduced first, albeit in a limited way, by the McSharry reforms in 1992 (Spash and Falconer, 1997). In the Agenda 2000 reform from 1999 a more developed cross compliance policy was announced as an optional policy tool to promote environmental policy integration. However, relatively few countries used the option (for more details of this first cross compliance policy see the section below about cross compliance experiences) (Kristensen and Primdahl 2004, Dwyer et al. 2000).

Through the 2003 mid-term reform cross compliance became an obligatory policy of the CAP and was extended to include not only environmental issues but also public, animal and plant health and animal welfare issues. According to Regulation 1782/2003, the legal basis of cross compliance policy, environmental cross compliance was to be in operation from January 2005, with the remaining issues (animal and plant health and animal welfare) to be implemented from 2007 with some exceptions for the new Member States.

Regulation 1782/2003 (Reg. 1782 in the following) requires farmers to observe the above mentioned standards (related to environment, public, animal and plant health and animal welfare) in return for direct payments under the Single Payment Scheme (also implemented by Reg. 1782). By this definition, the EU approach to cross compliance is in line with the common definition of cross compliance: a policy tool which attaches conditions to the receipt of agricultural subsidies, where agricultural subsidies are defined broadly, for example, also to include loans etc (Christensen and Rygnestad 2000). There are some discussions about how environmental cross compliance should be understood as a policy instrument. Some prefer to classify the tool as a voluntary tool linked to subsidies (Christensen and Rygnestad 2000), and others see it more like a regulatory measure (see for example Spash and Falconer, 1997). According to Merlo and Paveri (1990) and Brouwer (2004) cross compliance should either should be seen as a persuasive instrument, suitable for reversing farming practices that are harmful to the environment, or as an instrument complementary to voluntary and regulatory instruments. In chapter 2 we give a more detailed characterisation of environmental cross compliance as a policy instrument.

The mid term cross compliance policy is divided into two parts. One mainly addresses the possible negative land use implications of decoupling the agricultural support payment through 'Minimum Requirements for Good Agricultural and Environmental Condition' (GAEC) (Article 5 and Annex IV of Regulation 1782/2003). The other deals with a set of Statutory Management Requirements (SMR) related to existing EU

Directives. The aim of this latter part of cross compliance policy may be interpreted as an attempt to enforce a more effective implementation of already existing Directives. The SMRs includes 19 directives, five of which are related to the environment: the wild Birds, the groundwater, the sewage sludge, the nitrates and the habitats Directives. We consider these five Directives in this paper and in this study.

In relation to the GAEC, Article 5 of Reg. 1782 states that *'Member States shall ensure that all agricultural land especially land which is no longer in use for production purposes is maintained in good agricultural and environmental conditions'*. The preamble of the Regulation elaborates on Article 5 by saying that standards should be established in order to avoid abandonment of agricultural land. The preamble also states that permanent grassland must receive specific attention: *'Since permanent pasture has a positive environmental effect it is appropriate to adopt measures to encourage the maintenance of existing permanent pasture to avoid a massive conversion into arable land'*. Annex IV of the Regulation specifies the issues to be addressed when implementing standards for good agricultural and environmental condition.

By stressing the need for measures to prevent abandonment and to maintain permanent pasture, both of which require active action by the farmer, the Regulation goes beyond what normally has be regulated through regulatory measures, although exceptions do occur.

1.2 Experiences with environmental cross compliance before the mid-term review

Some experience of cross compliance has been gained in the US and Switzerland and to a smaller extent in EU Member States between 2000 and 2003 as part of the first phase of Agenda 2000. In the US support schemes have been linked to erosion control since the 1930s (Tarrant 1992) and in 1985 three different cross compliance measures were introduced as part of the Food Security Act. One was the so-called 'conservation compliance' (soil erosion control), another the 'sodbuster' (conversion of arable land to grassland on erodible soils), and the third, was named the 'swampbuster' (prevention of wetland reclamation). The different measures are adapted to local conditions and, furthermore, additional programmes were offered to farmers in the most sensitive regions (Potter 2000, Dwyer et. 2000, Heimlich et al. 2000). In a French evaluation of the US cross compliance policy it was concluded that simple and clear measures were the most acceptable to farmers and that the use of locally adapted plans was considered successful despite the additional costs related to enforcement and monitoring (Dwyer 2000).

In Switzerland, a new cross compliance policy was introduced in 1999. The policy includes a package of minimum rules, the so-called 'proof of ecological performance', that farmers must comply with. The rules concerned animal welfare, fertilisation, 'ecological compensation areas', crop rotation, soil protection and the use of pesticides. The 'ecological compensations area requirement' demands a certain proportion of the farm to be laid-out as natural areas – 3.5 per cent of the special crop areas and 7 per cent of the remaining area of the farm. These requirements must be

met in order to be eligible for a direct payment and the voluntary AES directly connected to the subsidy system.

Within the EU it has been an option for Member States since 1992 to introduce certain requirements for farmers to meet in order to receive set-aside payments and headage premiums for sheep and cattle (Spash and Falconer 1997). As part of the Agenda 2000 reform two types of cross compliance were introduced in 1999. One was an optional measure linked to the direct payment. A number of Member States introduced some cross compliance standards linked to set-aside (e.g. the UK) and other agricultural practices. These requirements mainly dealt with special types of problems and did not have great effects on farming practices in general. (Berschmidt et al 2003, Kristensen and Primdahl 2004). The second type was cross compliance standards linked to AES, which were requirements for so-called 'Good Farming Practice' (GFP). These requirements must be complied with in order to receive payments and they are not compensated for in the calculation of the AES payments. Most Member States introduced GFP requirements related to the use of fertiliser and pesticides (Kristensen and Primdahl 2004).

2 Relationship between cross compliance and agri-environmental policies

Agri-environmental schemes (AES) were introduced in the 1980s as incentive measures to farmers with the purpose of protecting, enhancing or maintaining environmental assets beyond regulatory requirements, and since 1987 such schemes have been co-financed by the EU (Baldock and Lowe 2000). From 1992 it has been obligatory for the Member States to implement AES, although is remains voluntary for farmers to participate. The agricultural area under agreements gradually increased during the 1990s and by 2002 accounted for about 25 per cent of the utilised agricultural area (Buller et al. 2000, Primdahl et al. 2002, European Environment Agency, 2005). Payments are either given as income forgone compensations or as payments for costs incurred. An additional small extra 'incentive' amount is allowed. As part of the Agenda 2000 reform, AES became part of the rural development programme.

The introduction of cross compliance as part of the CAP in 2003 changed, to some degree, the basis for AES payments and some other links between AES objectives and cross compliance rationales appeared. We return to these links at the end of this chapter. With the purpose of establishing a framework for discussing the relationships between cross compliance and AES we start with some basic assumptions. The framework focuses on regulatory measures versus incentives and on various forms of requirements and the concepts introduced should be seen in this context only. This means that the terms 'cost' and 'benefits' are relative concepts in respect to a common reference point.

2.1 The costs and benefits associated with changes to agricultural practices

If we look at a given agricultural landscape at a specific point in time this landscape is a product of a complex mix of bio-physical conditions, former developments in agriculture and in non-agricultural functions and processes (such as natural processes and human settlements for instances), and of public policy interventions of various kinds. Public policies such as regulatory measures define the degree of freedom for the individual farmer related to changes in agricultural practices and the individual rules constitute 'reference points' for what is considered acceptable, needed, positive, negative, and so forth. Changes in land use and management which affect the environment, and which according to regulatory restrictions or other formal 'reference points' are considered undesirable, and therefore made illegal are termed as 'costs'. Changes which increase the positive impacts or reduce the negative impacts beyond the 'reference points' will be considered benefits and may be supported by public polices in the form of incentives such as AES. It follows from this that policy interventions concerning environmental costs should be about protecting the environment, and objectives dealing with benefits should concern environmental enhancement. However, the maintenance of environmental assets such as replanting forest stands after timber harvest or the continuous maintenance of grasslands may be located on either sides of the reference point depending on the policy context (Figure 2.1).

