Project no. SSPE-CT-2005-006489

CROSS-COMPLIANCE

Facilitating the CAP reform:
Compliance and competitiveness of European agriculture

Specific Targeted Research or Innovation Project (STREP)
Integrating and Strengthening the European Research Area

Deliverable reference number and title of deliverable: D4: Framework report to design the project, including a detailed common research agenda for the project. The report will also include an operational definition of compliance with 'good farming practice indicators'

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Dissemination Level		
PU	Public	XX
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Authors of this report and contact details

Name:
Rainer Muessner, Partner acronym: Ecologic
Stephanie Schlegel Partner acronym: Ecologic
Floor Brouwer Partner acronym: LEI

Co-Authors:
Martijn van der Heide Partner acronym: LEI
Martin Farmer Partner acronym: IEEP
Kees de Roest Partner acronym: CRPA
Liesbeth Dries Partner acronym: KULEUVEN
Erik Mathijs Partner acronym: KULEUVEN

Address: Pfalzburger Str. 43-44, D-10717 Berlin
E-mail: muessner@ecologic.de, schlegel@ecologic.de

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General part

Approach of WP2 and objective within the project

A comparison of mandatory EU standards (e.g. environmental regulations, nature and biodiversity policies; safety, health and animal welfare standards) across member states requires a common theoretical and analytical framework, including consistent and operational concepts and impact models. The main purpose of this deliverable is to develop the theoretical and methodological framework for policy compliance analysis and evaluations, including an elaboration of the scientific approach. Based on an agreed set of definitions, the work package will develop a common framework of analysis to be applied throughout the project.

The very core of the introduction of cross-compliance was to use it as a tool to improve compliance with existing standards. Three items need to be distinguished in the analysis:

1. Costs of compliance with existing standards will be examined in the project in relation to competitiveness. The degree of enforcement of existing standards will be assessed.
2. Cross compliance is a tool which can be used to improve enforcement and compliance with existing standards and to ensure the respect of "good agricultural and environmental condition". The project will investigate the extent to which cross compliance will improve compliance with existing standards, and also identify what production-linked rules of good agricultural practices are used. Once Member States implement cross compliance, competitiveness will become an issue. A first side-effect of an improvement of compliance with existing standards would be the reduction of competition distortion within the EU (internal competitiveness), resulting from a potentially uneven enforcement of standards in Member States. Furthermore the implementation of Cross compliance inside EU will have an effect on the competitiveness of European farmers compared to farmers outside EU (external competitiveness). Another competition effect might appear due to the fact that farmers who are now confronted with the costs of meeting previously ignored standards face difficulties that effect their competitiveness related to the market position inside and outside the EU.
3. Farmers should keep their land in good agricultural and environmental condition. These requirements might affect the income of farmers, but should be off-set by direct payments (which, via cross-compliance, are re-coupled to those requirements).
4. Nevertheless, cross-compliance differs from a classical enforcement regulatory tool. In its intention, it is not a regulatory fine in the juridical sense, but an instrument to link policy objectives (e.g. animal welfare, environment etc.) to an incentive system .

Deducted from the general objectives of the project, a specific work plan has been derived to facilitate the scientific approach (see also chapter on research agenda) . The different work packages build up on each other and follow an order along a timeline (see table 1).

Table 1: Overview of Project Workplan

Timetable of Work		05/05	07/05	09/05	11/05	01/06	03/06	05/06	07/06	09/06	11/06	01/07	03/07	05/07	07/07	09/07
Workpackages	1: Co-ordination and management															
	2: Project design															
	3: Review of standards, certification, compliance and costs															
	4: Mid-term synthesis															
	5: methodology for competitiveness															
	6: Relationship with external competitivenes															
	7: Wider perspective and dissemination															
Meetings		TM		TM,EUG		TM		WS,EUG		TM	EUG	TM		EUG	TM	WS

TM: Team Meeting, EUG: End User Group Meeting, WS: Workshop

To develop a methodological approach based on the consensus of all consortium partners the following steps were undertaken in the first 7 months of the project (table 2).

Table 2: Overview of project work until November 2005

Mai	17./18. Mai**: Kick off Meeting in The Hague**
June	**Draft outline for WP 2** prepared by Ecologic and LEI
	Review of the draft outline by project partners
	Update of WP2 outline by Ecologic and LEI (by June 23)
July	**Test cases (pre-scan) are undertaken** (LEI, IEEP, KULEUVEN, CRPA, Ecologic), regarding compliance with standards, costs of compliance and data availability for different farm types.
August	
September	**Update of the study design report** for discussion at the team meeting
	26./27. September: Team meeting in Berlin to discuss the first findings of the national case studies (incl. NZ, USA and Canada) and further progress regarding the development of a common framework of analysis.
October	**Finalising the research agenda** (Input of all project partners) and delivery data needs of WP leader to be fed in the project design.
	End-user group meeting 20.10.2005 in Brussels
November	**Release of Deliverable 4**

Executive summary

The primary focus of the project is to investigate the value-added resulting from the introduction of cross-compliance as a tool to improve compliance with existing standards. A second issue is the investigation into the cost implications and competition effects of compliance with EU standards on the world market in the specific context of cross-compliance. Specifically, the project will include the following actions:

- Identify the relevant environmental, biodiversity, nature, food safety, animal welfare and health standards.
- Categorise standards and administrative procedures.
- Analyse how mandatory EU standards affect farming practices.
- Develop a methodology to compare EU standards with those of the main competitors on the world market.
- Identify and characterise experience with certification schemes.
- Investigate the value-added resulting from cross-compliance as a tool to improve compliance with existing standards.

To translate these goals into an operational research agenda, the work package 2 of the project must :

(A) Develop a methodology to assess the impact of EU standards on the costs and external competitiveness of EU agriculture and

(B) operationalise such a methodology for a selected range of products, assessing the impacts of such standards for external competitiveness of European agriculture.

To establish a common basis for collaborative work in the consortium, a kick off meeting was organised in The Hague by the Co-ordinator LEI. Here the overall objectives of the project were discussed and agreed upon and initial discussions about key-terms and possible methodological approaches were held. Based on these decisions, the co-ordinator (LEI) together with the partner responsible for the project design (Ecologic) elaborated a draft project design which included a glossary and terms of reference, a compilation of the relevant Statutory Management Requirements (SMR) including the detailed constraints they put on farming operations and an analysis of the SMRs according their relevance to different farm types and policy fields. Based on annex IV of the regulation, a first overview of the definition of “good agricultural and environmental condition” is given. This draft version has been reviewed by all partners.

A second meeting of all project partners was held in Berlin during 2 days on September 26./27. The aim of this meeting was to finalise the commonly agreed research agenda, to agree on a programme of work for the next work packages and to develop a framework for the further analysis in the project.

During the meeting several countries presented their findings on the state of knowledge, data availability and state of affairs for implementing cross-compliance in their countries. Differences between countries from the EU and outside the EU (e.g. NZ, CAN and USA) were discussed. These reports reflect a first data scan and a general overview of the state of implementation in the partner countries. The reports can be found in chapter 5 of this deliverable.

In the second part of the meeting all partners worked on the research agenda, including data needs (type of data, scale and extent) for the next work-package. (see chapter 4 for details).

On the 20th of October, an end user meeting was held in which the expertise of potential end users and their expectations of the project were discussed and integrated into the project design. The current report (deliverable 4) therefore reflects a comprehensive overview of the first phase of the project and the research agenda for the next steps. It will be made publicly available on the project's web page.

Scientific and societal relevance

The project and its expected results have relevance for science as well as for society.

- (scientific methodologies) In the development of a comprehensive methodology to measure compliance with mandatory standards that are put in place in the cross-compliance system and evaluate its costs and effects on the competitiveness of the EU farm sector. Based on the expected results, a policy instrument evaluation can be applied. The project will therefore contribute to the development of scientific research methodologies and of tools for policy evaluations that might be used for other agri-environmental policy instruments.
- (EU environmental policy) A greater understanding of cross-compliance is a key contribution to the aims of the Sixth Environment Action Programme, the Sixth Framework Programme of DG Research, Priority 8.1 ('Integrating and Strengthening the European Research Area'), and more specifically, it contributes to 'Sustainable management of Europe's natural resources', Task 10 (Cross compliance).
- (Standards and quality of life) The standards studied in the project have the potential to contribute to improvements in quality of life, generating better protection of the environment, biodiversity and the landscape and providing food products. Such standards also need to match the new goals of the CAP, that is to secure a sustainable and competitive agriculture throughout Europe. A proper understanding of the function of cross-compliance as an instrument is a prerequisite that it can be used in an adequate way and therefore maximise its benefits for the sake of the people living in the EU.
- (improvement of policy instruments) Furthermore, the project will investigate the value-added resulting from introducing cross-compliance as a tool to improve compliance with existing standards. An investigation into the costs implications and competition effects resulting from either enforcing previously ignored existing standards (Annex III) or production-linked rules of 'good environmental and agricultural condition' (Annex IV) has relevance for the design of future policy instruments and imparts valuable information for the farm sector as well as for the whole food production sector and trade.
- (fostering the EU Cardiff process) The project includes compiling background information and increasing the understanding of cross-compliance, which is a key element of integrating environmental, biodiversity, health, safety, animal welfare and sustainability concerns into the CAP. It therefore contributes to the wider political objectives of integrating environmental issues in sectoral policies, known as the Cardiff process. The standards concerning agricultural practice reflect the societal responsibility of the farming sector which covers not only the production of commodities but the stewardship of the cultural landscape as well.

- (enhancing policy implementation) The project offers an analysis of how mandatory EU standards influences farming practices in the EU. Based on the Directives as the primary forms of legislation for most EU policies, the Member States may implement them in a way that suites their needs and individual environmental and economic national backgrounds. The current project should contribute to the development and improved effectiveness of the instruments used by the Member States.

Specific part

1 Terms of References / Glossary

At our first team meeting in The Hague, a number of terms were the subject of discussion and different interpretations. Therefore it seems appropriate to agree on terms of references and a glossary of key terms for the Description of Work (DOW).

Cross Compliance

From 2005, all farmers receiving direct payments will be subject to compulsory cross-compliance (Council Regulation No 1782/2003[1] and Commission Regulation No 796/2004). They must respect cross compliance standards in two ways: First they have to respect the statutory management requirements set-up in accordance with 19 EU Directives and Regulations, listed in Annex III of Regulation N° 1782/2003 (amended by Reg 21/2004). The standards relate to the protection of the environment; public, animal and plant health, food safety and animal welfare. Farmers will be sanctioned in the case of non-compliance (partial reduction of direct support). Even so the target group of Cross Compliance are only those farmers that receive direct payments. The behaviour of farmers not receiving direct payments is not affected directly.

Beneficiaries of direct payments will also be obliged to keep land in good agricultural and environmental condition (GAEC) as defined in Annex IV of Regulation N° 1782/2003. Minimum requirements for GAEC will be defined by Member States, and should include standards relating to soil protection, maintenance of soil organic matter and soil structure, and maintenance of habitats and landscape, including the protection of permanent pasture. In addition, Member States must also ensure that there is no significant decrease in their total permanent pasture area, if necessary by prohibiting its conversion to arable land.

Standards

When referring to standards, the project focuses on compliance with present mandatory EU standards at the farm level (statutory management requirements referred to in Annex III of Council Regulation (EC) 2003) and the requirements resulting from the rules for 'good agricultural and environmental conditions' (Annex IV of Regulation 1782 (EC) 2003) and their implementation in the Member States.

- Classification of standards: environment (also including biodiversity and nature), food safety, animal welfare, health (public health, animal and plant health) and diseases

[1] amended by Reg 21/2004 that sets out rules on identification and registration of ovines and caprines.

Compliance with Standards

Farmers that comply with the statutory management requirements referred to in Annex III and IV of Council Regulation 1782 (EC) 2003 (amended by Reg 21/2004) are compliant with standards.

Degree of compliance with standards

There are two ways to specify the compliance with standards:

- **according to compliance with certain standards**: Percentage of farms that comply with the certain standards of each directive (as referred to in Annex III and IV of Council Regulation 1782 (EC) 2003, amended by Reg 21/2004)
- **according to farmers compliant with all standards**: Percentage of farms that comply with all standards as referred to in Annex III and IV of Council Regulation 1782 (EC) 2003, amended by Reg 21/2004.

In both cases the **classification** will be made as the following:

Low degree of compliance	medium degree of compliance	high degree of compliance	high - full compliance
0 - 40%	40 - 70%	70 - 95%	95-100%

Direct Payment

Direct Payment means a payment granted directly to farmers under an income support scheme listed in Annex I of Council Regulation No. 1782/2003[2].

Single Farm Payment

Council Regulation No 1782/2003 established the Single Farm Payment (SFP). The aim of the SFP is to de-couple farming subsidies from production. Instead of receiving an amount determined by the volume of goods produced, a farmer is paid a set amount according to the subsidies they received over the reference period (2000-2002). Member state must introduce the SFP between 2005-2007 but for certain goods such as olive oil, the link to production will be maintained for the time being.

Good agricultural and environmental condition

- Beneficiaries of direct payments will also be obliged to keep land in good agricultural and environmental condition.
- "Member States shall ensure that all agricultural land, especially land which is no longer used for production purposes, is maintained in good agricultural and environmental condition. Member States shall define, at national or regional level, minimum requirements for good agricultural and environmental condition on the basis of the framework set up in Annex IV, taking into account the specific characteristics of the areas concerned, including soil and climatic condition, existing farming systems, land use, crop rotation, farming practices, and farm structures. This is without prejudice to the

[2] amended by Reg 21/2004

standards governing good agricultural practices as applied in the context of Council Regulation (EC) No 1257/1999 and to agri-environment measures applied above the reference level of good agricultural practices." (Council Regulation No. 1782/2003, Article 5)

Competitiveness:

To assess the impact of compliance costs on competitiveness, partial equilibrium models will be developed. For this, production cost data supplied for each product and country will be used to estimate supply response functions. The models will be further calibrated using production, consumption and trade data. As a result, the sensitivity of the EU market share to changes in production costs can be calculated.