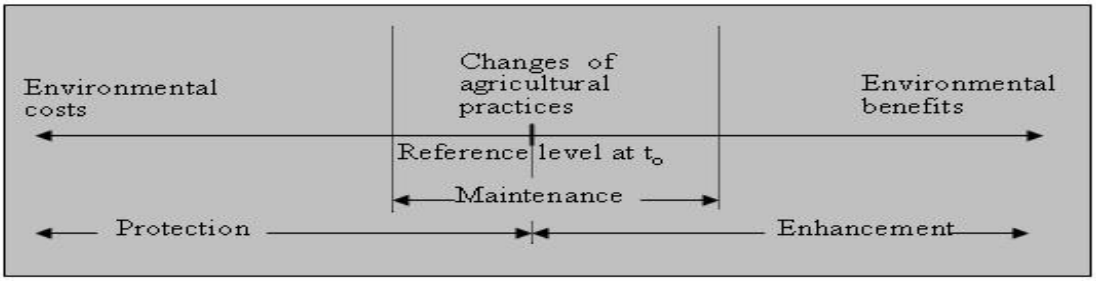

Figure 2.1 *Environmental costs and benefits in relation to society's view of unacceptable changes in environmental impacts from agriculture (=costs) and of improvements compared to present situation (= environmental benefits). The 'location' of concrete policy objectives (protection, maintenance and improvement) is also mentioned. Partly based on Bromley (1997).*

A few concrete examples may be useful to illustrate the principal differences between cost and benefits in a policy context. Since semi- natural grasslands in Denmark such as salt marshes, heathlands, natural meadows and pastures have dramatically reduced in numbers and size during most of the 20th Century, legislation has been introduced through amendments to the Nature Conservation Act (Primdahl 1996). Thus Article 3 in this Act protects semi-natural habitats larger than 2500 m^2 (0.25 ha) against reclamation and management intensification may not take place without permission, which in turn may be refused without compensation. The Article does not demand that semi-natural areas should be maintained meaning that some of these habitats may change if they are not grassed or mowed, and due to natural succession some of them may eventually develop into habitats which are not protected. This Article 3 represents a reference point in the protection of semi-natural habitats and it is also part of the story that the types and size of habitats under the Article has developed over time from the 1970s to the early 1990s. In 1990 AES were introduced to support

farmers for grassing or mowing these habitats extensively, and to convert arable land into permanent grassland. To the extent that these schemes were effective in changing management in a desirable direction (ceasing fertilisation for instance) they have enhanced the environmental situation compared to the reference point. If the payments have prevented abandonment of the desired management they have – due to the terminology used here - contributed to maintaining environmental values.

As this example illustrates, the reference point is the key when characterising agricultural practices and their environmental impacts. According to Bromley (1997) the reference point defines what society, at a given point in time, considers to be the acceptable level of environmental state, and therefore a reference point defines the 'bargaining space' when new policies are proposed. Similarly, reference points are crucial when new policies such as cross compliance measures are introduced and when different types of policy interventions are combined in the policy mix.

2.2 An agri-environmental policy matrix

In Figure 2.2 we show a matrix with the cost-benefit dimension, as shown in Figure 2.1 as one axis and a restriction-positive action dimension as the other axis. The reason for this is that in situations with broader policies – which both cross compliance measures and AES sometimes are part of in practice – there may be several reference points in play, meaning that it may be difficult to 'locate' the policy from a cost-benefit point of view.

Since cross compliance standards in the CAP deal to a large extent with requirements already included in EU environmental Directives (i.e. regulatory measures characterised by restrictions), it seems meaningful to place cross compliance on the 'cost side' of the environmental impacts from agriculture. However, some of the cross compliance standards referred to in Annex IV of Reg. 1782 may result in improvements to the environmental impact of agriculture compared to the present situation and will therefore belong to the benefit side of the reference point in question. Finally, cross compliance measures are not purely based on restrictive types of regulation. Some Annex IV requirements concern positive actions as well. For these reasons we have located most of the cross compliance measures in the "cost-restriction" corner of Figure 2.2, with some cross compliance measures placed in other parts of the cost-benefit/incentive-restriction matrix.

AES under Pillar 2 of the CAP mainly belong to the 'benefit side' since they support agricultural practice beyond legislation. In practice, however there are numerous examples of specific measures which offer support to pursue objectives which should be covered by regulatory measures from an environmental point of view. Thus, pollution of groundwater through the use of pesticides clearly should be considered as a 'cost' according Danish environmental legislation but in practice farmers are paid not to use pesticides in so-called 'sensitive areas'. In terms of regulation types, AES contain requirements both in the form of positive actions such as grassing, conversion of arable land, planting etc. and restrictions including limits on the use of fertiliser, pesticides, livestock density and so on. Consequently we have located most of the AES on the 'benefit side' with measures associated with positive actions as well as restrictions.

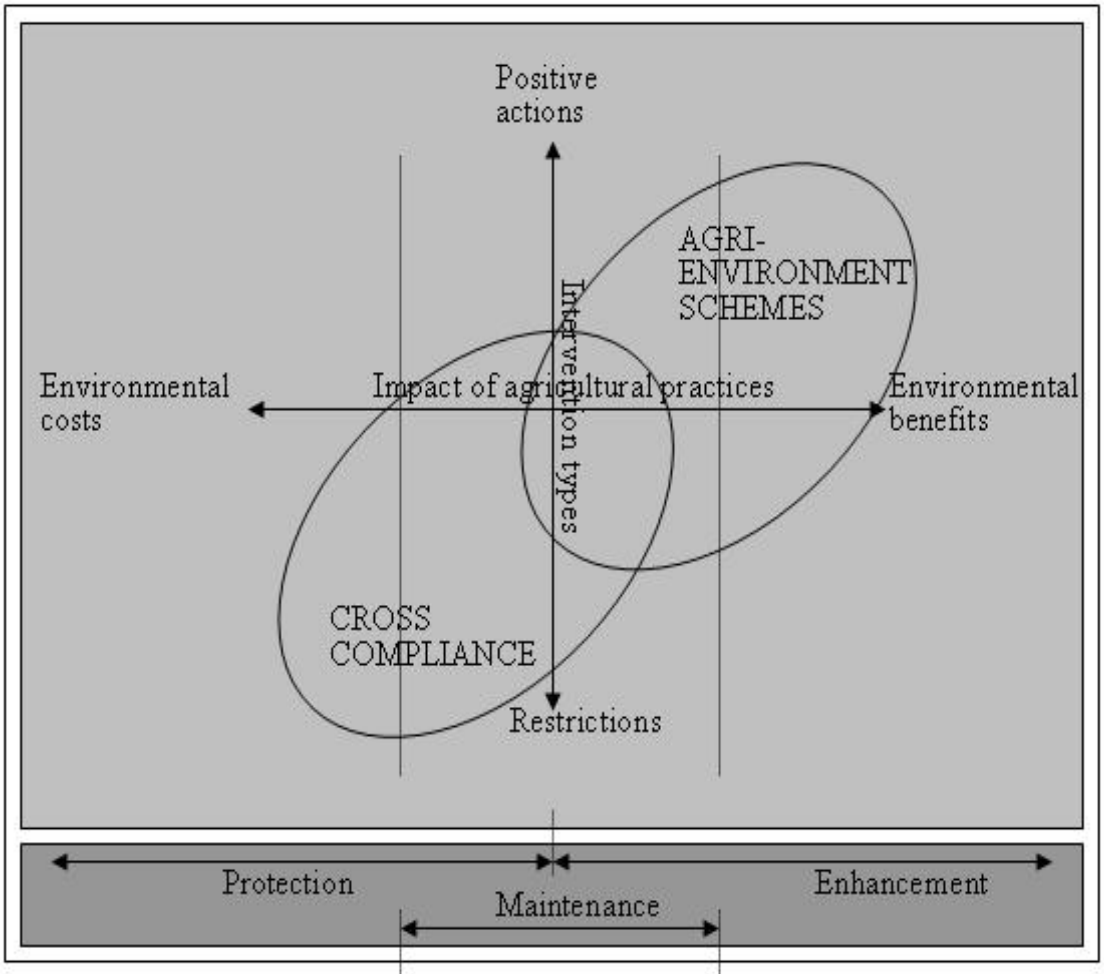

Figure 2.2 *The location of cross compliance measures and agri-environmental schemes in respect to an environmental cost and benefit dimension (see Figure 2.1) as well as a positive action-restriction dimension. The latter refers to different types and degrees of regulation with positive actions such as grassing, restoration of habitats, conversion of arable to permanent grassland, conversion of conventional to organic etc. Restriction refers to bans or limitations on practices including fertilisation, use of pesticides, livestock density etc.*

It appears from Figure 2.2 that cross-compliance standards and AES complement each other from a formal policy analysis point of view. The cross compliance standards cover environmental costs related to agricultural practices, whereas AES support environmental benefits. The possibilities to combine the two measures are obvious from a formal point of view. In practice however, it is by no means clear how the 'bargaining space' will be perceived by the different agents in the policy networks involved. In the next chapter we present some descriptions of the new cross compliance standards introduced by Member States following Reg. 1782.

If the introduction of cross compliance has moved the reference point and changed the cost and benefit impact distribution related to changes in agricultural practices, then the baselines for AES have changed. We present some data on this in chapter 4.

Introducing cross compliance and the change of reference points may, if cross compliance measures remain in place over a long period (i.e. beyond the next budget

period), result in more integrated agri-environmental policies that replace the current combination of direct payments and cross compliance on the one side and AES on the other. We briefly discuss such a scenario at the end of the paper.

3 The relationships between cross compliance and agri-environmental objectives and policies in practice

As mentioned in chapter 2, AES are designed to encourage farmers to protect, maintain and enhance the quality of the farmed landscape. The basic principle of AES are that they are voluntary to farmers, and that they provide payment to farmers in return for environmental services. Farmers are paid for the additional cost of implementing such services and/or any losses of income, and an incentive payment may be added. In order to distinguish more clearly between AES and regulatory measures it has been stressed since 1999 that AES payments may only be linked to requirements beyond mandatory requirements, as defined by a code of Good Farming Practice.

3.1 Characteristics of AES in EU

AES may be applied broadly to large areas (horizontal AES) or they may be targeted at specific contexts. If targeted, measures may be targeted to certain farm types (certain assumed agronomic circumstances) and/or to designated areas with well defined environmental problems. The targeting of AES could possibly make them well suited for solving site specific environmental problems.

Member States have a high degree of freedom in the design and implementation of AES in order to account for the diversity of landscapes, farm structures and agronomic situations represented in different Member States. As a consequence of this, a great diversity of approaches can be found in policy design, uptake, implementation styles and integration with other policies in the Member States.

However, there is still no systematic and comprehensive overview of AES objectives, targets and obligation issues available, although a few studies have provided some evidence of policy practices in a number of Member States (Andersen et al. 1999, Gatto and Merlo 1999, EU Commission 2005).

A Commission report from 2005 summarised that the objectives of AES may be grouped into two broad objectives: (1) Reduction of environmental risks associated with modern farming and (2) Preservation of nature and cultivated landscape (EU-Commission 2005).

Environmental issues dealt with in AES have been further analysed in the EU Project: The Agri-environmental Footprint: Development of a common generic methodology for evaluating the effectiveness of European Agri-environmental Schemes (AE-FOOTPRINT, Project SSPE-CT-2005-006491). A selection of 93 measures (termed ‘management packages’) selected from 60 AES from seven Member States have been analysed. The management packages included in the analysis may either consist of

one single funded prescription (obligation) or a set of funded prescriptions all of which are compulsory for the farmer to undertake in order to receive the payment. An overview of the environmental issues shows (see Table 3.1) that of the 93 management packages surveyed, 63 per cent dealt with biodiversity, 59 per cent with natural resources, and 35 per cent with landscapes. It is also shown that more than half of the management packages concern a mixture of environmental issues. The group dedicated to natural resources included the protection of resources either directly influenced by agricultural management practices such as soil, or resources indirectly under influence of agricultural practice, such as surface waters or groundwater (Vesterager et al. 2006).

Table 3.1. *Types of environmental issues dealt with in agri-environmental schemes, including 93 management packages. Figures in brackets indicate the number of management package where the environmental issue is solely dealt with (From Vesterager et al. 2006, p.9)*

Country	**Management Packages**	**Environmental issues**				
		Natural resources	Biodiversity	Landscape	Other	Broad (mixed)
---------- number of schemes/management packages surveyed ----------						
Denmark	11	11 (3)	8 (0)	0 (0)	0 (0)	8
Finland	11	5 (5)	3 (3)	1 (1)	2 (2)	0
Germany	12	11 (1)	8 (0)	10 (0)	0 (0)	11
Greece*	12	8 (2)	9 (1)	4	4	9
Hungary	12	8 (2)	10 (1)	7 (0)	0 (0)	9
Ireland	17	6 (2)	9 (3)	7 (0)	0	12
UK	18	6 (2)	12 (4)	6 (2)	3 (1)	9
Total	93	55 (17)	59 (12)	35 (3)	9 (3)	58

The diversity of policy design among Member States was also well illustrated by the fact that some countries have a focus on natural resources (Denmark and Finland), others on biodiversity and landscape (England, Ireland) and others more equally emphasise all three environmental issues (Germany) (Vesterager et al. 2006). As the survey does not include a comprehensive survey of all existing management packages in the investigated countries the comparison between countries may not be taken too far. However, generally speaking, the difference among the countries regarding the environmental issue in focus may partly be related to the dominant type of farming and the related environmental problems, and may also be related to other contextual and institutional issues, for example the attitude towards what can be expected from farmers, and the general national attitude to the countryside.

In the report from the European Commission (2005), which is based on figures from the Mid-term review of the Rural Development Program and includes 12 countries, an overview of the main categories of measures included in AES is provided. As shown in Table 3.2, the AES are grouped into two broad classes: (A) measures related to productive land management and (B) measures related to non-productive land management.

Table 3.2. *Main categories of AES identified by the EU Commission (2005)*

A. Productive land management • Input reduction • Organic farming • Extensification of livestock • Conversion of arable land to grassland and crop rotation • Undersowing and cover strips (buffer strips) and preventing erosion and fire • Actions in areas of special biodiversity/nature interest • Genetic diversity • Maintenance of existing sustainable and extensive systems • Maintenance of farmed landscape • Water use reduction
B. Non productive land management • Set-aside • Upkeep of abandoned farmland and woodland • Maintenance of the countryside and landscape features • Public access

There are no figures of the number of measures under the different categories. However, a breakdown of land under agreement by type of agreement (measure types) shows that reduction of input (including integrated farming) is the most common measure covering 26 per cent of total land under agreement, followed by biodiversity and landscape enhancement measures which represent 15 per cent of the land under agreement (European Commission 2005).

Regarding the question of targeting an overview has been made by Vesterager et al. (2006) showing that the majority of management packages (61 per cent) have a horizontal focus, with the remaining 39 per cent targeted at designated areas. The targeting of measures to farm types seems to be less widespread, with only Germany and Hungary having a more extensive use of this approach (Table 3.3).

It is also observed that most management packages are based on a part farm approach, with Ireland an exception with all management packages being part of whole farm approach.

In a study of agreements signed under 82 AES in operation in 22 areas in the 1990s[1] relatively little variation was found between the individual agreements despite great variations in the AES design. Thus, obligations on pesticide use, fertiliser use, grassland management and livestock density were included in agreements represented in all areas, whereas obligation on issues such as crop diversity, hedge management, abandoned land and fallow land were found in one or only a few areas (Andersen el al, 1999).

[1] The 22 case study areas were located in Switzerland and 9 EU member states. The latter were all agreements under Reg. 2078/92.

Table 3.3 *Targets of Management Packages (MP) in the Member States. A= all farms, I= intensive, E= extensive, M= marginal and O= other farms*

Country	Management Package	Availability (farm level)		Sectoral (targeted farm type)					Spatial focus	
		Whole	Part*	A	I	E	M	O	Hori.	Targ.
	---------- number of management packages ----------									
Denmark	11	2	9	11	0	0	0	0	4	7
Finland	11	4	7	11	0	0	0	0	3	8
Greece	12	1	11	8	1	1	2	0	4	8
Germany	12	1	11	5	3	4	0	0	6	6
Hungary ***	12	0	12	7	0	3	3	4	9	3
Ireland	17	17	0	15	0	0	0	2	16	1
UK	18	3**	16**	16	0	1	0	1	15	3
Total	93	28	66	73	4	9	5	7	57	36

* Even though the MP obligations only cover part of the farm, the associated GAP obligations may be applied for the whole farm

** One MP is registered as both

***Some MPs are registered in more sectoral categories.

It may be concluded that Member States have made use of the freedom to design AES specific for different national and regional contexts, but there are also many similarities. A significant proportion of AES deal with restrictions on agricultural practices such as use of inputs, livestock densities, and other management practices. Another proportion of the schemes contain requirements for actions to be taken by the farmers, including requirements on grassland management. A significant number of AES is targeted at specific habitats, or more generally to environmentally sensitive areas of various kinds.

3.2 Environmental cross compliance – a study of 9 Member States

In this section we present short descriptions of the design of the environmental cross compliance policies in nine EU-countries: England, Germany, The Netherlands, Denmark, Italy, France, Greece, Czech Republic and Lithuania. In the study we have looked at the design of the statutory management requirements (SMR) of Annex III, focusing on the habitats and nitrates Directives. In addition the descriptions cover the 11 requirements for the protection of soil and habitat/landscape features included in Annex IV on good agricultural and environmental condition (GAEC). It should be noted that the new Member States included in this study - Lithuania and the Czech Republic – have only been obliged to implement the requirements of Annex IV. Full implementation of the cross compliance policy for the new Member States is expected from 2009.

In the analysis of the current design of cross compliance and in the comparison of cross compliance policies with agri-environmental policies (the following sections) we have utilised contributions from the different project partners, supplemented with additional information from ministries etc, as well as information from other project dealing with AES. The contributions from the partners include:

- overviews of requirements of Annex III and IV
- short qualitative characterisation of the policy design

- a collection of examples where requirements of cross compliance standards are compared with requirements of similar agri-environmental schemes
- a short questionnaire about the future design of agri-environmental schemes.

Statutory management requirements related to the nitrates Directive

The requirements referring to the nitrates Directive are shown in Table 3.4 in the appendix. The figures show to what extent the requirements of Article 5, Paragraph 4a and Annex III (1.1-3 and 2), regarding mandatory measures to be implemented, have been incorporated in the cross compliance rules in the nine investigated countries.

All old Member States, except Italy (where no requirements for the nitrates Directive have been implemented at the national level yet) and Greece, have implemented rules concerning storage capacity livestock manure and the maximum amount of nitrogen from livestock manure to be applied (ha/year).

For the rules concerning application of fertilisers, no requirement has been established for France, Greece, and Italy according to the information gathered for this study. Furthermore, Greece and Italy has not established any rules concerning periods where application of certain fertiliser is prohibited.

The rules concerning periods where application of fertiliser is prohibited refer in some countries to both manure and inorganic fertiliser (England, the Netherlands and France), and in other countries only to manure (e.g. Denmark). The periods with a ban of application differ among the countries partly due to differences in growth period caused by climatic variations. In a similar way the requirement for storage capacity for livestock manure differs between the Member States.