The assessment of the project will focus both on the competitiveness effects within the EU and on the external competitiveness (world market). The project will investigate the cost implications and competition effects resulting from either enforcing previously ignored existing standards or the production-linked rules of 'good agricultural and environmental condition'. The analysis of competitiveness focuses on the following topics: (see WP 5):

- Context
- Product approach
- Production costs
- Markets
- Institutions

A first side-effect of an improvement of compliance with existing standards, would be to reduce the distortion of competition within the EU resulting from potentially uneven enforcement of standards. A second side effect might be that farmers who are now confronted with the costs of meeting existing and previously ignored standards face difficulties with competitiveness on a on global scale.

Context

To investigate the impacts on external competitiveness, the context has to be taken into account. This is due to the fact that there are major differences between regions and countries, in terms of environmental conditions, agricultural systems and socio-cultural demands, including differences in administrative organisation. The project will identify these as well as information on farming systems, conditions of soils and climate, socio-economic conditions and innovative and technological capacity of the agricultural sector in the country specific case studies.

Costs / Benefits of Compliance

The investigations focus on the cost implications and competition effects resulting from either enforcing previously ignored existing standards (Annex III of Council Regulation 1782 (EC) 2003, amended by Reg 21/2004) or production-linked rules of 'good agricultural and environmental condition' (Annex IV of Council Regulation 1782 (EC) 2003). The costs of compliance with standards at farm level in the EU will be compared to those of the external competitors (e.g. New Zealand, Canada, and U.S.A.). Costs that appear later on the agrifood chain will be examined in qualitative terms to find out to what extent SMR may also impact parts of the agrifood chain.

1. **The time reference for the calculation of compliance costs** should be the year (or start from the year) 2005, because cross-compliance (CC) became mandatory then. Nevertheless the reference year used also depends on data availability and a different year may be chosen to fit with the aims of the project.
2. **Compliance Costs taken into consideration/ approach:**

   The following types /categories of costs should be considered where appropriate:

On farm level

- **Investment costs (see also non-tradable inputs / fixed costs)**

Investments that are necessary for compliance with standards, but not related to general modernisation/ enhancement of productivity.

- **Production/running costs**

Expenses incurred by production. Includes both fixed and variable costs of production (see below) .

- **Costs due to reduced yields/income**

Compliance with standards can lead to reduced yields per hectare or production unit compared to the status quo. Only changes to this status quo should be considered CC costs.

- **Administrative/ documentation costs:**

Administrative / documentation costs of cross compliance should theoretically only include reporting / management costs since compliance with standards was mandatory before 2005, even when previously ignored. These are mainly expressed in additional hours of labour.

- **Costs of certification / auditing**

Costs that include the time taken to prepare the necessary documentation for auditing /certification and the certification costs itself, if they are covered by the farmer and are not tax deductible.

- **Non tradable inputs/ fixed costs** (mainly land and buildings)
- **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[3]
- **Variable costs:** Expenses incurred on a holding which vary in direct proportion to small changes in the scale of the enterprise related to the crops, livestock and practices in use. These include the cost of fertilisers, seed, sprays, casual labour and contract work specific to a crop, concentrate feed, veterinary expenses and bought in forage.[4]
- **Costs to be borne by the administration**

[3] Baldock, David; Mitchell, Karen 1996: Glossary of Agri-Environmental Terms, IEEP – Institute for European Environmental Policy

[4] Baldock, David; Mitchell, Karen 1996: Glossary of Agri-Environmental Terms, IEEP – Institute for European Environmental Policy

- Costs for control and punishment
- Certification costs (if not covered by farmer)

Cost estimates will be presented on an **annual basis**, unless explicitly defined in another manner.

Added value (cross-compliance)

The added value of cross compliance in general is related to the purpose of the regulation to enhance the compliance with existing standards. An added value of cross compliance can be assumed, when the percentage of farms that comply with certain or all standards of each directive can be increased (see also compliance with standards above) compared to the ex ante situation before the instruments' implementation. In case of compliance by the farmers an added value for the concerned issues (environment, animal health and welfare, food safety...) is reached. In case of non-compliance, but proper implementation due to effective enforcement and control mechanisms, the resources (direct payments) retained can be used otherwise to achieve the policy objectives.

Impact of Cross Compliance

The impact of Cross Compliance related to the overall aim of the instrument to foster compliance with existing standards can be categorised according the following types and situations.

Type	Situation before CC	Situation after CC	Impact of cross-compliance
Type A	The degree of compliance was already high before the introduction of cross-compliance	The degree of compliance is still high and will not increase	No impact
Type B	The degree of compliance was low/moderate before the introduction of cross-compliance	The degree of compliance becomes high/higher	Moderate - High impact
Type C	The degree of compliance was low/moderate before the introduction of cross-compliance	The degree of compliance remains low/moderate after the introduction of cross-compliance	No impact

The impact of cross-compliance on the behaviour of farmers to comply or not to comply depends on several factors: e.g. the amount of payments received in a given sector (e.g. pig and poultry sectors are identified as being poorly affected by cross-compliance in specialised units) or the level of control and enforcement.

Benefits

Benefits of compliance may apply on a farm level and / or on a public level. Possible benefits on a farm level are savings due to the reduction of pesticides as well as possibly better marketing options etc.

Also public benefits must be taken into account. In most cases they will not be directly measurable in monetary terms but will have indirect benefits (water protection, biodiversity improvement, soil protection, emission reduction, consumer trust).

Certification Schemes

Certification schemes are included within the project so that the effects of voluntary as well as mandatory commitments on environmental behaviour and compliance with standards can be assessed. The inventory will not be limited to certification systems but widened to other instruments such as audits or other environmental management systems related to the issues covered by the statutory management requirements and GAEC. The analysis will be the subject of 10 national case studies within WP3 and will form the content of deliverables D6 and D14.

Good farming practice

GFP is a requirement under EU Commission Regulation 1750/1999 and is an integral part of the Less Favoured Area (LFA) and Agri-environment schemes. Farmers in receipt of these schemes/ payments must therefore comply with GFP. Building a minimum requirement for additional compensations / payments, GFP is specified in different national codes for different media (soil, water, air) or agricultural practices (fertilising, plant protection) and a few verifiable standards. Indicators for the compliance with the codes of GFP are set mainly for requirements resulting in documentation duties and/or direct and easy to evaluate criteria to minimise the control effort. The criteria that are the basis for GFP are defined nationally as well as the implementation and enforcement procedures.

Data collection

- A quantified assessment will be carried out where possible; otherwise qualitative assessments will be performed.
- Empirical data should be collected wherever available. Where empirical data is not available an estimation will be performed using accepted accounting rules. (Accounting rules should only be used if they are well accepted.)

Impact of compliance

- The impact at farm level of standards depends on the degree of specialisation, intensity and management practices of the production units involved. On farm level the impact of compliance may be positive or negative.
- The impact includes not only the financial constraints but also the effects on the environment, the competitiveness of the farm and the long term conditions of production.

Level/ Time horizon

To assess the costs of compliance the general reference level during this study will be the farm as production unit. However, some topics could impact beyond the farm level. They are considered in rather qualitative terms, where relevant. This can be done separately, as the following table illustrates. Results should be differentiated into short, medium and long term costs and benefits where possible.

Costs /benefits of Compliance

	Farm level	Public costs/ benefits
Long term	from 5 years to 30 years	15-30 years
Medium term	from 2 years to 5 years	5-15 years
Short term	up to 2 years	Up to 5 years

Farm types

The project follows a product approach to define farm types[5], particularly in WP 6. The selection will be made in order to complete the data gaps that might remain from the results obtained from WP3. A number of products are identified to evaluate the robustness of the methodology developed in WP5. The chosen commodities reflect the diversity of farming across Europe, the type of environmental, health and safety standards involved, as well as their linkages to the CAP.

Six categories of products will be analysed, each of them backed by at least 2 case studies:

- Cereals
- Dairy products
- Pigs and poultry
- Beef
- Fruits
- Olive oil

Agricultural Infrastructure

- The basic network or foundation of capital facilities or community investments which are necessary to support economic and community activities[6].
- Permanent installations constructed to assist economic activity, such as roads, irrigation or drainage works, buildings and communication systems[7].

[5] It will therefore not follow the classification of the European Commission established by Commission Decision 78/463/EEC of 7 April 1978.

[6] Definition source: dataservice, http://dataservice.eea.eu.int, such as for example infrastructure

[7] FAO Glossary, Food and Agriculture Organization of the United Nations, http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/T0715E/t0715e0c.htm

Markets

The project will distinguish between existing markets for commodities and services and possible emerging markets.

Product approach

See farm types

2 Statutory management requirements

The Statutory Management Requirements require compliance with a number of articles from 19 EC Directives / Regulations which address environmental, public, animal and plant health and animal welfare. 9 of these will apply for cross compliance purposes in 2005, a further 7 from 2006, with the remaining 3 being applied from 2007.

- Applicable from 1.1.2005: Environment; Public and animal health; Identification and registration of animals
- Applicable from 1.1.2006: Public, animal and plant health; notification of diseases
- Applicable from 1.1.2007: Animal welfare

Issues on environment, public and animal health, identification and registration of animals, public, animal and plant health; notification of diseases and animal welfare are provided in the following table.

Table 3: Statutory management requirements referred to in Article 3 and 4 of Regulation 1782/2003 (amended by Reg 21/2004)

Directives	Articles
Environment	
Council Directive 79/404/EEC of 2 April 1979 on the conservation of wild birds (OJ L 103, 25.4.1979, p. 1	Articles 3, 4 (1), (2), (4), 5, 7 and 8
Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution by certain dangerous substances (OJ L 20, 26.1.1980, p. 43.)	Articles 4 and 5
Council Directive 86/278/EEC of 12 June 1968 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture (OJ L 181, 4.7.1986, p. 6)	Article 3
Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (OJ L 375, 31.12.1991, p. 1)	Articles 4 and 5
Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna (OJ L 206, 22.7.1992, p. 7)	Articles 6, 13, 15, and 22(b)
Public and animal health; Identification and registration of animals	

Council Directive 92/102/EEC of 27 November 1992 on identification and registration of animals (OJ L 355, 5.12.1992, p. 32)	Articles 3, 4 and 5
Commission Regulation (EC) No 2629/97 of 29 December 1997 laying down detailed rules for the implementation of Council Regulation (EC) No 820/97 as regards ear tags, holding registers and passports in the framework of the system for the identification and registration of bovine animals (OJ L354, 30.12.1997, p. 19)	Articles 6 and 8
Regulation (EC) No 1760/2000 of the European Parliament and of the Council of 17 July 2000 establishing a system for the identification and registration of bovine animals and regarding the labelling of beef and beef products and repealing Council Regulation (EC) No 820(97) (OJ L 204, 11.8.2000, p. 1)	Articles 4 and 7
Council Regulation (EC) No 21/ 2004 of 17 December 2003 establishing a system for the identification and registration of ovine and caprine animals and amending Regulation (EC) No 1782/2003 and Directives 92/102/EEC and 64/432/EEC (OJ L 5, 9.1.2004, p. 8).	Articles 3,4 and 5
Public, animal and plant health	
Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market (OJ L 230, 19.8.1991, p. 1)	Article 3
Council Directive 96/22/EC of 29 April 1996 concerning the prohibition on the use in stockfarming of certain substances having a hormonal or thyrostatic action and of beta-agonists, and repealing Directives 81/602/EEC, 88/146/EEC and 88/299/EEC (OJ L 125, 23.5.1996, p. 3)	Articles 3, 4, 5 and 7
Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (OJ L 31, 1.2.2002, p. 1)	Articles 14, 15, 17(1), 18, 19 and 20
Regulation (EC) No 999/2001 of the European Parliament and of the Council of 22 May 2001 laying down rules for the prevention, control and eradication of certain transmissible spongiform encephalopathies (OJ L 147, 31.5.2001, p. 1)	Articles 7, 11, 12, 13 and 15
Notification of diseases	
Council Directive 85/511/EEC of 18 November 1985 introducing Community measures for the control of foot-and-mouth disease (OJ L 315, 26.11.1985, p. 11)	Article 3
Council Directive 92/119/EEC of 17 December 1992 introducing general Community measures for the control of certain animal diseases and specific measures relating to swine vesicular disease (OJ L 62, 15.3.1993, p. 69)	Article 3
Council Directive 2000/75/EC of 20 November 2000 laying down specific provisions for the control and eradication of bluetongue (OJ L 327, 22.12.2000, p. 74)	Article 3
Animal welfare	
Council Directive 91/629/EEC of 19 November 1991 laying down minimum	Articles 3 and 4

standards for the protection of calves (OJ L 340, 11.12.1991, p. 28)	
Council Directive 91/630/EEC of 19 November 1991 laying down minimum standards for the protection of pigs (OJ L 340, 11.12.1991, p. 33)	Articles 3 and 4(1)
Council Directive 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes (OJ L 221, 8.8.1998, p. 23)	Article 4

2.1 Statutory management requirements and their relevance for different farm types

Statutory management requirements do not have the same relevance for different farm types. The table below shows the likely effects of the various requirements on the following farm types: cereals, dairy, beef, pigs/poultry, fruits and olives. Three categories are distinguished.

++	Strong effects
+	Moderate effect
0	Marginal effect envisaged
empty cells	Not relevant

Directive	Cereals	Dairy	Beef	Pigs/ poultry	Fruits	Olives (oil)
Environment						
Conservation of wild birds	++	++	++	0	+	+
Protection of groundwater	+	+	+	+	++	+
Sewage sludge	++				+	+
Nitrates from agriculture	+	++	+	++		
Conservation of natural habitats, wild flora and fauna	+	++	++		+	+
Public and animal health; identification and registration of animals						
Identification and registration of animals		++	++	++		
Identification and registration of bovine animals		++	++			
Identification of bovine animals,		+	++			

Directive	Cereals	Dairy	Beef	Pigs/ poultry	Fruits	Olives (oil)
labelling of beef						
Identification and registration of ovine and caprine animals		+				
Public, animal and plant health						
Placing of plant protection products on the market	++				++	++
Use of hormones		++	++	++		
Requirements of food law	++	++	++	++	++	++
Prevention, control and eradication of spongiform encephalopathies		++	++	++		
Notification of diseases						
Control of foot-and-mouth disease		++	++	++		
Control of swine vesicular disease				++		
Control of bluetongue		++	++			
Animal welfare						
Standards for the protection of calves		++	++			
Standards for the protection of pigs				++		
Protection of animals kept for farming purposes		++	++	++		

Table 4: Relevance of statutory management requirements for different farm types

2.2 Overview of statutory management requirements on farm level

The 19 legislative acts introduce requirements to farmers receiving direct payments. They are summarised in the next table. No reference is made here to requirements that specifically address Member States (e.g. implement monitoring programmes, take account of scientific and technical data).