The limits for fertiliser application include a range of different requirements ranging from the simple to the more complex. An example of a simple requirement is that no N-fertiliser should be applied on nature areas and uncultivated land. An example of a more complex rule is that the application of N-liquid fertiliser after harvest is only allowed on certain crops and that the application of fertiliser is only permitted in accordance with norms and fertiliser planning.

Only the Netherlands has implemented requirements related to Article 5,5 about other standards, here including the prohibition on the use of more poultry manure than stated in the poultry permits.

Looking further at the requirements related to the nitrates Directive, Table 3.5 (appendix) shows to what extent codes of good agricultural practice has been include in the cross compliance standards. It is worthwhile to mention that Member States, according to the nitrates Directive, only are obliged to implement provisions in so far as they are relevant.

Except for Italy, all old Member States have implemented obligatory standards related to the code of good farming practice (table 3.5). However, some diversity in the design of the code do appear with some countries having included provisions for more than half of the items (Denmark, the Netherlands, England and Germany), and others less (France, Greece). For issues related to the capacity and construction of storage vessels for livestock manure and the application of fertiliser near watercourses, all old

Member States except Italy have established requirements. Five Member States have established requirements related to application of fertiliser to steep slopes, the establishment of fertiliser plans, whilst four have rules concerning the application of fertiliser to water-saturated, flooded, frozen or snow-covered ground.

Cross compliance implemented in relation to the code of good agricultural practice of the nitrates Directive has for most case study countries resulted in no or few changes of the existing regulations (although, there is no information from Greece). In the cross compliance implementation period, there have been major changes in the fertilisation rules in both Germany and the Netherlands. These changes were not related to cross compliance implementation but to the insufficient implementation of the nitrates Directive and they would have been carried out irrespective of the introduction of cross compliance. In the Netherlands the implementation of the nitrates Directive has been redesigned due to a decision of the European Court of Justice.

Statutory management requirements related to the habitats Directive

Except for Italy and the new Member States the remaining case study countries have implemented SMRs for one or more of the articles of the habitats Directive.

With respect to the standards relating to Article 6 – the key article of the Directive – it appears that the standards implemented are of a very diverse character. Two of the nine case study countries (Denmark and Greece) have implemented general standards, including bans on certain management practises and land use changes. In Germany similar standards may exist referring to specific Länder legislation. Some guidelines for 'wildlife friendly harvesting' are also included in Greece. Denmark and Greece have standards saying that requirement of a management plan must be respected and England has a standard saying that the requirements of the Habitat and Bird Directives must be complied with. In the case of Denmark only one management plan has been prepared and the standard refers to this plan. In Germany and France changes and projects which could impact the Natura 2000 site have to be assessed before execution. In France there is a ban on harming certain listed plants and animals. In the Netherlands the standard implemented concerns a ban on the picking, destruction, possession and sale of protected indigenous plants.

For the remaining articles of the habitats Directive Germany, England, the Netherlands and France have standards including a ban on picking, collecting, cutting, uprooting, destroying and selling plants species, as well as a ban on introducing non-native species into the wild. The same countries, together with Denmark, have standards on the capture or killing of species of wild fauna. The Netherlands has included several standards related to good hunting/shooting practice and the time schedule for hunting/shooting.

The provisions established for Article 20 include some more or less well described prohibitions concerning the deliberate introduction of plants and animals into the wild.

The diversity of standards and the lack of specifity in the formulation of Article 6 especially may reflect that many countries are behind schedule in the implementation

of the habitats Directive. This may be due to the uncertainty about how to interpret the content and possible consequences of the Directive.

For the standards established, it may be concluded that a more or less weak status quo level of protection is reflected in most of the requirement of Article 6. Requirements related to proactive protection (enhancements) are absent, except for the management plan referred to in the Danish case where pro-active action has been negotiated with farmers covered by the management plan.

An overview of the implemented requirements related to the habitats Directive is given in Table 3.6 in the appendix.

Good agricultural and environmental condition (GAEC)

According to Article 5 and Annex IV of the Reg. 1782 Member States shall ensure that all agricultural land, and especially land which is no longer used for production purposes, is maintained in 'good agricultural and environmental condition'. For this purpose Member States shall define minimum requirements for agricultural and environmental conditions, which take in to account the specific characteristics of the area concerned. Annex IV specifies the agricultural and environmental issues to be dealt with. These are: soil erosion, soil organic matter, soil structure and minimum level of maintenance, including standards to maintain permanent pastures and unused areas. That Member States shall define requirements which take in to account the specific characteristics of the areas concerned, raises the fundamental question if all requirements of Annex IV should necessarily lead to the implementation of a standard? The Dutch Ministry of Agriculture is of the opinion that Annex IV is a helpful framework for formulating additional standards in case an evident environmental problem as listed in Annex IV has to be dealt with. For the Dutch government the answer to this question is that the national standards of GAEC reflect the environmental problems associated with agricultural land in the Netherlands.

As mentioned in the introduction there is no clear definition in the text of the Regulation as to what the minimum requirements should be, except that they must be established without prejudice to agri-environmental measures applied above the reference level of good agricultural practice. There is also no clarification of the meaning of good agricultural and environmental condition or the relative priority between the two. This leads to ask which of the conditions is the most important – good agricultural condition or good environmental condition? This means that the Regulation set up a very broad and loosely defined frame for the Member States to implement Article 5 and Annex IV, with possibilities to (1) put an emphasis on either good agricultural condition or good environmental condition, (2) pay attention mainly to land taken out of production or to all types of land and (3) put emphasis on requirements which fit general or contextual problems and conditions.

The analysis of the GAEC requirements of the nine case study countries shows, as expected, a wide diversity in design (see Table 3.7 in the annex). An examination of the requirements targeting the protection of soils shows that Denmark, Germany, Lithuania and the Czech Republic have paid little attention to these issues in general. All of the countries investigated, apart from one, have introduced standards concerning a minimum level of soil cover. However, the content of the standards varies from the relatively simple to the more comprehensive. Some standards require

a plant cover to be established (there are many variations of this requirement), and others refer to reducing or restricting the use of ploughing. More comprehensive standards require a soil protection review, soil erosion plan or the implementation of a set of erosion control standards. Standards relating to minimum land management requirements reflecting site specific condition have been introduced by five of the countries examined, and reflect at least three site specific erosion problems: the exposure of soil by overgrazing, erosion risk on slopes and the risk of erosion due to the removal of certain landscape features.

Requirements related to the protection of terraces is obviously only relevant for countries with certain altitude and terrain conditions. For the countries which have established requirements for this topic, most have limited the requirements to include the protection of terraces. However, Italy has also included maintenance requirements.

In the category of other soil erosion standards, France has established an obligation to set up buffer stripes along watercourses. The standard requires farmers who have a watercourse present on the farmland, to set up 5m-10m buffer zones (grass strips) and the Netherlands requires farmers to report cases of extraordinary erosion. France also has requirements on the maintenance of set-aside and grassland by grazing or mowing.

Concerning the issue of organic matter in soil, seven of the nine countries examined have established requirements regarding arable stubble management, most often through a ban on burning. France and Germany have also established requirements concerning crop rotation providing a yearly cultivation of at least three crops (excluding permanent crops) covering respectively 15 per cent of the area in Germany and 5 per cent in France. Set aside and unused areas are considered an acceptable crop in Germany, but not in France. Some exceptions from the rules exist in both countries.

Fewer countries have paid attention to soil structure although some requirements have been established concerning the use of machinery on water logged soil, the use of water for irrigation, drainage and green cover on set aside.

Turning to the minimum level of maintenance, it is also possible to observe a big variation in policy design. One country has designed hardly any requirements (the Netherlands, see comments on former page), whilst others have introduced standards related to several issues, for example England, Greece, France and Italy. It is also worth mentioning that many management requirements are related to several Annex IV issues and that different issues may be mutually linked (a minimum livestock density and the protection of permanent pasture both concern the protection of grassland habitats) which has caused Member States to place similar requirements under different Annex IV issues.

The protection and maintenance of permanent pastures has been dealt with in very different ways amongst the case study countries. Besides a requirement of land use registration, the Netherlands has not introduced any grassland requirements. Rules preventing conversion or ploughing up have been established by some case study countries (Germany, Italy, Greece and the Czech Republic), whereas others have more loosely defined standards referring to the share of permanent grassland that may

not be changed (relative to the reference level) (e.g. Denmark and France). In England there is no general ban on the removal of permanent pastures. However an environmental impact assessment must be conducted before changing or using uncultivated or semi-natural areas for intensive agricultural purposes (or afforestation).

All case study countries (with the exception of the Czech Republic and the Netherlands) have implemented a minimum maintenance standard for grasslands through the requirements related to a minimum livestock density/appropriate regimes, the protection of permanent pastures or avoiding the encroachment of unwanted vegetation on agricultural land. Cutting or clearing is prescribed as a minimum requirement, and in most countries, a minimum frequency of management is prescribed (management every 1-5 years).