Statutory act	Statutory management requirements
Environment	
Conservation of wild birds	Measures need to be taken to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Annex 1, including the following measures: creation of protected areas; upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones; re-establishment of destroyed biotopes and creation of biotopes (Article 3). The most suitable territories shall be classified in number and size for the conservation of species in danger of extinction, being vulnerable to specific changes in their habitats, considered rare because of small populations or restricted local distribution (Article 4(1)). Similar measures shall be taken for regularly occurring migratory species not listed in Annex I (Article 4 (2)). Appropriate steps shall be taken to avoid pollution or deterioration of habitats or disturbances affecting the birds (Article 4 (4)). A system of protection shall be established for all birds referred to in Article 1, prohibiting in particular deliberate killing or capturing by any method, deliberate destruction of, or damage to, their nests and eggs or removal of their nests, taking their eggs in the wild and keeping these eggs even if empty, deliberate disturbance of these birds during the period of breeding and rearing, and keeping birds of species the hunting and capture of which is prohibited. The practice of hunting, including falconry, shall comply with the principles of wise use and ecologically balanced control of the species concerned (e.g. no hunting during the period of reproduction or during their return to their rearing grounds) (Article 7). The use of means, arrangements or methods for the large-scale capture or killing of birds shall be prohibited. Also, hunting shall be prohibited from some modes of transport and under some conditions (Article 8).
Protection of groundwater	Direct discharge of substances in List I (e.g. organohalogen, organophosphorus or organotin compounds; mercury and cadmium and its compounds; mineral oils or cyanides) shall be prohibited. Disposal or tipping that might lead to indirect discharge is prohibited as well (Article 4). In addition, the direct discharge of substances in List II (e.g. individual substances and the categories of substances of zinc, copper and nickel; certain biocides; toxic or persistent organic compounds of silicon; fluorides) shall be limited.
Sewage sludge	Sewage sludge may only be used in agriculture subject to conditions for the protection of human health and the environment. Such conditions need to be defined by the Member States. The supply of sludge is prohibited for use on grassland or forage crops if the grassland is to be grazed, as well as on soil in which fruit and vegetables are growing, with the exception of fruit trees and on ground intended for the cultivation of fruit and vegetable crops which are normally in direct contact with the soil and normally eaten raw.
Nitrates from agriculture	Codes of Good Agricultural Practice shall be established with provisions in so far as they are relevant on the periods when the application of fertilizer is inappropriate; the land application of fertilizer to steeply sloping ground or to water-saturated, flooded, frozen or snow-covered ground; the conditions for land application of

Statutory act	Statutory management requirements
	fertilizer near water courses; the capacity and construction of storage vessels for livestock manures; as well as procedures for the application of nutrients that will maintain nutrient losses to water at an acceptable level (Article 4) Action programmes relating to vulnerable zones shall be established with rules relating to periods when the land application of certain type of fertilizer is prohibited; the capacity of storage vessels for livestock manure; limitation of the land application of fertilizers. Measures will ensure that the amount of livestock manure applied to the land each year shall not exceed 170 kg N (Article 5)
Conservation of natural habitats, wild flora and fauna	Promote the maintenance of biodiversity, taking into account of economic, social, cultural and regional requirements. Conservation measures shall be established for special areas of conservation (Article 6). Derogation (deliberate or accidental) of animal and plant species and populations (including temporary habitats) of annex IV of the directive due to farming activities (Article 12d / 13). The German solution of developing a general exception for Farming and forestry according the "good farming practice" has been questioned by the commission.
Public and animal health; identification and registration of animals	
Identification and registration of animals	Administrative requirements are formulated on the identification and registration systems that should be operational. A farmer keeping cattle, dairy, sheep, goats or pigs needs to keep a register stating the number of animals on the holding, as well as an up-to-date record of all births, deaths and movements. A farmer should also supply, upon request, all information concerning the origin, identification and destination of animals that are owned, kept, transported, marketed or slaughtered. A farmer should arrange that animals are identified with an ear tag, to allow that each animal is identified individually along with the holding on which it was born.
Identification and registration of bovine animals	Rules as regards ear tags, holding registers and passports for the identification and registration of bovine animals. Requirements regarding the passports and registers, the kind of information they shall contain, also including up-to-date information regarding transport, allowing tracing names and addresses of the keepers.
Identification of bovine animals, labelling of beef	Labelling of the product and improve transparency of the production and marketing of the products, particularly as regards traceability. All animals should be identified by an ear tag, and no animals may be moved from a holding, unless it is identified through in such manner. Such ear tags are also required for animals imported from a third country (Article 4). In addition, registers and passports are needed to keep an up-to-date register. Passports shall be completed immediately on arrival and prior to departure of each animal from the holding, and the passport needs to accompany the animal (Article 7).
Identification and registration of ovine and caprine animals	Ruling the identification and registration of animals. The system shall comprise the following elements: means of identification to identify each animal; up-to-date registers kept on each holding; movement documents and a central register or a computer database. Access to all information by Commission and Member states must be ensured (Article 3). Period until animals shall be identified, exceptions of identification and different

Statutory act	Statutory management requirements
	possibilities to be used for identification. And the circumstances under which means of identification may be removed (Article 4). Minimum information of an up-to-date register required from each keeper of animals shall keep. Further regulation on the registers format and availability. Each keeper shall supply the competent authority, upon request, with all information concerning the origin, identification and, where appropriate, the destination of animals which the keeper has owned, kept, transported, marketed or slaughtered in the last three years (Article 5).
Public, animal and plant health	
Placing of plant protection products on the market	Requirements regarding the authorisation, placing on the market, use and control within the Community of plant protection products. General provisions are prescribed. These products must be used properly (without unacceptable effects on plants, no harmful effects on human health and no unacceptable influence on the environment). Whenever possible, the principles of integrated control should be applied. Also, requirements are formulated on the classification, packaging and labelling of active substances (Article 3).
Use of hormones	Prohibition of administering to a farm of substances having a thyrostatic, oestrogenic, androgenic or gestagenic action and of beta-agonists. It also applies to the placing on the market for human consumption of such animals, the placing on the market of meat of such animals as well as the processing of their meat (Article 3). Such products might be administered to farm animals, for therapeutic purposes or veterinary medicinal use (Article 4), or for the purpose of zootechnical treatment of veterinary medicinal products (Article 5).
Requirements of food law	The requirements should ensure a high level of protection of human health and consumers' interest in relation to food, taking into account in particular the diversity in the supply of food including traditional products. Food shall not be placed on the market if it is unsafe (i.e. injurious to health or unfit for human consumption) (Article 14). Also, feed shall not be placed on the market or fed to any food-producing animal if it is unsafe (i.e. have an adverse affect on human or animal health; make the food unsafe for human consumption) (Article 15). All stages of production, processing and distribution shall ensure that food or feed satisfy the requirements of the food law which are relevant to their business (Article 17(1). Traceability of food is required at all stages of production, processing and distribution. Business operators shall be able to identify from whom they have been supplied with substances intended to be incorporated into food or feed (Article 18). Producers who consider or have reason to believe that a food is not in compliance with the food safety requirements, shall immediately initiate procedures to withdraw the food from the market. Should the products have reached the consumer, the operator has the responsibility to effectively and accurately inform the consumer of the reason for its withdrawal (Article 19). Similar responsibilities apply to feed business operators (Article 20).
Prevention, control and	Measures to protect human and animal health from the risk of several transmissible spongiform encephalopathies (TSE), including BSE that was first recognised in

Statutory act	Statutory management requirements
eradication of spongiform encephalopa-thies	bovine animals in 1986. Prohibitions are formulated concerning animal feeding. The feeding to ruminants of protein derived from mammals is prohibited (Article 7). Any animal that is suspected of being infected by a TSE is notified immediately to the competent authority (Article 11). Also, measures shall be taken with respect to animals suspected of being infected by a TSE. Such animals shall be placed under an official movement restriction until the results of an examination are known (Article 12). Following confirmation of the occurrence of a TSE measures include that the body of the animal shall be completely destroyed, and an inquiry shall be carried out to identify all animals at risk of TSE (Article 13). Animal health certificates are needed for the placing on the market of animals, or the export of bovine, ovine or caprine animals (Article 15).
Notification of diseases	
Control of foot-and-mouth disease	Control measures are defined that need to be applied in the event of outbreaks of food-and-mouth disease, what ever the type of virus concerned. The presence, or suspected presence, of foot-and-mouth diseases, shall immediately be notified to the competent authority (Article 3).
Control of swine vesicular disease	Control measures are defined that need to be applied in the event of an outbreak of rinderpest, peste des ruminants, swine vesicular disease, bluetongue, sheep and goat pox, vesicular stomatitis, teschen disease, Lumpy skin disease or Rift valley fever. The suspected presence of any of these diseases needs to be notified immediately to the competent authority (Article 3).
Control of bluetongue	Control rules and measures to combat and eradicate bluetongue. Member States shall ensure the immediate, compulsory notification to the competent authority if circulation of the bluetongue virus is suspected or confirmed (Article 3).
Animal welfare	
Standards for the protection of calves	Minimum standards are laid down for the protection of calves confined for rearing and fattening. All holdings that are newly built or rebuilt need to comply with the following rules (unless holdings with fewer than six calves). Calves that are kept in groups need at least 1.5 m^2 for each calf of 150 kg live weight. Calves that are housed in individual boxes or by tethering in stalls, the boxes or stalls shall have walls and their width must be at least 90 cm (plus or minus 10%). No calf shall be confined in an individual pen after the age of eight weeks. Calves that are kept in groups, space allowance available to each calf shall be at least equal to 1.5 m^2 for each calf with a live weight of less than 150 kilogram, at least 1.7 m^2 for each calf with a live weight between 150 and 220 kilograms, and at least equal to 1.8 m^2 for each calf with a live weight of 220 kilograms or more (Article 3) The conditions for rearing calves need to comply with the general provisions laid down in the Annex (Article 4). The Annex has conditions on accommodation, ventilation of the building, periodic inspection of the animals, measures to prevent

Statutory act	Statutory management requirements
	infection, the provision of appropriate diet adapted to their age, weight and behavioural and physiological needs and access to sufficient quantity of fresh water.
Standards for the protection of pigs	Minimum standards are laid down for the protection of pigs confined for rearing and fattening. All holdings shall comply with requirements regarding the unobstructed floor area available to each weaner or rearing pig kept in a group, excluding gilts after service and sows. Space requirements depend on live weight of animals. The construction of or conversion to installations in which sows and gilts are tethered are prohibited, and from January 1, 2006, the use of tethers for sows and gilts shall be prohibited. (Article 3). Also, the conditions for rearing pigs shall comply with the general provisions laid down in the Annex (Article 4.1). The Annex has general conditions regarding noise in buildings, pigs that must be kept in light for at least eight hours a day, animals must be fed at least once a day, permanent access to a sufficient quantity of fresh water (Annex 1).
Protection of animals kept for farming purposes	Minimum standards for the protection of animals bred or kept for farming purposes. The conditions under which animals are bred or kept shall comply with the provisions set out in the Annex (Article 4). The Annex has conditions regarding staffing, inspection, record keeping, freedom of movement, buildings and accommodations, animals not kept in buildings, automatic or mechanical equipment, feed, water and other substances, mutilations and breeding procedures (Annex).

Table 5: Overview of statutory management requirements

Further requirements result from Council Regulation No. 1782/2003, Article 5. These standards also need to be defined by Member States:

2.3 Statutory management requirements and possible control indicators

The control of Statutory Management Requirements (SMR) is a central element of the cross-compliance instrument. Only if the standards are verifiable does it makes sense to implement control measures. In principle, two basic ways of performing controls can be distinguished. These are direct measurements in the form of on the ground control of existing or non-existence of particular requirements or the use of indicators. The latter might be used to examine the degree of compliance with some of the mandatory EU standards.

While direct measurements and control are the most efficient way to control standards in the *public, animal and plant health; the identification and registration of animals* and the *animal welfare* areas, the situation is different for most of the standards relating to the environment. Due to the complexity of agricultural ecosystems and the interrelations involved there is often no direct, easily measurable link between agricultural practices and environmental qualities. In particular when it comes to diffuse pollution issues, cumulative effects or effects that can

only be measured on a landscape level rather than a farm level are difficult to measure directly. In the case of the destruction of natural or semi-natural habitats, protected by national conservation law or by the birds and habitats directive some negative effects might be detectable using aerial photography. However the gradual deterioration of habitats caused by farming operations can only be measured indirectly. The success of any kind of control or auditing system is directly related to how practical the selected indicators are[8]. In any case, the selection of indicators will be a compromise between scientific reliability and the effort needed to measure them[9]. Much research concerning the development of agri-environmental indicators has been conducted in the last two decades and continues (e.g. BioIMPs, EnRisk , IRENA or PAIS projects)[10] but none of the proposed indicators in these projects have been developed for the specific needs of cross compliance i.e. to evaluate compliance with the relevant standards. That means, that for the specific purpose of verifying compliance with environmental standards, new or at least revised standards have to be developed. In its recent report, the European Court of auditors criticised the lack of proper controls on the farming practices and techniques for which Agri-environmental aid is paid. The same arguments might apply to cross-compliance measure in the future if no suitable indicators are found.

The table below shows where indicators are needed and where direct measurements may be preferable for control purpose.

Another issue is the different ways in which member states organise and run the control procedures. These for example, include the type of authority responsible for inspections, the method of selecting the farms to be inspected as well as the different methodologies in use. However this is mainly a problem for the authorities and will not effect the costs and competitive aspects of the farmers directly, so it will not be discussed in detail hereafter.

Directives	Articles	Control (Direct/indicators[11]) and indicator availability for the relevant regulation
Environment		
Council Directive 79/404/EEC (Bird directive)	Articles 3, 4 (1), (2), (4), 5, 7 and 8	**Indic.**
Council Directive 80/68/EEC (Ground water)	Articles 4 and 5	**Indic**
Council Directive 86/278/EEC (Sewage sludge)	Article 3	**Indic**
Council Directive 91/676/EEC (Nitrat directive)	Articles 4 and 5	**Indic and direct**

[8] OECD 2001b+c, Smith et al. 2000, Stein et al. 2001

[9] Bouma 2002, ILU 1999, MAFF 1999, OECD 2001c, Wascher 2000b

[10] Campling et al. 2003, Delbaere 2003

[11] Direct: The relevant directives contain direct control measures or indicators, that allow to draw conclusions.

Indicators: There are no direct indicators to gather from the Directive. Indicators are/ will need to be defined on Member States Level.

Council Directive 92/43/EEC (Habitat directive)	Articles 6, 13, 15, and 22(b)	**Indic**
Public and animal health; Identification and registration of animals		
Council Directive 92/102/EEC (identification and registration of animals)	Articles 3, 4 and 5	**Direct:** Register of all births, deaths and movements of animals present on holding to be held by keeper and supplied to competent authority upon request. Documentation of animals taken to market or collection centre to be held by the operator and supplied to competent authority upon request. Ear tags are supplied for the identification of bovine animals by the competent authority. These should correspond with the number of animals kept on the holding.
Commission Regulation (EC) No 2629/97 (ear tags, holding registers and passports relevant for identification and registration of bovine animals)	Articles 6 and 8	**Direct**: Passports containing the information listed in the directive to be transported with identified animal. Register containing details of births, deaths and movements to and from holding to be held by keeper.
Regulation (EC) No 1760/2000 (identification and registration of bovine animals and labelling of beef and beef products)	Articles 4 and 7	**Direct:** Ear tags applied approved by competent authority applied to all animals over 20 days old. Registers of animal movements supplied by keepers. Registers and passports for all animals to be held by keepers.
Council Regulation (EC) No 21/ 2004 (identification and registration of ovine and caprine animals)	Articles 3,4 and 5	**Direct:** Ear tags and second means of identification applied to all animals. Up to date register kept on each holding listing births, deaths and movements.
Public, animal and plant health (01.01.2006)		
Council Directive 91/414/EEC (placing of plant protection products))	Article 3	**Direct:** Products must be used as specified on the label and where possible using the principles of integrated control.

Council Directive 96/22/EC (prohibition of hormonal or thyrostatic action and of beta-agonists substances)	Articles 3, 4, 5 and 7	**Direct**: Register kept by veterinarian of the type of treatment, the type of product, the date of treatment and the identity of the animal in the case of therapeutic or zootechnical treatments (only allowable uses). Non-renewable prescription made out by veterinarian in case of medicines with androgenous action for use on young fish. Time period between registered use of substance and slaughtering must be greater than the withdrawal period for the substance. Rules for when treated animals may be placed on the market.
Regulation (EC) No 178/2002 (food law, & procedures in matters of food safety)	Articles 14, 15, 17(1), 18, 19 and 20	**Indic**
Regulation (EC) No 999/2001 (spread of diseases)	Articles 7, 11, 12, 13 and 15	**Direct**: Livestock feed should contain no proteins derived from mammals. Appropriate certification of health and origin for animals or their embryos, semen or ova to be exported from or imported to the community. Isolation of holdings with suspected cases of TSE. Destruction of animals with confirmed TSE.
Notification of diseases		
Council Directive 85/511/EEC (foot & mouth)	Article 3	**Direct**: Notification of presence or suspected presence of foot and mouth must be given to relevant authority immediately.
Council Directive 92/119/EEC (swine vesicular disease)	Article 3	**Direct**: Notification of suspected presence of swine vesicular disease must be given to competent authority immediately.
Council Directive 2000/75/EC (bluetongue)	Article 3	**Direct**: Notification of suspected presence of bluetongue must be given to competent authority immediately
Animal welfare		

Council Directive 91/629/EEC (housing of calves)	Articles 3 and 4	**Direct:** Housing must attain minimum standards defined by the directive (such as size). Calves must be treated and housed to standards defined in the annex (these include minimum standards for materials for housing, insulation, heating, ventilation, light, inspections, tethering, feeding and watering).
Council Directive 91/630/EEC (housing of pigs)	Articles 3 and 4(1)	**Direct**: Space given to pigs of each various sizes must be at least that defined in the directive. Pigs must be treated and housed to standards defined in the annex (these include minimum standards for materials for housing, insulation, heating, ventilation, light, inspections, tethering, feeding and watering, prevention of fighting and special conditions for different sexes and ages).
Council Directive 98/58/EC (protection of animals kept for farming purpose)	Article 4	**Direct**: Animals must be treated and housed to standards defined in the annex (these include minimum standards for staff needed to look after them, lighting, sickness, record keeping, freedom of movement, building materials for accommodation, feeding and watering and breeding).

Table 6: Statutory management requirements and control indicators

3 Good agricultural and environmental conditions

The standards and requirements laid down in the 19 regulations and directives, together constitute the statutory management requirements of cross compliance. They are fairly concrete and open to a limited level of interpretation by member states. Any differences between member states are caused by the ways in which they implement and control the standards rather than the requirements in themselves.

For “Good agricultural and environmental condition” (annex IV) however, member states are given considerable freedom of interpretation. While the broad issues tackled are the same for all member states, (soil erosion, soil organic matter, soil structure and minimum level of maintenance) the criteria used to define and instruments used to address these issues differ between countries. While some countries used only 3 criteria (e.g. NL) to define the term others used 14 different criteria (eg. UK Engl.), which in turn has implications for the controls which must be carried out (see study conducted by IEEP). The criteria chosen reflect the differences in national priorities and geo-climatic and ecosystematic backgrounds. The most common measures are the establishment of a certain level of green cover during winter,

the control of unwanted shrub and tree encroachment, and restrictions on machinery use and on stubble burning. In some cases, the selection of measures was probably also guided by how easy they were to control and enforce (see also chapter on indicators and control).

In Conclusion, Some countries used the implementation of GAEC to introduce new requirements to farmers while other used existing standards, which would not cause changes to farm management. This may lead to a situation where the costs and expected effects on competitiveness for farmers will differ considerably between member states, depending on how ambitious they have been in their approach to defining GAEC. The table below gives an overview of the basic requirements under the Annex IV.

Issue	Standard
Soil erosion: Protect soil through appropriate measures	• Minimum soil cover • Minimum land management reflecting site-specific conditions • Retain terraces
Soil organic matter: Maintain soil organic matter levels through appropriate practices	• Standards for crop rotations where applicable • Arable stubble management
Soil structure: Maintain soil structure through appropriate measures	• Appropriate machinery use
Minimum level of maintenance: Ensure a minimum level of maintenance and avoid the deterioration of habitats	• Minimum livestock stocking rates or/and appropriate regimes • Protection of permanent pasture • Retention of landscape features • Avoiding the encroachment of unwanted vegetation on agricultural land

4 Research Agenda

The following section will outline the research agenda for all partners within the Cross Compliance project. The results will be mainly drawn from the experience of national case studies that will be undertaken in the Netherlands (LEI), UK (IEEP), Belgium (KULEUVEN), Italy (CRPA), France (AscA), Germany (Ecologic), Poland (SGGW) and Spain (UPM) and for the non-EU contries in Canada (University of Guelph), New Zealand (Massey University) and the USA (Wallace Center).

The primary focus of the project is to investigate the

- Costs of compliance with existing standards,
- The present degree of compliance with standards at farm level
- The value-added resulting from introducing cross-compliance as a tool to improve compliance with existing standards
- The extra costs resulting from introducing cross-compliance
- The competition effects of compliance to EU standards within the EU and on the world market in the specific context of cross-compliance

Moreover

- Institutional and administrative aspects of control and enforcement are reviewed.
- The experience with certification schemes will be identified and characterised.
- EU standards will be compared with those of the main competitors on the world market to draw conclusions on the competitiveness of EU products on the world market.

To achieve these objectives, test cases will be undertaken. In order to achieve comparable results it will be necessary for all partners to follow the same approach.

Additional to the country reports of EU member states, country reports will also be prepared for the USA, Canada and New Zealand as representatives of the main competitors on the world market. These case studies will follow the same structure. However the main objective of these case studies will be the identification of legislation/ instruments and measures within these countries that are comparable to the EU standards (statutory management requirements and GAEC). Building on this base, conclusions can be drawn on the competitiveness of EU products on the world market.

The case studies must therefore: identify legislation and sum up the comparable standards included within that piece of legislation for each of the 19 statutory management requirements and GAEC and identify the costs of compliance with these standards

For each country case studies will be carried out for two farm types. By this means, every one of the selected 6 Farm types (Cereals, Dairy, Beef, Pigs/Poultry, Fruits and Olives) will be analysed at least twice, so that results may be compared. For cereals and dairy an even broader comparison will be possible.

The following table (Table 7) shows which farm types will be covered by which partner for the case study. Emphasis was given to those farm types that were most affected by direct payments which are cereals, dairy and beef. The selection of farm types for each country was made at the team meeting in Berlin according to national relevance of the farm type and data availability.

Table 7: Chosen farm types for national case studies (tentative)

	Cereals	Dairy	Beef	Pigs (Poultry)	Fruits	Olives
Netherlands		X	X	X		
France	X	X	X			
UK	X	X	X			
Germany	X	(X)				
Spain	X				X	X
Italy	(X)	X				(X)
Poland		X				
USA	Corn/soy	X	X	X		
Canada	X			X		
New Zealand		X			X	

X- Case study will be undertaken, (X) - Case study may be undertaken.

The following table builds on the results from Deliverable 4. It is complemented with the requirements to undertake work in WP6 (assessment competitiveness).

Table 8: Chosen farm types for national case studies

	Cereals	Dairy	Beef	Pigs (Poultry)	Fruits	Olives
Netherlands	X	X	X	X		
France	X	X	X			
UK	X	X	X	X		
Germany	X	X	X			
Spain	X				X	X
Italy	X	X		X		X
Poland	X		X			
USA	Corn/soy	X	X	X	X	

Canada	X			X		
New Zealand		X			X	

X- Case study will be undertaken

Outline of the country reports

The following themes will be the central part of the country reports and the issues mentioned below should be tackled in each of the reports to make the results comparable.

1. **Context**: The first part of the test cases will be an introduction in the national context. Here a general overview of the agricultural production conditions, markets and institutions of the selected farm type should be given including specific requirements resulting from the standards. Please explain your choice of farm type and give basic data/ an overview of the relevance and major data sources for this sector in your country.
2. **Selection of region**: Since there are major differences between the production conditions in the most of the countries, some partners may wish to choose a certain region for their analyses. In this case please give reasons for your choice and indicate how the results can be interpreted/will be representative for the national level.
3. **GAEC-Standards**: Every partner will provide information on how the GAEC requirements were implemented into national legislation. A synthesis of different approaches may be taken from the IEEP report of 2004[12]. Therefore the investigation should focus on a brief overview on the GAEC measures taken and a listing of introduced measures, that go *beyond* the requirements of Annex IV of the Directive and are therefore connected to additional costs of cross compliance (not only costs of compliance to existing standards). If national changes were made after the IEEP report these should be listed as well.
4. **Degree of compliance** on farm level: All Partners will analyse the degree of compliance *before* the introduction of cross compliance and give a first impression about the expected degree of compliance *after* the introduction of cross compliance. This information will be needed for the assessment of costs of compliance and **value added** regarding compliance with standards after the introduction of Cross Compliance. Please also indicate in which fields a lack of compliance is observed and what are the related costs.
    - Methodology: For the assessment of the degree of compliance *before* 2005 a combination of questionnaires, interviews, literature review and data collection can be used. Regarding the collection of data it might be helpful to evaluate the data that was collected to control good farming practice on a national level. For the assessment of the degree of Compliance *after* 2005 we will mainly build on interviews with farmers, farmer associations, administration and other relevant stakeholders. Where controls have already started, it would be of greatest value to sum up and include these findings.
5. **Identification of Costs of Compliance** (see table 8)

[12] Farmer, Martin; Swales Vicky(2004): The development and implementation of Cross Compliance in the EU 15: An Analysis. A report for the RSPB, IEEP, December 2004

6. **Identification of extra costs of cross compliance:** Apart from analysing the costs of compliance with existing standards, the costs of cross compliance which only apply to *new standards* must also be assessed. Since the statutory management requirements are pre-existing legislation, new requirements can only result from the national implementation of GAEC requirements. If new requirements can be identified on the national level, they may be related to costs that will need to be assessed in the next step. If there are no new requirements there will be no extra costs of cross compliance. Moreover presumptions about the further development of Cross Compliance costs (with regard to the next step of enforcement in 2006 and 2007, as well as in regard to possible medium and long term benefits) should be made.
7. **Competitiveness**: The methodology to evaluate competitiveness effects internal and external will be elaborated under WP 5.
8. **Expected Benefits**: Please also respond to possible benefits (environmental, avoided costs, administrative etc.) that result from the compliance with existing or new standards.
9. **Administration**: A brief theoretical analysis of administrative behaviour (incentives and disincentives to detect and punish breaching, impacts on implementation of EU law, transparency of administrative procedures) and information and data about costs of cross compliance will be given.
10. **Control:** Please sum up which administrative mechanisms for enforcement and control of CC have been used. Please estimate the administrative cost for control and punishment.