Requirements related to unwanted vegetation have been established in five of the nine case study countries. One country (England) has paid attention to both weeds and scrub, whilst the remaining countries only refer to one of the issues. France refers only to weeds and Denmark, Greece and Lithuania only to scrub. Three countries have included prescriptions on how to remove the scrubs and two countries on the frequency of removal.

Standards related to the retention of landscape features have only been dealt with more thoroughly by England and Germany, and to a lesser extent, the Czech Republic. For all three countries most of the requirements refer to existing regulations already protecting the landscape feature in question. For the Czech Republic the protection of surface water steams and water bodies (placed under the issue of woodlands and wetlands) is new.

Rules for plant cover and other types of management of unused areas (other than those mentioned for permanent grass), for example a ban on use of pesticides and fertiliser have been established in Denmark and Italy.

With respect to the maintenance requirements, new requirements for the protection of permanent grassland and the management of areas no longer in agricultural use have been established for most case-study countries. Of the remaining maintenance issues, England has introduced quite ambitious requirements on landscape features, with most based on pre-existing laws. The requirement to establish a 2m margin around hedgerows and watercourses is a new requirement. France and Italy have introduced new requirements for olive groves.

Besides the new requirements on the protection of permanent grassland and the management of areas no longer in agricultural use, GAEC has resulted in new or more rigorous requirements related to soil erosion, soil organic matter and to a lesser degree, soil structure in most of the countries. An example of relatively ambitious soil erosion requirements is in England, and far reaching requirements have been established on soil organic matter in Germany. At the other end of the range is Denmark which has established no new requirements for organic matter and soil structure, despite the fact that the latter may be a problem (no information is accessible concerning the extent of the problem).

Concerning the balance between environmental and agricultural concerns in the GAEC it seems that most of the GAEC issues and requirements can fulfil both concerns at the same time. However, for requirements related to the protection of permanent grassland many of the case study countries have low minimum requirements, that may only reflect an agricultural concern (keeping land in reserve for future agricultural use by keeping it free of scrubs, for example) or landscape concern (for example, by maintaining an open landscape), but not any nature concerns. Besides missing the opportunity to maintain existing nature quality, little or less regular cutting may prevent new nature types evolving. A similar argument may count for some requirements targeted agricultural land no longer in use.

3.3 A comparison of objectives and obligations of cross compliance and agri-environmental schemes

A comparison of AES and cross compliance under Reg. 1782 in terms of environmental issues and requirements is not straight forward. This is partly because many environmental issues are interrelated, making it difficult to establish a stringent classification, and partly because the requirements are variable and complex, and often fulfil more than one environmental objective.

However, with reference to the above mentioned studies of AES (section 3.1), examples of AES requirements (obtained from the case study countries), cross compliance requirements for the nitrates and habitats Directives and the GAEC requirements, a tentative comparison of issues and types of requirement for the two policies is outlined here. It is important to stress that the analysis should be read with some caution since the data foundations are not complete (only two of the five environmental Directives are included, the provided examples of AES requirements are selective and only generally described) and the issue is complex.

For the comparison, environmental issues and related requirements have been classified according to four main categories, each including several sub-issues:

1) Reduction of nitrate and pesticide pollution
    a. reduction of nitrate pollution
    b. reduction of pesticide pollution
2) Protection of soil resources and reduction of water consumption
    a. reduction of soil erosion
    b. preservation of organic matter in soil
    c. preservation of soil structure
    d. reduction of water use
3) Maintenance of permanent grassland/semi-natural habitats including management for specific species
4) Maintenance and establishment of landscapes elements and features
    a. maintenance of landscape features
    b. maintenance of traditional landscapes
    c. maintenance of openness of landscape
    d. restoration and establishment of landscape features and elements

Figure 3.1 to 3.4 show the overlap between AES and cross compliance standards (GAEC and SMRs of the habitats and the nitrates Directives) in terms of issues and types of requirement.

AES issues and requirements → / Cross-compliance issues and requirements ↓	**Reduction of nitrate pollution**	*- restrictions on the use and application of manure and fertiliser*	*- crop management and crop rotation**	*- measures to control soil erosion*	*- conversion of arable to permanent grassland or set- aside*	**Reduction of pesticides**	*- restrictions on use and application on land in use*	*-restrictions on use and application on unused land*
Reduction of nitrate pollution								
- restrictions on the use and application of manure and fertilizer								
*- crop management and crop rotation**								
- measures to control soil erosion								
- conversion of arable to permanent grassland or set- aside								
Reduction of pesticides								
- restrictions on the use and application on land in use								
- restrictions on the use and application on unused land								

*Does not include conversion arable land to permanent grass or other permanent land uses

Figure 3.1 *Overlaps in issues and management requirements between agri-environmental policies and cross-compliance in relation to the reduction of nitrate and pesticides pollution. **Black** indicate that it is a matter of cross-compliance mainly, **Grey** indicate that it is a matter of AES mainly, **Black and grey strips** indicate mayor overlap and **Black and grey check pattern** indicate minor overlap*

The reduction of nitrogen pollution is the issue with the most substantial overlap between AES and cross compliance. There are overlaps in most of the countries examined as well as overlaps in the types of requirement and overlaps in the content of the requirements. Some countries are, for example, using agri-environmental measures to bring agricultural practices in line with some of the requirements of the nitrates Directive (e.g. Lithuania where SMRs are not implemented yet and France for the reduction of fertilisation to the level of 170 kg). In terms of the types of requirement, clear overlaps exist with regard to crop management/crop rotation, where more or less similar requirements have been used in both cross compliance and agri-environmental schemes when comparing countries. Also, in terms of fertiliser application and quantity, overlaps in requirements occur, for example with some Member States having fertilisation accounts as a part of their cross compliance standards (e.g. Denmark), whereas others have these types of requirement as part of AES (e.g. France).

In relation to the reduction of nitrogen pollutions is it also clear that some countries have used AES schemes to implement additional restrictions beyond the reference level defined in the SMRs, for example extra wide buffer strips along water surfaces (e.g. France and Denmark), no or reduced application of nitrogen on certain areas (e.g. Denmark) or use of specific application methods (e.g. Germany). The example about application methods also illustrates that despite the fact that the requirement goes beyond a defined reference level, AES are used to solve environmental problems which – from a formal point of view – could also have been dealt with through regulatory measures or cross compliance, because it concerns a general/global problem.

With the introduction of GAEC and the associated standards to prevent abandonment and the protection of permanent grassland a number of overlaps between cross compliance and AES have arisen in many cases, because a great proportion of AESs have focused on the maintenance of permanent grasslands and the prevention of abandonment (see Figure 3.2).

AES issues and requirements → / Cross-compliance issues and requirements ↓	**Maintenance of permanent grassland**	- min. animal density/grazing	- reduction of animal density/ max density	- restriction on the use of fertiliser and pesticides	- mowing/cutting	- limitation in time of grazing, cutting, mowing	- no damage of habitat (no conversion)	- other management prescriptions	- water level adjustment
Maintenance of permanent grassland									
- min. animal density/grazing									
- reduction of animal density/ max density									
- restriction on the use of fertiliser and pesticides									
- mowing/cutting									
- limitation in time of grazing, cutting, mowing									
- no damage of habitat (no conversion)									
- other management prescriptions									
- water level adjustment									

Figure 3.2 *Overlaps in types of management requirements between agri-environmental policies and cross-compliance in relation to the maintenance of permanent grasslands. Black indicate that it is a matter of cross-compliance mainly, Grey indicate that it is a matter of AES mainly, Black and grey strips indicate mayor overlap and Black and grey check pattern indicate minor overlap*

As mentioned in section 3.2, cross compliance standards concerning the maintenance of permanent grassland are minimum requirements that in most cases only require mowing / cutting at various frequencies, supplemented with some time limitation on when management can take place in some cases. In most cases there is no obligation to maintain permanent grassland by grazing. More demanding and/or size specific requirements are usually limited to AES. In some case study countries, however, AES requirements related to the maintenance of permanent grassland have been rather modest and in these cases requirements for AES and cross compliance may be much alike (e.g. Italy).

In terms of the maintenance of open landscapes (through, for example, the clearing of vegetation on areas no longer in agricultural use or maintaining certain plant cover in order to keep the landscape open) overlaps exist due to the introduction of cross compliance minimum maintenance requirements (see Figure 3.3). In some countries where land abandonment has been a problem for a long time, AES measures with rather modest requirements have been introduced (e.g. Sweden), but for others countries this type of requirement is more or less new.

The maintenance, protection and restoration of landscape features and elements (including olive groves) is handled in different ways in both cross compliance and AES, with some case study countries paying great attention to the issue and others having more or less ignored it. For those countries that have implemented standards on the protection and maintenance of landscape features, the standards mainly concern a ban on damaging and demolishing features and landscape elements. AES requirements require active action – for example cutting, the removal of unwanted vegetation or other types of management practice. However, few examples of standards requiring action are also found in the GAEC related to olive groves and terraces (for example, Italy) as well as the requirement to establish buffer zones or uncultivated fringes around certain features (as in England and France).

A smaller overlap between cross compliance and AES exists in relation to (a) the reduction of pesticides (except for pesticides use on unused areas), (b) the enhancement and creation of landscape features and (c) the maintenance of traditional landscapes. These issues are mainly dealt with by AES, indicating that requirements related to these issues go beyond what could be required without compensation.