Table 8: Identification of Costs of Compliance oft the selected farm type

Directive	Relevant Articles	Farm type affected	Data to collect	Scale/ unit	Data source
Council Directive 79/404/EEC (Bird directive) Council Directive 92/43/EEC (Habitat directive)	Articles 3, 4 (1), (2), (4), 5, 7 and 8 Articles 6, 13, 15, and 22(b)	Farms with area in SPA Farms with area in SCI areas	Average yield of forage crops Quality of grass in SFU/ton Average yield of forage crops Quality of grass in SFU/ton	Costs per ha in SPZ areas Costs per ha in SCI areas	Literature Sample farms

Directive	Relevant Articles	Farm type affected	Data to collect	Scale/ unit	Data source
Council Directive 80/68/EEC (Ground water)	Articles 4 and 5	All farm types	Discharge tariffs	Costs/ha	FADN National Statistics Survey
Council Directive 86/278/EEC (Sewage sludge)	Article 3	All farm types	Transport cost of sewage sludge N content of sewage sludge. Quantity of sewage sludge produced per year	Costs per kg N	Farm sample survey
Council Directive 91/676/EEC (Nitrate directive)	Articles 4 and 5	Intensive pigs, beef, dairy and poultry farms, specialised cereal farms	Transport costs of manure Manure treatment costs	Costs per kg pork/ beef /milk	Farm sample survey
Council Directive 92/102/EEC (identification and registration of animals) Commission Regulation (EC) No 2629/97 (ear tags, holding registers and passports relevant for identification and registration of bovine animals) Regulation (EC) No 1760/2000 (identification and registration of bovine animals and labelling of beef and beef products)	Articles 3, 4 and 5 Articles 6 and 8 Articles 4 and 7	Beef and dairy cattle	Time for registration Cost of eartags	Costs per kg meat and per kg milk	Farm sample Herdbook associations

Directive	Relevant Articles	Farm type affected	Data to collect	Scale/ unit	Data source
Council Regulation (EC) No 21/ 2004 (identification and registration of ovine and caprine animals)	Articles 3, 4 and 5	Sheep and goats	Time for registration Cost of eartags	Costs per kg meat and per kg milk	Farm sample Herdbook associations
Council Directive 91/414/EEC (placing of plant protection products)	Article 3	All farm types	Time for registration	Costs per farm	Farm sample
Council Directive 96/22/EC (prohibition of hormonal or thyrostatic action and of beta-agonists substances)	Articles 3, 4, 5 and 7	Beef, pigs, poultry	No data collection needed as the directive does not imply any additional costs		
Regulation (EC) No 178/2002 (food law, & procedures in matters of food safety)	Articles 14, 15, 17(1), 18, 19 and 20	All farm types	Time for registration	Costs per farm	Farm sample
Regulation (EC) No 999/2001 (spread of diseases) Council Directive 85/511/EEC (foot & mouth) Council Directive 92/119/EEC (swine vesicular disease) Council Directive 2000/75/EC (bluetongue)	Articles 7, 11, 12, 13 and 15 Article 3 Article 3 Article 3	Beef, pigs	No data collection needed as the directive does not imply any additional costs for farmers		
Council Directive 91/629/EEC (housing of calves)	Articles 3 and 4	Calves	Investment costs per m2 Feed costs/calf	Costs per kg meat	Literature
Council Directive 91/630/EEC (housing of pigs)	Articles 3 and 4(1)	Pigs	Investment costs per m2 Feed costs/pig	Costs per kg meat	Literature
Council Directive 98/58/EC (protection of animals kept for farming purpose)	Article 4	All livestock farms	No data collection needed as the directive does not imply any additional costs		

5 National case studies on cross compliance and data pre-scan in selected countries

The following case study reports reflect the first attempt of each of the partners to overview cross compliance implementation and possible data availability for the study. Based on this initial information, more detailed analyses will be undertaken over the next months of the project, considering the data needed for the different work packages. The revised work packages will build the bases for the conclusions to be drawn on cost and competitive effects of cross compliance.

5.1 Netherlands

Introduction

Loosely speaking, cross-compliance is a series of standards that farmers must adhere in order to receive the full amount of subsidy payments. As such, cross-compliance, which is an outcome of the Agenda 2000 CAP reform, aims to improve standards in modern farming practices and should prevent further environmental damage.[13] From 2005 onwards, EU member states are required by an EU regulation to introduce cross-compliance for CAP direct payments. However, the fundamental question is whether cross-compliance is widely applied. In 2002, Donald *et al.* wrote that that the compliance with existing environmental, nature, food safety, health, and animal welfare standards is very limited in scope. The Cross-Compliance project should, *inter alia*, provide an answer to the question whether this observation is still valid, or whether there have been (substantial) changes.[14]

The present document is drafted as an input to the Cross-Compliance team meeting in Berlin on 26 and 27 September 2005. The aim of this document is to explore the key features of cross compliance for the Netherlands. In other words, it more or less attempts to lay a basis for an analysis of how mandatory EU standards affect farming practices in the Netherlands and how these standards influence the costs at the farm level. Moreover, this document serves as a first review on data availability regarding (the degree of) compliance with standards and the costs of compliance. It gives a first indication of the data sources that might be useful for the Dutch case-study. We want to emphasise that this document is explorative in its nature in

[13] Although cross compliance was introduced on a voluntary basis for Member States to introduce under the Agenda 2000 reform of the CAP, similar conditions were applied in some European countries before this reform (see Stoate *et al.*, 2001). As part of the reform in 2003, cross-compliance will be introduced from 2005 onwards. New Member States have derogation from cross-compliance. Here, direct payments will only start at 25% in 2004, 30% in 2005 and 35% in 2006 from the present system. It will be increased by percentage steps to reach 100% of the then applicable EU level in 2013.

[14] It should be realised that cross-compliance is not intended as the panacea for environmental problems. Beard and Swinbank, for example, mention four objections to the concept of cross compliance. One of their objections is the administrative complexity.

the sense that it tentatively considers key issues of cross compliance in the Netherlands rather than providing definitive answers. This paper is therefore nothing more than an assemblage of relevant information we have taken from available data sources. However, for the Netherlands, such a disclosure of existing information has not been done before in such a comprehensive manner. This document is intended as a modest first step to fill that gap.

This document is organised along the following lines. We begin in the next section with a description of cross-compliance in the Netherlands. This section addresses both organisational and costs aspects. Section 3 focuses on the degree of compliance with mandatory EU standards. This section is based on information provided by Dutch water boards. Then, in section 4, we present some existing information on food safety and manure legislation. It shows which data is available and where the gaps appear. Section 5 winds up with some final remarks and suggests some actions steps to continue the identification and estimation of the degree and the costs of compliance with existing standards.

The Dutch context

As already indicated in the project design of Workpackage 2, the context of each country has to be taken into account. After all, there are major difference between regions and countries in terms of environmental conditions, agricultural systems, and socio-cultural demands and regulations. This section describes the Dutch context in which cross compliance is applied. That is, the term context refers here to any information that can be used to characterise the Dutch situation with respect to cross-compliance.

This section consists of two parts. First, we begin with a description of how cross-compliance is organised in the Netherlands. That is, we present some of the ideas of the ministry of Agriculture, Nature and Food Quality with respect to cross-compliance. This presentation is based on two interviews we had with representative policy advisors of the ministry. Second, we give a tabular overview of the size of the various costs related to each directive. This overview, however, is tentative and subject to change during the course of this project.

Enforcement of standards in the Netherlands

In the Netherlands, approximately 80,000 farmers have to comply with the 18 standards in the fields of environmental protection, public health, animal and plant health, animal welfare. In order to achieve a 1% level of on-farm checks, the ministry of Agriculture, Nature and Food Quality aims to check – both in 2005 and 2006 – 900 farms for compliance. Apart from these 900 on-farm checks, there is also the so-called ‘spontaneous reporting’. At this moment, it is completely unclear how this mechanism of spontaneous reporting will develop. For example, the ministry has currently not the slightest clue about the size of spontaneous reporting, nor of the type of non-compliance and who may not comply with the standards. The first reporting to the European Commission is scheduled for mid-2006.

Eighty to ninety percent of the directives will be checked by the General Inspection Service (AID) of the ministry. As such, the AID is the central institution in the Netherlands for farm inspections and cross-compliance. The AID send the results of their inspections to the Paying Agency (*Dienst Regelingen*), which ultimately decide what the financial consequences are for a farmer who does not comply with the cross-compliance standards. In addition to the AID, regional authorities are also involved in enforcing cross-compliance. However, the co-operation between the AID and the other authorities, such as municipalities and water boards, sometimes seems to conflict with EU legislation and requires further research.

Just as an indication, Table 1 gives some insight in the inspections that the AID conducted in 2003 and 2004 with regard to animal welfare.

Table 1: On-farm inspections of compliance with animal welfare

		Number of offences	
	Inspection in hours (2004)	2003	2004
Cattle	1,000	45	37
Pigs	3,100	37	91
Sheep and goats	1,200	61	5
Poultry	70	1	2
Horses	Not separately available	9	2

Source: AID, 2004.

The on-farm inspections that are mentioned in Table 1 include cross-compliance but are not always necessarily linked to it. In other words, these inspections can also be conducted for other reasons. With respect to cattle, for example, the AID carried out on-farm inspections in order to check the identification and registration of these animals – which is one of the 18 directives in cross-compliance – but also to control the compliance with the so-called 'calf directive' (*Kalverenbesluit*). In addition to the information presented in Table 2.1, the annual report of the AID includes also figures on numerous other inspections that the Service conducted in 2004[15]. It shows, for example, the number of offences with respect to the use of fertilizers, pesticides, and animal health. However, in these figures not only on-farm checks are included, but also inspections of other parties, such as intermediaries and the transport sector.

A rough idea of costs

One of the objectives of the Cross-Compliance project is to analyse the costs of compliance with existing EU standards. Table 2 gives, for the Netherlands, a first insight into the

[15] see AID, 2004

proportion of the various categories of costs, as described in the project design of Workpackage 2. It is almost needless to say, but the costs categories in Table 2 refer to the various costs that farmers, and thus not national authorities, might incur in complying with the cross-compliance standards.

Table 2: Directives and their estimated proportion of costs

	Directive	Investment costs	Variable costs	Reduced yields	Factor costs	Administrative costs
	Environment					
1	Conservation of wild birds			+	++	
2	Protection of groundwater		++		+	
3	Sewage sludge		++			
4	Nitrates from agriculture	+	+		+	+
5	Conservation of natural habitats, wild flora and fauna			+	++	
	Public and animal health; identification and registration of animals					
6	Identification and registration of animals					++
7	Identification and registration of bovine animals					++

Table 2: Directives and their estimated proportion of costs (continued)

	Directive	Investment costs	Variable costs	Reduced yields	Factor costs	Administrative costs
8	Identification of bovine animals, labelling of beef					++
	Public, animal and plant health					
9	Placing of plant protection products on the market		++			+
10	Use of hormones			++		
11	Requirements of food law		++			
12	Prevention, control and eradication of spongiform encephalopathies		++			+
	Notification of diseases					
13	Control of food- and mouth disease		++			
14	Control of swine vesicular disease		++			
15	Control of blue tongue		++			
	Animal welfare					
16	Standards for the protection of calves	++				
17	Standards for the protection of pigs	++				
18	Protection of animals kept for farming purposes	++				

Legend:++ 'High' costs envisaged

+ 'Moderate' costs envisaged

The challenge of the Cross-Compliance project is to fill in Table 2 with real cost data. However, before continuing with the availability with cost data, we first consider in the next section the degree of compliance.

The degree of compliance

The Association of Water Boards ('Unie van Waterschappen') does periodically monitor loading of nutrients and pesticides to surface water. Measures need to be taken in the Netherlands to reduce emissions from pesticides, partly building on the Pesticides Act ('Bestrijdingsmiddelenwet'). A first progress report was published in 2004[16]. Controls are undertaken according to fields and holdings. Some results on the degree of compliance with the standards are presented in Table 3.

Table 3: Degree of compliance by controls according to lots

	Number of inspections	Percentage to the total number of inspections (%)
Number of inspections	9,948	
Number of offences	854	8.6%
Completion by administrative law	892	8.9%
- of which warnings	714	7.2%
Completion by criminal law	39	2.3%

Source: Unie van Waterschappen (2004).

Table 4: Degree of compliance by sector

Sector	Number of inspections	Number of exceedence	Share of total exceedence (%)
Arable crops	4506	390	8.7
Vegetables in the open	77	6	7.8
Summer flowers	2	0	0
Fruit crops	240	35	14.6
Ornamental	81	10	12.3
Bulb	62	1	1.6
Livestock	701	80	11.4

[16] Unie van Waterschappen, 2004

Total	5669	522	9.2

Source: Unie van Waterschappen (2004).

Data availability

- A first estimate of environmental costs can be obtained from the Netherlands Environmental Assessment Agency. We have contacted the responsible persons at this agency, and some information is provided. Detailed figures are available on the annual costs for investments made, operational costs and expenses related to environmental themes (costs in million euro). The database seems relevant for the implementation of manure legislation and expenses related to the implementation of pesticides legislation. Detailed measures that result from the implementation of manure legislation include storage, (emission-reduced) disposal and processing of livestock manure and levies of manure. In addition, the system includes expenses related to measures that are taken to control any harmful effects of pesticides in water, such as equipment to apply pesticides, the use of buffer strips and the recirculation of water in glasshouse horticulture.
- The Farm Accountancy Data Network in the Netherlands includes detailed figures on variable costs related to manure policies and the control of pesticides.
- Costs related to manure legislation in the Netherlands that are recorded in FADN include:
    - Gross costs of disposal of livestock manure (euro per ton of livestock manure per holding);
    - Levies on livestock manure (euro per holding);
    - Net revenues from livestock manure (euro per holding);
    - Costs on storage of manure (euro per holding);
    - Total investments (keuro per holding), and the share of storage of manure relative to total investments. Here, expenses related to investments into storage of manure are translated into annual costs (euro per holding);
    - Costs on processing of manure (euro per holding);
    - Administrative costs (no details available yet from FADN).
    - Factor costs related to labour requirements for nutrient management (not in FADN).
- Costs related to pesticide legislation in the Netherlands include:
    - Ban on chemical compounds for use in certain crops. A substitute may be more expensive (or require more labour). Compliance costs could be derived from this, but not avaiable in FADN.
    - Spatial constraints might arise (e.g. introduction of buffer strips) that might reduce yields or lower production. Empirical evidence is not available yet. Here, a normative approach might be adopted.

- Expenses of chemical pesticides (euro per holding, relative to active ingredients from products used). Total expenses of biological control.

- Costs of food safety improvements include compliance costs, social welfare losses and transitional social costs. Food safety measures are taken at different stages of the agrifood chain, including primary production, processing and retailing. Food safety of farm milk, for example, is controlled through the Quality Assurance System of Farm Milk Supply[17]. Valeeva (2005) examine costs of improving food safety in the dairy production chain. She examined the costs for improving food safety in the dairy production chain. Considerable improvements (some 65%) could be achieved at relatively low costs (4.27 euro per ton of milk), and they are fairly evenly distributed across the production chain. Further improvements could increase costs to more than 40 euro per ton of milk, with a more than 60% share in primary production.

Final remarks

- FADN data in the Netherlands provide details on the expenses made for compliance with environmental standards. Available data on costs related to specific investments in the environment remains poorly developed. This also applies to data related to animal welfare issues.
- Some information is available on the administrative costs related to the identification and registration of animals.
- Product boards report some data on food quality rules. Quality assurance in the dairy sector is undertaken by the Netherlands controlling authority for milk and mik products[18].
- Measures that mainly reduce yields (lower production) essentially reduce revenues, but do not increase production costs. Not much evidence is available here.

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5.2 Belgium

Introduction

The objective of this report is to carry out for Belgium:

- A test case with respect to the compliance with standards, costs of compliance and improvement in the degree of compliance with existing standards resulting from cross-compliance;
- A first review on data availability regarding compliance with standards and the costs of compliance with the areas of legislation from representative data networks, engineering data, budgets and survey results;
- A review of data availability from research and assessments by the Ministry.

An important note is that the federal nature of Belgian complicates the implementation of standards as the various issues may be part of a different governance level. The Belgian state consists of three regions: the Flemish Region, the Walloon Region and the Brussels Region. Competencies relevant to the area of standards in agriculture are scattered as follows:

- Agriculture is a regional competence, such that the overall co-ordination and implementation of cross-compliance standards are done by the Agriculture Ministries of the regions.[19]
- Environment and thus the control of environmental standards, is also a regional competence, but the responsibility of another administration: the Environment Ministry.
- Health, animal welfare and food safety are federal (Belgian) competencies that are part of the federal department of Public Health, Safety of the Food Chain and Environment[20] and controlled by The Food Agency, which works independent of the department.

[19] There is also a federal minister of agriculture as the EU only recognizes countries. However, her only competence is the coordination of the viewpoints of the regional ministers in the European Council.

As a result, most of the material in this paper applied to the Flemish Region.

The remainder of this paper is as follows. Section 2 summarises the state of the art of the implementation and monitoring of cross compliance. Section 3 and 4 provide case studies of cost assessments. Section 5 concludes the paper.

State of the art [21]

The implementation of the 19 cross compliance directives is phased and will proceed as follows:

- 1 January 2005: 'environment', 'public and animal health; identification and registration of animals'
- 1 January 2006: 'public, animal and plant health', 'notification of diseases'
- 1 January 2007: 'animal welfare'

Most directives have been translated into Federal and regional legislation. However, On January 10, 2004, there were still 44 unresolved issues with the European Commission.

In Flanders, the implementation and monitoring is in the hands of the ABKL (Administratie Beheer en Kwaliteit van de Landbouwproductie), the administration that is also in charge of the First Pillar payments. However, the ABKL has the choice between doing controls itself or by receiving the results of other controlling institutions.

The controlling institutions that support the ABKL can be categorized in three groups:

- Category I: Specific to agriculture / systematic: These controls are carried out specifically concerning farmers and in a systematic way. An example is the VLM (Flemish Land Society) that monitors the nitrates directive. To fit with the cross compliance monitoring procedure, no changes have to be made.
- Category II: Not specific to agriculture / not systematic: These involve ad hoc controls that are not specific to farmers. These include AMINAL-Afdeling Milieu-inspectie, AMINAL-Afdeling Natuur and OVAM that monitor the other environmental directives. These institutions will have to adjust to be able to carry out their monitoring in the framework of cross compliance.
- Category III: Not specific to agriculture / systematic: These involve the controls by the The Food Agency (officially: Federal Agency for the Safety of the Food Chain), that integrates all control and inspection services of the food chain, from the farm to the table, in one single administrative organisation. Since most of the monitoring is already in place, few adjustments need to be made.

[20] The federal competencies related to the environment only involve energy issues. All other issues are regionalised.

[21] Bas and Van Gijseghem (2004)

The monitoring and evaluation of the implementation and the control is carried out by AM&S, the Administration Monitoring and Study.

With respect to the question of data availability, the official assessment procedures have only recently been started up. Only for those directives that have been put in place earlier (e.g. Nitrates Directives), detailed databases of compliance exist.

In general, no dedicated research has been carried out concerning the costs of compliance, neither by the administration itself, nor by research institutions. However, there is a limited amount of ad hoc studies, two of which we report in the next sections. The virtual absence of data and studies is primarily the result of the small research capacity in Belgium. The current situation is as follows:

- The Agricultural Economics Institute has been split up between the Flemish and the Walloon Region. The former still exists, but has only 5 tenured researchers; the latter has been closed down and integrated into the Walloon Ministry.
- Three Universities (Leuven, Gent and Louvain-la-Neuve) have an Agricultural Economics Department. However, these Departments are generally small (typically a faculty of 3) and do not carry out cost studies.
- Bookkeeping agencies are very small and have no research capacity. The largest agency is the Farmers Union (Boerenbond). However, the Boerenbond has only a very small research capacity.

Case study 1: Nitrates in agriculture and the costs of manure processing [22]

A first case study relates to the problem of nitrates in agriculture and specifically to the cost effects of the obligation to process manure in the Belgian hog sector. A recent study combined engineering data on manure processing costs with data on manure production and FADN data to assess the impact of this obligation on competitiveness using 1998 data.[23]

We only report here the results of the base scenario that assumes a relatively low processing cost of 12.5 euro per tonne, as this was the original aim of Belgian policy. However, a best practice study proposes a range from 19 euro (organic processing) to 37 euro [24].

Cost effects piglets

FADN data reveal an average production cost of € 30, labour costs excluded. Labour costs are € 12.6 per piglet and are calculated as follows. The comparable or calculated income is €

[22] Lauwers et al. (2003)

[23] Other studies have been carried out using the same approach, such as Vervaet et al. (2004) and Carlier et al. (2004, 2005).

[24] Feyaerts et al., 2002

30,000 per labour unit per year. An average piglet farm has 1.34 labour units for 177 sows (present on average). Assuming 18 piglets per sow per year, a total of € 40,200 has to be earned to produce 3,186 piglets. Hence, the average labour cost is € 12.6 per piglet. Total cost per piglet are thus € 42.6 per piglet.

The manure processing costs is the product of the per unit processing cost and manure production. The manure production per sow present on average (SPA) is as follows:

Zogende zeugen(2*30 days) = 0.164 per SPA	* 5.8 t per year = 0.9512 tonnes
Niet-zogend = 0.836 per SAP	* 2.9 t per year = 2.4244 tonnes
Gespeende biggen (18*40 days) = 2 per SPA	* 0.6 t per year = 1.2000 tonnes
Opfokdieren = 0.12 per SPA	* 1.3 t per year = 0.1560 tonnes
Beren = 0.03 per SPA	* 3.2 t per year = 0.0960 tonnes
	= 4.83 tonnes

Assuming a unit processing cost of € 12.5, this represents a cost of € 60.4 per SPA. This means a processing cost of € 3.35 per piglet. As a result, the cost of piglet increases with 8% from € 42.6 to € 46.

Cost effects pork, closed system

A piglet represents 21% of the final product (taking deaths into account). Given a cost (labour costs excluded) of € 30 per piglet, a 22 kg piglet contributes € 30 / 22 kg * 0.21 = 0.286 €/kg meat. To produce a kg of meat one needs 2.45 kg of feed costing 0.2 €/kg or 0.49 €/kg meat. Other costs are € 40 per hog (present on average, HPA) or 0.148 €/kg meat assuming a yield of 270 kg per hog. Total costs excluding labour are thus 0.906 €/kg meat. The average closed hog farm has 156 SPA and 886 HPA with 1.43 labour units. For 270 kg meat per HPA and an income of 30,000 euro, total income has to be 42,900 euro for 239,220 kg of meat or 0.179 €/kg meat. Hence, total cost is 1.085 euro per kg meat.

The manure production per HPA is 1.3 tonnes, such that the manure processing costs are 16.25 euro per HPA or 0.06 euro per kg meat. Combined with the manure processing costs of the piglet, which is equal to € 3.35 euro/22 kg * 0.21 = 0.032 euro per kg meat, this results in a total processing cost of 0.092 euro per kg meat. As a result, the cost of a kg meat increases with 8% from 1.085 euro to 1.177 euro.

Cost effects pork, open system

In an open system piglets are purchased at a market price of € 46 (transaction costs included). Hence, the contribution of the piglet in the cost equals 46 euro/22 kg * 0.21 = 0.439 euro per kg meat. Assuming the same costs as in the closed systems, this results in total cost excluding labour of 1.077 euro per kg. A specialised open hog farm has 1132 HPA and 1.19 labour

units. To earn 35,700 euro the farm produces 305,640 kg of meat resulting in a labour cost of 0.117 euro per kg of a total cost of 1.194 euro per kg meat.

The manure processing cost equals 0.06 euro per kg meat resulting in an increase of 5% of total costs from 1.194 to 1.254 euro per kg meat.

International comparison

A Dutch comparative study in five countries[25] identified three groups of countries (costs for 200 in euro per kg): low cost (Spain, €0.93), medium cost (The Netherlands €1.05, Denmark €1.07, France €1.09) and high cost (Germany €1.37). Bondt et al. (2002) estimated the additional cost due to food safety, animal welfare and environment at 0.05 euro per kg in all countries, except for The Netherlands with 0.09 euro per kg. As the calculated manure processing costs in Belgium are estimated at 0.09 euro per kg, total additional costs (incl. animal welfare, ammonia reduction, food safety) will be considerably higher than in the competing countries.

Impact on farm income

The average farm income per hog is estimated at 150 euro per SPA. A manure processing cost of 60.4 euro per hog represents 40% of total income. However, FADN data reveal a wide spread of farm income ranging from -150 euro per hog to more than 500 euro per hog.

Case study 2: GAEC and the costs of erosion control [26]

A second case study is related to the costs of erosion control. Farmers with erosion sensitive land are obliged to implement at least one erosion measure. A recent engineering study aimed to produce a cost-benefit analysis of reduced tillage as erosion measure. Reduced tillage is a set of measures involving ploughing the soil without turning the soil and requires a set of dedicated machinery.

The survey was not representative, but limited to the six farmers joining the larger project on erosion control and making some of their field available for tests. In total eight fields were monitored. Costs were investigated by means of a questionnaire. Benefits were measured by the scientists in the field. As an example we only report the results of one field where sugarbeet was planted and where conventional tillage was compared to direct sowing.

Variable costs consist of custom work (325 euro per ha) and product-related costs (660.13 euro per ha), such as seeds, fertilizers, pesticides, etc. Both costs were found the same for the

[25] Bondt et al., 2002

[26] Gillijns et al. (2004)

two sub-fields. Rather than calculating the fixed costs (depreciation, labour, etc.), the opportunity costs were calculated. All actions (ploughing, sowing, applying fertiliser, pesticides, etc.) were identified per field and valued by the market price if these actions were performed by custom workers. This resulted in a total cost of 314 euro per ha for direct sowing and 449 euro per ha for conventional tillage.

Net yields were lower under direct sowing (58.81 tonnes per ha) compared to conventional tillage (66.75 tonnes per ha), while sugar content was comparable (18.8%) resulting in higher sugar yield for the conventional tillage (12.68 tonnes per ha versus 11.05 tonnes per ha). At a price of 48 euro + 0.09 * (sugarcontent – 16) this results in total sales of respectively 3517.17 and 4049.31 euro per tonne.

Combined, farm income of the direct sowed field was almost 18% lower (2532.04 euro per tonne) than the income of the conventional tillage (3064.18 euro per tonne). However, this results was not consistent as in another test field the reverse was found. In other words, the results of the cost-benefit analysis were found to be highly variable according to the field and to the management pratices used by the farmer.

Conclusions

The compliance with standards and its evolution are well documented as Belgium and its member states were among the first to have a Food Agency, obligatory registration of animals and a very detailed monitoring system related to nitrates in agriculture.

However, dedicated data and specific research on the costs of compliance are virtually absent. This is mainly due to two reasons:

- The relative novelty of and thus lack of experience with the concept of cross-compliance in Belgium;
- The small research capacity and even absence of agricultural economics institutes, leading to fragmented research often depending on personal preferences.

Nevertheless, as shown by a series of studies based on FADN data related to the nitrates problem in the pig finishing sector, a realistic simulation of the costs of compliance is not impossible. It is rather a matter of digging up, linking and translating data from different sources.

From a sectoral point view, the dairy, beef and pigs sectors are well represented. Cereals and fruits are not well represented and face data availability problems.

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Experts

Name and affiliation	**Field**
Gillijns, K. Catholic University Leuven	Research, Erosion control
Lauwers, L. Centre for Agricultural Economics	Research, Nitrates from agriculture
Struyf, D. VLM, Flemish Land Society	Implementation nitrates from agriculture
Van Gijseghem, D. AM&S, Flemish Ministry of Agriculture	Study and monitoring, head of unit
Van Ginderachter, N.	Implementation cross-compliance, head of unit

ABKL, Flemish Ministry of Agriculture

Van Oost, K. Implementation cross-compliance

Cabinet, Flemish Minister of Agriculture

Van Temsche, P. Director

The Food Agency (federal government)

5.3 UK

Introduction

This chapter describes the data available that could be used to assess the various costs associated with meeting the cross compliance standards. Information is also presented on the data that may be available to assess changes to the level or degree of compliance with the range of cross compliance measures. An example is also given of the anticipated costs expected to arise from meeting two of the GAEC standards.