Due to the limitations of the data, on the preservation of soil structure, organic matter in soil and reduction of water use in AES, it has not been possible to make a proper analysis of the overlaps between AES and cross compliance for these issues (see Figure 3.4). The preservation of soil structure is only an independent issue in a few AES and only half of the case study countries have paid attention to the issue in the design of GAEC standards. The issue of organic matter in soil is mainly an independent AES issue in the southern European countries; however, it has been dealt with in cross compliance in most of the case study countries. Also, the reduction of water use seems to a matter for AES, mainly in southern European countries. Only one case study country has implemented cross compliance standards on this topic.

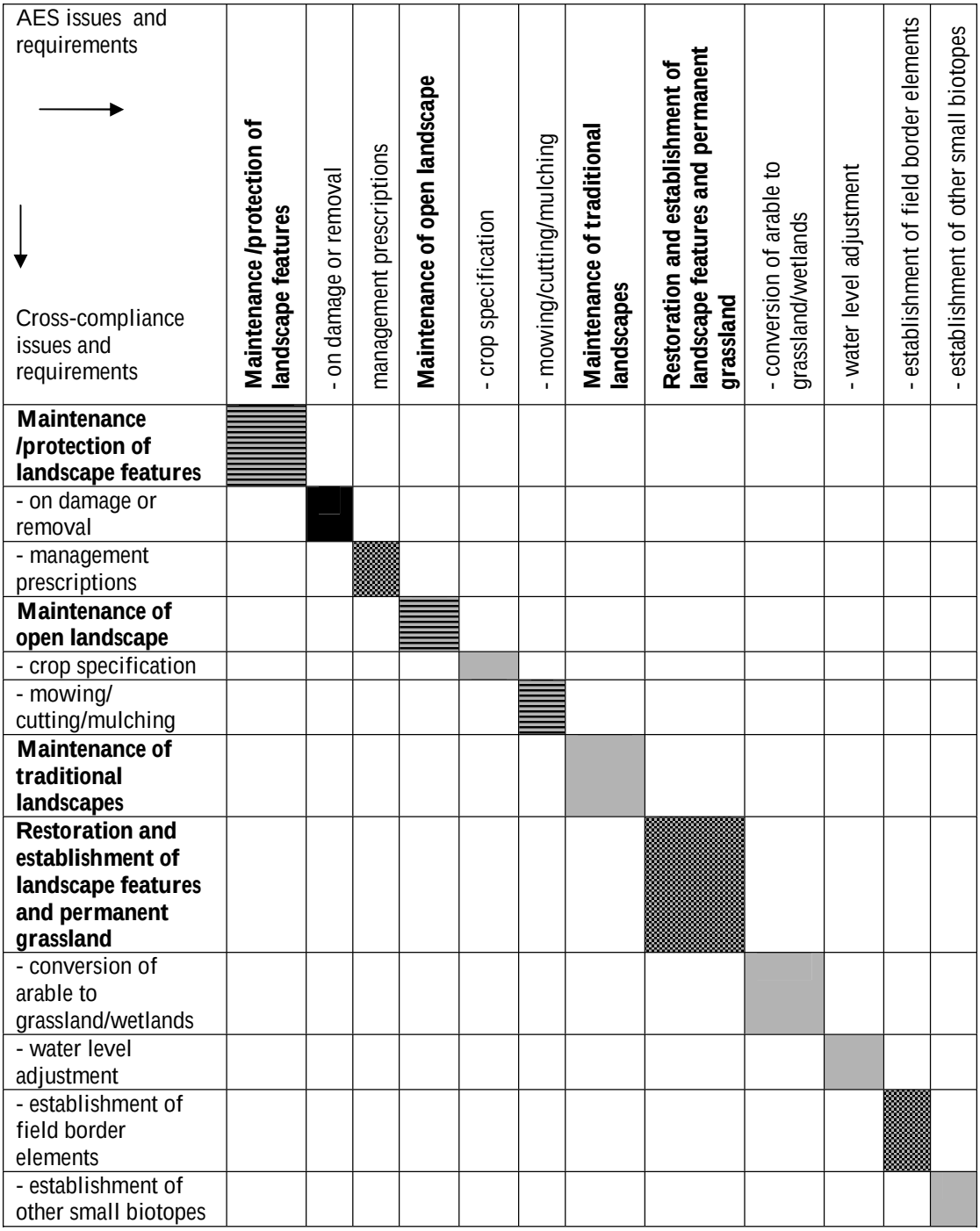

Figure 3.3 *Overlaps in issues and management requirements between agri-environmental policies and cross-compliance in relation to maintenance and establishment of landscapes elements and features. Black indicate that it is a matter of cross-compliance mainly, Grey indicate that it is a matter of AES mainly, Black and grey strips indicate mayor overlap and Black and grey check pattern indicate minor overlap*

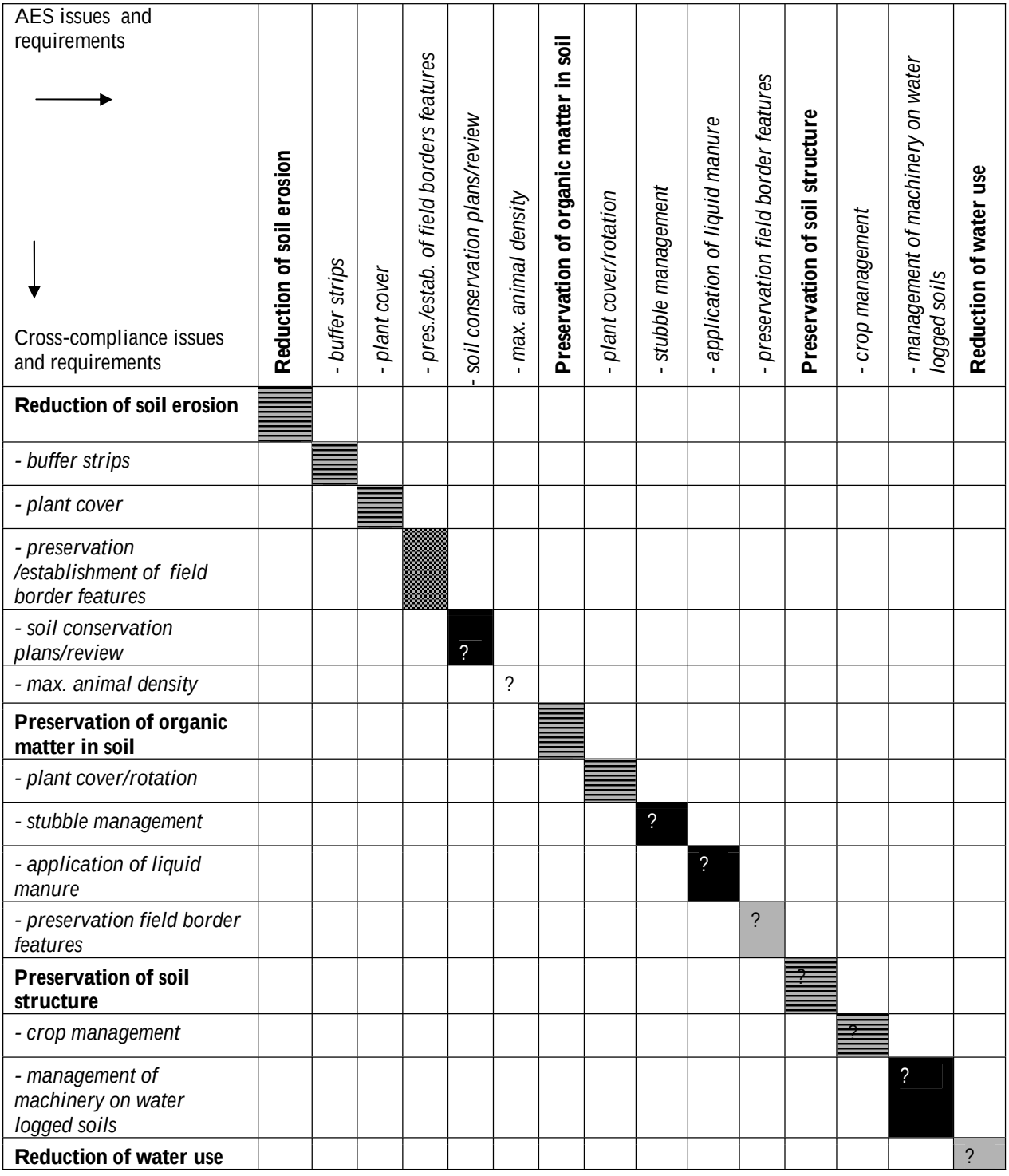

Figure 3.2 *Overlaps in issues and management requirements between agri-environmental policies and cross-compliance in relation to soil and water protection. Black indicate that it is a matter of cross-compliance mainly, Grey indicate that it is a matter of Agri-environmental policies mainly, Black and grey strips indicate mayor overlap and Black and grey check pattern indicate minor overlap*

3.4 Changes to AES as a consequence of cross compliance?

The partners in the case study countries were asked a few questions concerning how the introduction of cross compliance has affected the baseline conditions for the design of new AES including the payment calculation. Data from this part of the project does not cover all case study countries and many of the answers are based on preliminary considerations as the new Rural Development Programs were not yet finished.

Based on a review of the material received, and with reservations about the incompleteness of the material, we have found that:

- The introduction of cross compliance in the case study countries has not, at the time of writing, changed the basis for the calculation of agri-environmental payments, although the design of new schemes may be adjusted for certain grassland schemes (see next section). In England it has been suggested that the level of AES payments will decline as a consequence of decoupling due to reductions in the level of income forgone on which the level of the agri-environmental payment is set. As a consequence of decoupling we have already seen in Denmark a growing interest for AES agreements and this may reflect a higher motivation of the farmer because the decoupling means it will "cost" him less to enter an agreement.

  However from other sources we know that Luxembourg, for example, is revising their AES because of the decrease in RD funding and the introduction of cross compliance; they are raising the entry level into the AES as there is less money available, with cross compliance as the baseline.

- Certain permanent grassland schemes may come under pressure due to the introduction of the single payment scheme, which also allows permanent grassland to be included in the direct payment (for example, Germany). The new GAEC on permanent grasslands will demand a reformulation of some agri-environmental grassland schemes and probably also introduce more demanding requirements. On the other hand more demanding requirements may result in a lower uptake and by that fail to maintain important habitats and species (which may be the case in Italy).

- There is no clear trend concerning the targeting of AES in the period from 2007. Some countries rely on a continuation of an existing broad approach (for example England and the Czech Republic), others may consider a more target approach in the habitat Directive and/or Water Framework Directive areas (for example, Denmark, Germany, Lithuanian). In the Netherlands, more than 90 per cent of Natura 2000 areas are management by nature organisations and AES are therefore not targeted at these areas.

- Concerning the need for and /or interest in combining direct payments with requirements to participate in rural development schemes, most countries express that there will be a lack of political willingness to change AES from a

purely voluntary approach to a measure closely linked to direct payments. Budget limitations are also mentioned as an obstacle to such a new combined approach. A few Member States have expressed the potential of this approach and two Member States have proposed to introduce obligatory landscape plans or soil conservation plans at the farm level as a cross compliance requirement, with the possibility of having such plans funded by AES payments.

4 Conclusion

Neither in practice, nor in theory, is there a distinct cut between environmental issues to be dealt with by a regulatory approach, cross compliance requirements and AES incentives. The reference point of what are considered "acceptable" environmental impacts by society varies in space and time, which means that the dividing line between 'cost' and 'benefits' (see chapter 2) is by no means a stable one, and nor is it the same in different countries and regions.

As it appears from the last section, AES under the rural development programme (Reg. 1257/99) and cross compliance standards (under Reg. 1782/03) are, to a certain degree, complementary in respect to the kind of environmental issue that is focused on, and the kind of requirements applied. However, substantial overlaps exist, especially concerning the type and content of requirements used to reduce nitrogen pollution from agriculture. The analysis shows that across countries very similar requirements are used in both cross compliance and AES. Such overlaps may reflect the development of the environmental Regulations or Directives in these Member States, but may not be acceptable in the long run, if farmers in Europe are expected to produce under the same conditions from a competitiveness point of view. Overlap on issues, however, may be highly relevant if AES pay attention to size specific and highly environmental sensitive areas with more demanding requirements and cross compliance pays attention to more general environmental problems.

The overlap between cross compliance and AES also exists for the protection of permanent grassland and the openness of the countryside. The cross compliance requirements related to permanent grassland are in most of the case study countries minimum requirements, leaving more demanding requirements to AES.

Except for the protection of the open landscape and keeping agricultural land in good condition, the values of the cross compliance requirements linked to permanent grassland may be questioned. In most cases site specific and detailed requirements (including specific rules for grazing and mowing) are needed to protect biodiversity on permanent grassland in the longer term.

The comparison of the environmental issues dealt with respectively in cross compliance and AES also show that the restoration and establishment of new landscape elements and features are more exclusively a matter of AES. It is also clear that the introduction of cross compliance standards together with other parts of the CAP reform has changed or will change the framework for AES design for permanent grassland.

Concerning the needs or interests in combining the receipt of direct payments with a requirement to participate in rural development schemes, most countries express that there will be a lack of political willingness to change AES from a voluntary to a mandatory approach which link direct payments to participation in AES. However, from an academic point of view such an integrated approach does present some interesting potential in an agri-environmental policy context.

From the evidence collected, we have encountered no examples of cross compliance standards and AES being designed in an integrated way. However, we have encountered several examples of cross compliance standards designed from the perspective of not harming the possibility to offer AES payments to farmers.

5 Future perspectives for cross compliance in relation to rural development measures

We believe that agri-environmental issues will be placed at the top of the rural policy agenda in the future. This is because agriculture will remain a key source of income in many rural regions of Europe. Another reason lies in the poorly developed markets for public goods provided by agriculture in combination with a growing general interest in an attractive and well functioning rural landscape as a place to live in and visit.

It is, however not by any means clear what type of policies will be designed to support the development and maintenance of such landscapes in the future and nor is it clear, to what domains such policies will belong.

In this context we can imagine two scenarios for the future development of cross compliance standards and AES.

One possible development would be that cross compliance is implemented at a minimum level by Member States, designed for convenient implementation and easy control routines. In such a situation it would be realistic to assume that environmental cross compliance remains a top-down policy closely related to the CAP and the direct payments. A close relationship with agri-environmental schemes will not develop and no long-term environmental policy integration will evolve as a consequence of cross compliance. If or when direct payments come to an end, cross compliance will conclude without having resulted in any lasting impacts on policy practice.

Another track in a rather different direction is where cross compliance and AES become more connected through integrated types of policies and gradually contribute to the development of new kinds of agri-environmental policies. Such policies may – seen together - cover the protection, enhancement and maintenance of environmental values linked to agricultural practices. Whole farm approaches as well as territorial plans may be instruments to integrate the different types of policies. In such a scenario we imagine that the introduction of environmental cross compliance standards in combination with existing AES mark the beginning of a process towards agri-environmental policies associated with a broader rural policy domain.

Neither of the two scenarios is unrealistic. The first one may turn out to be the result of a pragmatic approach to cross compliance by Member States, which are already under pressure to adjust to the EU reforms emerging over the years. The second and more optimistic scenario, from an agri-environment point of view, may develop as a consequence of bottom-up demands for a better environment and a well functioning and attractive rural landscape. In the beginning, this could be supported by cross compliance and the new rural development programme, and later on evolve into a separate and relative autonomous policy domain.

5.1 Research needs in relation to AES and cross compliance

For the further development and understanding of cross compliance and the understanding of the relationship of AES and cross compliance more research is needed on the following issues:

- The development of concepts and models for cross compliance and AES relationships.
    - *Which impacts should be considered costs and benefits and could regulatory measures and incentives be integrated into coherent policies?*

- Our understanding the role of cross compliance and AES in maintaining public goods.
    - *How have public demands for maintenance been dealt with in different socio-economic contexts (historically and recently) – and what policy instruments have been used?*
    - *How effective are the new cross compliance standards in maintaining extensive agricultural practices/avoiding abandonment?*

- Cross compliance and AES as means of environmental policy integration
    - *To what degree and in what ways are cross compliance and AES contributing to the implementation of environmental policy objectives included in the nitrates Directive, the habitats Directive and other EU Directives*

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7 Appendix

Table 3.4 *SMR related to The Nitrate Directives, Article 5,4 a and Annex III, 1,1-3 and 2 /measures to be included in the action plans) for the EU-9 countries.*

Directive	Articles	Requirement	Denmark	Netherlands	Germany	England	France	Italy[1]	Greece[3]	Lithuania[2]	Czech Republic[5]
Nitrate	5,4,a and Annex III, 1,1	Rules relating to periods when the land application of certain types of fertiliser is prohibited	x	x	x	x	x	(x)	-	-	-
	5,4,a and Annex III, 1,2	Rules relating to the capacity of storage vessels for livestock manure	x	x	x	x	x	x	-	-	-
	5,4,a and Annex III, 1,3	Rules relating to limitation of the land application of fertilisers	x	x	x	x	-	(x)	-	-	-
	5,4,a and Annex III, 2	Limit concerning the maximum amount of nitrogen from livestock manure applied to land each year (i.e., 170 Kg N/ha, unless there is a derogation)[4].	x	x	x	x	x	x	-	-	-
	5,5	Other obligatory standards (additional measures or reinforced actions)	-	x	-	-	-	-	-	-	-

[1] The rule only count for the region Vento, action plans for Nitrate areas has not been fully implemented in Italy yet. In the absence of specific standards included in the action plan, the compliance should be guaranteed by a few GAEC standards

[2] Data from Lithuania is only saying that all the requirement of Nitrate Directive is adopted in the national legislation, however they have not became a part cross compliance rules yet

[3] In Greece all rules only concerns areas on steeply sloping ground (the definition of NVZ??) and no specific rules have mentioned for the paragraphs mentioned in this table.