The situation is examined for England, rather than the UK as a whole. The devolved administrations in Scotland, Wales and Northern Ireland are responsible for enforcing and monitoring compliance in their respective territories, and it has therefore been necessary to narrow the focus to England in order to produce a more focussed analysis.

The first section gives a brief overview of the context for cross compliance in England. The next section considers data availability, and the final section provides an example of the costs farmers may have to meet in order to comply with two of the English GAEC standards.

Context of the introduction of cross compliance in England

In England, the Department for the Environment, Food and Rural Affairs (Defra) is responsible for the policy aspects of cross compliance, whilst the Rural Payments Agency (RPA) is responsible for implementation. The RPA is the Single Competent Control Authority for cross-compliance in England. There are a number of delegated agents with responsibility for conducting inspections including the Environment Agency (EA) and English Nature.

The four UK administrations have been, in comparison with other EU15 Member States, rather ambitious in setting a large number of SMR and GAEC measures[27]. In England farmers need to comply with up to 19 separate GAEC measures. These measures relate to soil management, heavily emphasised in Annex IV of Regulation 1782/2003, and the maintenance of habitats and landscape features, which includes measures relating to ancient/archaeological monuments, public rights of way (footpaths and bridleways), stone walls and hedgerows. The GAEC standard that asks farmers to create a 2m protection zone next to hedgerows and watercourses was particularly controversial to some farmers and lobby

[27] For a detailed comparison of measures in the UK versus other EU Member States refer to:

Farmer, M. & Swales, V. (2004) The development and implementation of cross compliance in the EU-15: An analysis. A report for the RSPB.

groups. With this GAEC standard farmers are asked not to cultivate or apply fertilisers, manure of pesticides to land within 2m of the hedgerow or watercourse or within one metre of the top of a bank of a watercourse. Farmers were concerned about the cost implications of this measure, and this is discussed more in the section below on the costs of cross compliance.

Defra also launched two new agri-environment schemes in England in spring 2005, which will build on the baseline set by cross-compliance. The schemes are called Entry Level Stewardship (ELS) and Higher Level Stewardship (HLS), and farmers will be rewarded financially for the active management of specific landscape features and habitats. Defra has set a target of 80% of farmers to enter the ELS. The added income from participating in the agri-environment schemes could assist offset any costs of meeting cross compliance standards.

It is also worth noting that the UK was among the first countries to be audited by the European Commission for its implementation of monitoring and control procedures for cross-compliance. This may be interpreted in two ways. Firstly, if the UK was aware of the audit for sometime, Defra may have faced some pressure to put in place a suitable control system sooner than it might otherwise have. Alternatively, the Commission, being aware that the UK countries have put in place a reasonably good set of cross-compliance measures, may have chosen the UK so that the hopefully good results of the audit reflect well on the tool of cross-compliance.

Data Sources to Assess Level of Compliance and Costs of Meeting Cross Compliance Standards

Data sources to assess the level of compliance

There are two data sources which the project team could utilise to assess the level of compliance. The first is the information made available through the official inspection and enforcement procedures. The second is the data that should be made available through the CAP Observatory, a body that will analyse the impacts of the CAP reform in England.

Monitoring and Evaluation – Enforcement of standards in England

There are a number of bodies within England responsible for controlling and enforcing the SMRs and GAEC standards. The information made available by the relevant authorities will be relevant to assessing the approximate overall level of compliance, and in cases of non-compliance, indicate where the costs of compliance may lie.

In England, the co-ordination of inspection procedures is relatively complex. Defra has stated that there are currently 12 specialist agencies (plus local authorities) enforcing 19 Statutory Management Requirements[28]. There are also, potentially, a further 6 enforcement agencies for Good Agricultural and Environmental Condition. To give an idea of the possible complexity of the inspections, there are about 280 Local Authorities in England with responsibility for checking some of the SMRs (e.g. Birds Directive)[29]. Each local authority differs in its resources, staffing levels and management, all of which may bear an influence on the rigour of inspection and enforcement.

[28] Defra – CAP reform website: www.defra.gov.uk/farm/capreform

[29] This information is based on that presented by Defra in November 2003 at a seminar on cross-compliance organised by IEEP. The information may therefore be out of date now.

Other agencies are responsible for other environmental problems. For example, the Environment Agency (EA) in England is responsible for assessing compliance with the Nitrates Directive, the Groundwater Directive and the Sewage Sludge Directive. The EA has assessed the costs of conducting cross-compliance inspections in addition to those it currently conducts for the mentioned Directives. In early 2004, the EA estimated that it would cost an extra £130,000 (approximately €190,000[30]) per annum per Directive to conduct control visits which incorporate cross-compliance checks and which last two days each[31]. This is an example of the costs that need to be borne by the administration.

In order to help reduce the number of agencies involved in cross-compliance inspections, Defra has set up an Inspections Coordination Board. The Board is designed to ensure that the number of inspections is minimised and both inspection agencies and stakeholders will be present on the Board. The minimisation of the overall number of inspections is in tune with Defra's aim to progress towards a 'smarter, lighter touch, risk based approach' to the regulation of farming. Most farms inspected will be sampled on the basis of risk, and some will be sampled randomly. Whilst the minimum inspection rate is 1%, many of the SMR standards are already inspected at a higher rate, as required by the respective Regulations or Directives, and will continue to be inspected at this higher rate. For example, farms will be inspected at a rate of 10 per cent for the SMR concerning the identification of cattle. Inspections had just begun as of November 2005.

The number of farmers facing sanctions as a result of non-compliance will indicate the level of compliance. In the first instance, following the identification of a case of non-compliance, a farmer will receive a formal warning letter. Stronger sanctions will not necessarily be applied where minor technical breaches of the rules have occurred. In severe cases of non-compliance farmers are likely to face a financial penalty, and only in a small minority of cases the prospect of criminal prosecution.

It is currently unclear as to whether the RPA will make this information available, although it has been indicated to the researchers that such figures may be able to be obtained. It is hoped that information on the number of warnings issued and penalties applied, as well as details of the infringement made, will be made publicly available to allow for scrutiny of the effectiveness of cross-compliance by the wider policy audience. There is a question as to whether this information will be made available in the timeline dictated by this study, and, as a result, it may be too early to be able to assess the true level of compliance. There may also be technical difficulties with using this data to estimate the level of compliance among all those claiming the Single Farm Payment. There are likely to be many difficulties in extrapolating this data as the sanctions applied will depend, for example, on the type of farm (arable or livestock) and the attitude of the farmer towards achieving compliance.

The development of the cross-compliance inspection and enforcement roles and responsibilities of the various delivering bodies will be carried out as part of the 'modernising Rural Delivery Programme' and will be related to the development of the new Integrated Agency (Natural England). This Agency brings together English Nature, parts of the Countryside Agency and most of the Rural Development Service to form a large, new independent statutory body that will be responsible for protecting the natural environment.

[30] The exchange rate used throughout this chapter is £1=€1.47

[31] This information is based on that presented by EA in April 2004 at a seminar on cross-compliance organised by IEEP. The information may therefore have been updated since then.

Evaluation of Environmental Standards – the CAP Observatory[32]

The Agricultural Change and Environment Observatory Programme, also known as the 'CAP Observatory', commenced in July 2005. The main function of the Observatory is to ensure the availability of relevant information to inform the monitoring and evaluation of the impacts of the CAP reform on the environment. The link between changes to farm level practices and changes, both beneficial and detrimental, to the environment will be monitored and analysed. The Observatory was set up be Defra and will co-ordinate data from a range of sources so as to identify significant trends in farming patterns/practices and their resulting environmental impacts. According to the official press release, the Observatory will make data available at a suitably disaggregated level to provide information on impacts at local and national levels. The Observatory will cost £1m (or €1.4m) to run over three years.

Potentially, the Observatory could provide a wealth of data on the level of compliance with the SMR and GAEC standards. By gauging the level of non-compliance with various measures, those measures which bear a higher relative cost to farmers can be identified. However, some questions remain to be answered as to what data will be available and when.

Data Sources to Assess the Costs of Compliance

There are a number of sources we can look at to get an idea of the potential costs to farmers of complying with the various cross compliance measures. These sources include:

- Defra (2004) The Final Regulatory Impact Assessment of Options or the Implementation of Cross Compliance – Good Agricultural and Environmental Condition
- Reponses to Defra's public consultation on cross-compliance
- Various items of research conducted following the introduction of the SFP in 2005.

There are also a range of data sources which could be used to identify the costs of compliance following the introduction of cross compliance in January 2005. These sources are:

- The Farm Business Survey (FBS)
- The Farm Management Pocketbook
- The results of newly commissioned research.

Assessing the Potential Costs

a. Defra's Regulatory Impact Assessment (RIA)

This RIA was conducted in 2004 and examined the economic impacts to both public accounts and farm businesses of each GAEC measure. The environmental impacts, broader rural impacts, regional impacts and enforcement issues were also considered for each GAEC. A RIA was not conducted for the SMRs as Defra felt that there would be no additional costs as these requirements are based on pre-existing legal requirements.

Briefly, the RIA found the following:

- The on-farm costs of cross compliance are difficult to precisely estimate because of the variability of farm businesses. Implementation costs will vary from farm to farm and be dependent on the way farmers adapt their businesses to the SFP, as well as the opportunities and obstacles other factors such as farm type, size and geographical

[32] Information gathered from R&D Newsletter Vol 13 Dec 2004 and from personal contact with Defra.

location present. Other variables include the number of features on the farm which are present to GAEC e.g. total length of hedgerows and water features.

- There should be no costs involved in meeting the SMR standards as they are based on pre-existing legal requirements. This is the presumption of Defra, however in reality there may be many farmers not meeting the various SMR standards. There therefore may be eventual costs to some farmers who are found not to be complying.
- A case study of 27 farms was undertaken in 2004. Most of the farmers interviewed had not yet considered the full impact of decoupling on their farm businesses and none had made changes to their business as a result of CAP reform.
- The costs of cross compliance need to be weighed up against the cost/administrative savings made by simplifying bureaucracy in terms of introducing the Single Farm Payment and an expected increase in (some) farm incomes as a result of decoupling.
- Some of the cross compliance costs now are an investment for the future as they reduce the cost of forthcoming requirements – particularly the Water Framework Directive (WFD).
- The costs of cross compliance are expected to be in the region of £40m (about €58m) pa in England assuming that farmers are not meeting any of the requirements currently and that they do not adjust their businesses to minimise costs. It is not clear whether this is the cost to farmers, the exchequer or both. Furthermore most farmers should be complying with the standards and therefore this cost may in reality be lower. Defra estimates that following the CAP reform (farm) incomes will increase by £100-£150 million (about €146-€220m) per year. This figure does not account for the costs of cross compliance.
- Cross compliance costs equate to about 0.5% of total farm costs and 1.5-2.5% of the single payment. It should be noted that these figures are based on a vast range of assumptions and will vary due to the issues raised above in point 1.
- The two cross compliance measures that are most likely to have a notable economic cost are the Soil Management Plan and the requirement for 2m field margins. The estimated costs are considered as an example in the following section.

b. Reponses to Defra's public consultation on cross-compliance

Defra received over 460 responses to its consultation on cross compliance. Many bodies responded to the consultation from individual farmers to large, sectoral interest groups. IEEP was privileged to analyse all the responses to the consultation, but can only comment here on those that are publicly available and the report we wrote for Defra after analysing the consultation responses. In IEEP's report on the consultation responses[33] it was evident that many respondents felt that the measure for 2m field margins would be better suited to the UK's Entry Level agri-environment scheme rather than cross-compliance. About 20% of responses estimated the cost implications of the measure, ranging from £15/ha (about €22) to £50/ha (about €74) for larger farms with many hedges. Various NGOs estimated the cost at between £3.50 (about €5) and £7.72 (about €11) per metre of hedgerow. The latter figure was touted by the National Farmers' Union[34] (NFU) who stated in their consultation response that

[33] Available from:

http://www.defra.gov.uk/corporate/consult/capsingle-payment/responses.pdf

[34] NFU (2004) Policy Statement: Defra consultation on cross-compliance in England http://www.npa-uk.net/ds_portal/library/X-Compliance%20NFU%20main%20response.doc

by 'Using Defra's own cost estimates for income foregone used in its submission to the European Commission for approval of the Environmental Stewardship scheme, the income foregone of these margins would be £7.72/100 metres. Therefore, the cost for larger farms of this measure alone would run into thousands of pounds.' Other responses to the consultation could be collected and an analysis from a cost perspective performed.

Assessing the Real Costs of Cross Compliance

a. Various research work conducted following the introduction of the SFP in 2005

A small number of studies have been conducted which assess farmers' reactions to the SFP. The two reports summarised here are by the National Trust and ADAS (a rural consulting firm).

The briefing by the National Trust[35] contains an initial analysis of the impact and implications of CAP reform on upland farming in England. The analysis is based on a survey of 60 National Trust hill farms, with the report starting that many farm businesses are unviable even with the Single Payment. There could therefore be a wide range of monetary and non-monetary (environmental, social) costs resulting from some farmers' inability to continue farming and meet even basic cross compliance standards. Key factors that need to be considered are (a) overall farm size (larger farms receive more income under an area payment scheme) (b) proportion of land within the moorland line (where payments are higher) and (c) historic stocking levels (those with historically larger numbers of livestock may received less following the move to the SFP if paid on an area basis).

The second report, by ADAS for English Nature, looked at farmers' intentions in response to CAP reform for changes to their cattle and sheep enterprises. A second report looked into the reasons behind the changes that farmers are planning[36]. The second report presents a mixed picture, and any costs in relation to cross compliance are unclear. Some are looking to the agri-environment schemes, where perhaps the incentives paid may offset the costs involved in cross-compliance. Others are looking to reduce the size of their beef herd or sheep numbers, but this is more likely a reaction to lower market prices in a decoupled environment rather than to the costs involved in cross-compliance. Others are looking towards extensification as a means to reduce labour inputs.

b. Other possible data sources:

- The Farm Business Survey (FBS)[37]

  The FBS provides annual information on the financial position and physical and economic performance of farm businesses in England. Specifically, the FBS provides information on:

  - profitability and performance of farm business
  - costs, revenues and margins of farms and farm
  - location, physical and environmental characteristics of the farm

[35] The National Trust (2005) Impact of CAP Reform on the English Uplands – A National Trust Discussion Paper

[36] ADAS (2005) The Economics of Extensive Livestock Grazing Post CAP Reform – Prepared for English Nature

[37] http://statistics.defra.gov.uk/esg/asd/fbs/default.htm

- machinery, labour use, and contracting arrangements
- assets, liabilities and debt servicing
- output and costs of non-agricultural activities on farm
- other sources of farmer/spouse income

The sample size is 1,850. Survey data are published in mainly tabular or graphical form, usually showing comparisons between groups of businesses, for example between regions or between types of farm. An online database was due to be ready by summer 2005, but is not yet available. The results can be used to evaluate policy and to benchmark farm business performance.