[4] Denmark, Germany, the Netherlands and England all have exception on the170 kg N/ha demand

[5] In the Czech Republic the requirement of the Nitrate are currently being implemented in the national legislation, however they have not became a part of the cross compliance rules yet

Table 3.5 *The requirements related to the code of good farming practice, the Nitrate Directive 4,1 a and Annex II. The figures refer to numbers of provisions*

Article 4,1 a + Annex II	Requirement	Denmark	Netherlands	Germany	England	France	Italy	Greece	Lithuania	Czech Republic
A, 1	Obligatory standards applicable at farm level in relation to the periods when the land application of fertiliser is inappropriate	1	-	1	1	-	-	-	-	(1)
A, 2	Obligatory standards applicable at farm level in relation to the land application of fertilisers to steeply sloping ground	1	3	1	1	-	-	2	-	(1)
A, 3	Obligatory standards applicable at farm level in relation to the land application of fertiliser to water-saturated, flooded, frozen or snow-covered ground	1	2	1	1	-	-	-	-	(1)
A ,4	Obligatory standards applicable at farm level in relation to the conditions for land application of fertiliser near water courses	1	1	1	1	1	-	1	-	(3)
A, 5	Obligatory standards applicable at farm level in relation to the capacity and construction of storage vessels for livestock manures, including measures to prevent water pollution by run-off and seepage into the groundwater and surface water of liquids containing livestock manures and effluents from stored plant materials such as silage	6	1	3	1	1	-	2	-	(2)
A, 6	Obligatory standards applicable at farm level in relation to the procedures for the land application, including rate and uniformity of spreading, of both chemical fertiliser and livestock manure	1	1	-	1	-	-	-	-	(1)
B, 7	Obligatory standards applicable at farm level in relation to land use management, including the use of crop rotation systems and the proportion of the land area devoted to permanent crops relative to annual tillage crops	-	-	-	-	-	-	-	-	-
B, 8	Obligatory standards applicable at farm level in relation to the maintenance of a minimum quantity of vegetation cover during (rainy) periods that will take up the nitrogen from the soil that could otherwise cause nitrate pollution of water	1	1	-	-	1	-	-	-	-
B, 9	Obligatory standards applicable at farm level in relation to the establishment of fertiliser plans on a farm-by-farm basis and the keeping of records on fertiliser use;	1	-	2	1	1	-	1	-	(1)
B 10	Obligatory standards applicable at farm level in relation to the prevention of water pollution from run-off and the downward movement beyond the reach of crop roots in irrigation systems.	-	1	-	-	-	-	-	-	-

Table 3.6. *Requirements related to the Habitat Directive*

	Articles	Requirement	Denmark	Netherlands	Germany	England	France	Italy	Greece	Lithuania[1]	Czech Republic[1]
Habitat Directive	Art. 6	Obligatory standards applicable at farm level, including statutory measures under management plans, established in relation to special areas of conservation and sites proposed by the Member State, to avoid the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated	X	X	X	X	X	-	X	-	-
	Art. 13,1,a	Obligatory standards in relation to farming activities, established regarding the system of strict protection for the plant species listed in Annex IV(b) of Council Directive 92/43/EEC, and concerning the deliberate picking, collecting, cutting, uprooting or destruction of such plants in their natural range in the wild	-	-	X	X	X	-	-	-	(X)
	Art. 13, 1,b	Obligatory standards in relation to farming activities, established regarding the system of strict protection for the plant species listed in Annex IV(b) of Council Directive 92/43/EEC, and concerning the keeping, transport and sale or exchange and offering for sale or exchange of specimens of such species taken in the wild.	-	X	X	X	X	-	-	-	(X)
	Art. 15	Obligatory standards in relation to farming activities, established in respect of the capture or killing of species of wild fauna listed in Annex V (a) of Council Directive 92/43/EEC, and the taking, capture or killing of species listed in Annex IV (b) of the same Directive.	X	X	X	X	X	-	-	-	(X)
	Art. 22, b	Rules applicable at the farm level, established in respect of the deliberate introduction into the wild of species which are not native to their territory.	-	X	X	X	X	-	-	-	(X)

[1)] In the new Member States SMRs fist have to be implemented by 2009, however in the Czech Republic some SMRs are already being reflected in the Czech Legislation indicated by (x)

Table 3.7 *The GAEC requirements of Annex IV related to soil erosion, structure and organic matter*

Issues	Requirement	Denmark	Netherlands	Germany	England	France	Italy[1]	Greece	Lithuania	Czech Republic
Soil erosion	**Minimum soil cover**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**-**
	- plant cover on unused land (permanently or between growing seasons)	x	x	**-**	x	x	x	x	**-**	
	- restrictions on ploughing (between growing seasons)	**-**	**-**	x	**-**	-	x	-	**-**	
	- remain of stubble	**-**	**-**	-	x	-	x	-	**-**	
	- soil protection review/implementation of erosion control measures (erosion plan)	**-**	x	-	x	-	**-**	-	**-**	
	- other options	**-**	-	-	x	x	**-**	x	x	
	Minimum land management reflecting site specific conditions	-	**x**	**-**	**x**	**-**	**x**	**x**	-	**x**
	- protection of specific landscape features		**-**		**-**		**-**	**-**		x
	- slopes		x		**-**		x	x		-
	- natural and semi-natural vegetation (overgrazing)		-		x		-			-
	Retain terraces	-	**-**	**x**	-	-	**x**	**x**	-	**x**
	- protection (preservation)			x			x	x		x
	- maintenance			-			x	-		-
	Others	-	**x**	-	**-**	**x**	-	**x**	**-**	**-**
	- protection of field boundaries		**-**			**-**		x		
	- reporting on unusual erosion		x			**-**		-		
	- set up of buffer strips		-			x		-		
	- maintenance of set-aside and permanent grassland		-			x		-		
Soil Organic Matter	**Standards for crop where applicable**	**-**	**-**	**x**	**-**	**x**	**-**	**x**	-	-
	Arable stubble management	-	**-**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
	- no burning			x	x	x	x	**-**	**-**	x
	- incorporation in the soil or grazing			-	-		-	x	x	-
	Others	-	**x**	-	**-**	-	**x**		-	**x**
	- application of liquid manure		-				**-**			x
	- green cover on set aside land		x				x[1]			
Soil structure	**Appropriate machinery use**	-	-	-	**x**	**x**	**x**	**x**	-	-
	- no machinery on water logged soil				x	**-**	x	x		
	Other	-	**x**	-	-	**x**	**x**	-	-	-
	- authorised use of water		-			x	-			
	- efficient drainage system		-			-	x			
	- green cover on set aside land		x			-	-			

Table 3.8 Issues and requirements related to 'Minimum level of Maintenance' annex IV

Issues/ Requirements	**Denmark**	**Netherlands**	**Germany**	**England**	**France**	**Italy[1]**	**Greece**	**Lithuania**	**Czech Republic**
Minimum livestock stocking	-	-	-	-	-	x	x	-	-
- at least 0.2 LU/ha						x[1]	x		
Appropriate regimes	-	-	-	-	x	-	x	-	-
- pasture have to be maintained by grazing or mowing					x		-		
- clearing of scrubs in cases where grazing is not possible							x		
Protection of permanent pasture	x	x	x	x	x	x	x	x	x
- no conversion/ploughing	-	-	x[4]	-	-	x	x	-	x
- rules on use of machinery	-	-	-	-	-	x	-	-	-
- moving/cutting as a minimum	x	-	x	-	-	x[1]	-	x	-
- time limitations on grazing/cutting	x	-	x	-	-	-	-	x	-
- annually registration of land use	-	x	-	-	-	-	-	-	-
- respect of rules concerning the reference share of permanent grass	x	-	x	-	x	-	-	-	-
- others	-	-	-	x	-	-	-	-	-
Retention of landscape features	-	-	x	x	x	x	x	-	x
- terraces			-	-	-	x	-		x
- ancient monuments			-	x	-	-	-		-
- archaeological sites			-	x	-	-	-		-
- stone wall			-	x	-	-	x		-
- hedgerow			x	x	-	-	-		x
- dike/ditches/field boundary			-	-	-	-	x		x
- trees			x	x	-	-	-		-
- small woods and wetlands, inc			x	-	-	-	-		x
- grassland			-	-	-	-	-		x
- prohibition of the grubbing up of olives trees			-	-	x	-	-		-
- prevention of scrub on land taken out of production			-	-	x	-	-		-
Avoiding the encroachment of unwanted vegetation on agricultural land	x	-	-	x	x	-	x	x	-
- weed (certain kind)	-			x	x		x	-	
- scrub/trees	x			x	-		x	x	
- cutting/mechanical as a minimum	x			x	-		x	-	
- time limitations on grazing/cutting	x			x	-		-	-	
Maintenance of olives groves in good vegetative condition	-	-	-	-	x	x	-	-	-
- pruning					-	x			
- scrub control					x	x			
- frequency of management						x			
Others	x	-	x	x[2]	x	x	-	x	-
- maintenance of areas no longer in use	x				-	x			
- creation of buffer stripes	-				x				
1 Counts only for the region Vento 2 Others refer to different national rules applied for specific areas and management practices									