- The Farm Management Pocketbook (John Nix)

  Published every year this pocketbook provides enterprise data on crops and livestock as well as info on labour costs, machinery and other fixed costs. The data in the pocketbook could be used to estimate changes to costs following the 2003 CAP reform.

- Original independent research

  The UK is fortunate to have a strong body of both governmental and non-governmental bodies that frequently commission research into a range of topics relating to the CAP. The agricultural team at IEEP keeps up-to-date with research and would look for the opportunity to draw on any new original research taking place.

The Costs of Cross-Compliance – Example of Two GAEC Standards

From the overview of data availability it appears that there is more information on the costs associated with meeting the GAEC standards than for the costs of meeting the SMRs. This section summarises some work conducted by the Economics and Statistics Directorate[38] within Defra on the two cross compliance measures identified as most likely to have a notable economic cost: the Soil Management Plan and 2m field margins.

2m Uncultivated Field Margins

Farmers are required to put in place a 2m margin alongside sensitive habitats such as hedgerows (where the 2m is measured from the centre of the hedge) and watercourses. Farmers were expected to face increased costs due to the loss of cropping on these strips and decrease in total grazing area, which would particularly impact upon intensive dairy farms. Defra introduced a derogation exempting fields of less than 2 hectares in size so that cross compliance is not unfair to those farmers with a high proportion of field boundaries. The overall costs identified here do not account for this derogation.

The calculations make a number of assumptions about the typical field sizes for arable and livestock farms, and the overall length of sensitive habitats that would require the margin. It was found that, based on income foregone, the cost of the measure is estimated to be £7 (about €10) for each 100m of 2m margin on arable and dairy farms. The overall cost is

[38] ESD (2004) Assessing the cumulative impact of regulation and charges on farm incomes

several hundred pounds per farm business, equating to 0.5% of the total farm costs or 2-3% of the SFP received by that farm. These costs vary by farm type and farm size, as shown in the table below.

Illustrative average farm costs of 2m margins by farm type and size, England

		2m margins	% of total farm costs	% SFP
Cereals	small	420	0.9%	3%
	medium	890	0.8%	3%
	large	1,770	0.6%	2%
	all sizes	1,020	0.7%	3%
general cropping	small	300	0.8%	3%
	medium	590	0.5%	3%
	large	1,680	0.4%	2%
	all sizes	1,100	0.5%	2%
dairy	small	250	0.5%	3%
	medium	430	0.5%	3%
	large	690	0.3%	2%
	all sizes	480	0.3%	3%
lowland cattle & sheep	small	240	0.5%	2%
	medium	450	0.4%	1%
	large	810	0.3%	1%
	all sizes	320	0.5%	2%

The Soil Management Plans

In 2006 farmers need to complete a risk-based soil management plan which must be implemented on the farm from 2007. The ESD state that the impact on the farm business will depend on the extent and severity of any soil problems on the farm. For example, those farms (in particular arable, general cropping, pig farms and dairy farms) with vulnerable soils, slopes and watercourses will have higher implementation costs. The costs below illustrate estimates for drawing up the management plan rather than the costs for implementing any remedial action or changes to husbandry practices.

It was found, based on information of the pilot ELS, that the cost of developing a plan is equal to about £2 (about €2.9) per hectare with a 10% variation for smaller and larger farms (as smaller farms have higher overhead costs). The chart below illustrates the range of costs for cereal and dairy farms of different sizes.

5.4 Germany

Activities

In the months after the project's kick-off meeting, the German partner Ecologic contacted key-persons in administration, farmers associations as well as farmers themselves regarding compliance with standards. The data availability on compliance with standards and costs of compliance was also checked. Based on these first impressions and following an analysis of which further people should be contacted, a series of structured interviews will be conducted in November / December 2005. The interview structure from the UK Regulatory Impact Assessment (RIA) will be taken into consideration and the results examined.

Overview

Currently several states ("Länder"), the responsible federal ministry (BMVEL) and the biggest farmers association in Germany (Bauernverband) have established task forces with representatives from the different states in Germany (Bund-Länder-Arbeitsgruppen). The main focus of these groups is to develop an approach to effectively implement the Cross-compliance regulation (including registration, criteria and control) on a national and state level in a harmonised way. Currently the "Länder" are mainly working on a Cross Compliance Check Lists, in order to inform the farmers and to prepare and simplify future controls. The evaluation and estimation of costs and the correlative effects on competitiveness are not of core interest of these groups. Instead they are concentrating on how to establish a farm advisory service and how to organise the control in a way that is in line with EU regulations. Meanwhile three Länder have started Cross Compliance Controls. The results are collected in the ZID data base (Zentrale InVeKos Datenbank) in Munich.

During the legislative process of implementing Cross Compliance estimations of its costs have been made[39]. A conclusion was reached that the GAEC requirements may result in additional costs for the farm holder, but that these are not yet quantifiable. The limited information on control, level of compliance and sanctioning of CC in Germany that is postulated for recent years [40] accounts as well for the financial dimension of the compliance.

This is more or less in line with preliminary results from initial interviews with the farm advisors, in charge of trying to control farmer compliance. The mandatory standards of the regulation have been implemented as national legislation for several years, therefore they impose no additional, new standards. The standards resulting from CC are seen as an integral part of the national good farming practice regulations (GFP) that cover a wider field than the previous ones. Currently most farmers are not worried about the current and future standards and are uninterested in gathering detailed information about control and enforcement of CC. If farmers believe there will be extra costs, these are mainly the cost of documentation and for the single farm payment application. The German farmers' association (Bauernverband) is currently trying to establish an effective documentation regime, to avoid double or threefold

[39] Drucksache 15/2553: "Entwurf eines Gesetzes zur Umsetzung der Reform der Gemeinsamen Agrarpolitik"; Protokoll Nr. 15/37 des Ausschusses für Verbraucherschutz, Ernährung und Landwirtschaft, 37. Sitzung, Öffentliche Anhörung, Entwurf eines Gesetzes zur Umsetzung der Reform der Gemeinsamen Agrarpolitik

[40] Osterburg, Nitsch & Bergschmidt 2003: Cross-compliance and CAP: learning from past implementation. In: Cross-compliance newsletter (1), p.3-8, Nitsch, Osterburg 2004: „Cross Compliance als Instrument der Agrarpolitik", Landbauforschung Völkenroden 3/2004 (54): 171-185

documentation of the same criteria and one state (Schleswig Holstein developed a software package to aid documentation, which is available for farmers at a low price (25€)).

The small and medium sized farms at least, will try to avoid direct investment costs resulting from CC regulations. This is possible in collaboration with other farmers (e.g. common storage and use of fertiliser, pesticide or diesel storage facilities in line with the regulation.). Concerning the different farm sectors it is expected that dairy, pigs and poultry and the beef sector will be those most affected, due to the standards on animal welfare and health. Even so, the costs for the identification and registration of animals are believed to be negligible because they are generally already covered by national law and retailer's quality standards. In the cereal sector existing quality control mechanisms and food law requirements are already more stringent than the standards set under CC.

The GAEC criteria are likely to have the highest cost effects out of all the cross compliance standards. Here the member states have the greatest level of freedom to define the terms and therefore considerable differences between the EU member states may be expected. For Germany it is expected that the criteria will be limited to those that have already been established as good farming practice criteria under § 5 of the German conservation law, including the banning of ploughing permanent pastures. The different German states (Bundesländer) are likely to have different definitions both for exceptions from the general rule as well as maintenance regimes. Here considerable cost effects can be expected.

Regarding data availability both of the "Landwirtschaftliche Buchstellen" (which also report Data to the FADN) as well as experimental model-farms (Landwirtschaftliche Versuchsanstalten) and different states (Länder) can be contacted for information on cost effects for the individual farmer.

5.5 Italy

Introduction

The EU Directives objective of the cross-compliance policy are very different if nature. Some have a long story and have in the meantime been updated with new directives, others are very recent. In this short overview at first information is provided about the application in Italy of the statutory management requirements listed in Annex III of Regulation 1782/2003 (amended by Reg 21/2004) and Good Agricultural and Environmental conditions of Annex IV. Secondly for each of the Directives and GAECs cost implications at farm level are hypothesised, for which cost analyses are foreseen in the subsequent workpackages of the project.

Directives

Conservation of wild birds (79/409/EEC)

Conservation of natural habitats, wild flora and fauna (92/43/EEC), Habitat directive

Compliance with standards

A first delimitation of Special Protection Zones (SPZ) following the Wild Birds Directive was carried out in the 90s, but in the subsequent years the number of sites were extended. Furthermore, the regional administrations propose to increase the number of the protection areas which then will be acknowledged by the Ministry of Environment. In 2005 a total of 503 Special Protection Zones and 2,256 Sites of Community Importance have been recognised and delimited.

In Lombardy half of the Special Protection Zones involves the rice growing areas south west and west of Milan. These areas are of particular importance for migrating herons. Either the higher costs or the lower incomes related to special management measures in rice growing areas will be compensated through the rural development plans.

As cross compliance is concerned farmers cultivating land in Special Protection Zones have to comply with:

- the minimum rules of good agricultural and environmental condition
- the requirements and constraints laid down in the special management plans laid down for the protection zone by the delegated public administration.
- the condition that each project or investment which may interfere with the wild birds habitat has to be assessed preventively by an Impact Evaluation

Cost of compliance

The costs of compliance are related to the obligations and constraints farmers have to respect in the Special Protection Zones, which primarily depend on the management plans set up by the public authorities in these areas. As far as livestock farming is concerned, frequently rules concerning grass cutting are put in place, which may reduce the production and quality of hay or silage produced. An analysis of the costs may foresee a quantification for farms affected by the Wild Bird and Habitat Directives by means of a case study focused on the farm economic impact of management plans.

Protection of groundwater against pollution by dangerous substances (80/68/EEC)

This Directive has been acknowledged in the national legislation by National Decree 152/99, which prohibits the discharge of the dangerous substances listed in annex I and II of the Directive, to the soil and subsoil. In case of discharge of dangerous substances in special collection sites, the farmer has to request an authorisation of the delegated public authority.

Cost of compliance

The directive implies primarily administrative costs related to the request for authorisation of discharge of dangerous substances. No other costs are to be envisaged.

Protection of environment when sewage sludge is used in agriculture (86/278/EEC)

Up till recently over 80% of sewage sludge has been used in agriculture. The issue has been ruled by the national application of the sewage sludge directive through National Decree 99 of 1992.

The use of sewage sludge will be further restricted as they cannot be used on:

a) cultivated fields, except fruit orchards and vineyards

b) fields having a slope of more than 15%

c) having a pH of less than 5

d) forage crops 5 weeks before pasturing or harvesting

Cost of compliance

The costs inherent to the compliance with this directive are first of all related to the administrative costs of the request for the necessary authorisation. The further imposed restrictions on the use of sewage sludge may generate extra fertiliser costs as farmers will have to reduce the use of a relatively cheap source of minerals and organic matter.

Protection of environment against pollution by nitrates (91/676/EEC)

Among the environmental directives, the Nitrate Directive has been most debated as its impact on the development of intensive livestock farming is potentially most incisive. As in most EU member states, its application in national legislation has been delayed for many years creating the premises for a procedure of infringement by the EU. Some regional governments integrated the Nitrate Directive in their legal framework years ago. This year (2005) a national decree will be approved which provides for a full application of the Nitrate Directive in Italy.

The most relevant implications for livestock farmers are:

a) the authorisation to spread manure

b) the maximum quantity to spread and the necessity to discharge excess of manure elsewhere

c) the prohibition to spread manure in certain periods of the year

d) the standards with regards to the stocking of manure

Authorisation to spread manure

As far as the authorisation to spread manure is concerned, a distinction is made between different categories of livestock farms which have been classified in terms of the total quantity of nitrogen produced by the farm.

Size of pig farms	**Type of authorisation necessary to spread manure**	
Nitrogen at the fields (Kg/farm)	Ordinary zones	**Vulnerable zones**
< 1000	Exemption of communication	Exemption of communication
> 1000 < 3000	Exemption of communication	Simplified communication
> 3000 < 6000	Simplified communication	Complete communication with a simplified AUP
> 6000	Complete communication	Complete communication with a complete AUP
Only for pigs and poultry	*Over 2,000 fattening pigs or 750 sows or 40,000 broiler places*	
IPPC	Demand for authorisation with complete AUP	Demand for authorisation with complete AUP

As the table is reporting livestock farms producing less than 3,000 kg of nitrogen in ordinary zones and less than 1,000 kg of nitrogen in vulnerable zones are exempted from the condition to communicate their manure spreading activity.

A *simplified communication* consists of a sheet in which the farmer reports some basic information of the farm as the Utilised Agricultural Area (UAA), the patrimony of animals and the capacity and characteristics of the manure storage.

A *complete communication* is more detailed and has to contain information regarding all the main characteristics of plots of the farm (size, soil type etc.), their rotation patterns and the manure spreading techniques to be used reporting the type of machinery and equipment.

A *complete Agronomic Utilisation Plan (AUP)* should report a detailed nitrogen balance of the farm. The plan should start from the quantity of nitrogen present in the subsoil and originating from previous organic and mineral fertilisations, should take account of the atmospheric deposition and foresee the quantities of organic and mineral nitrogen to be spread. An AUP has to be designed by professional and officially registered agronomists.

A *simplified Agronomic Utilisation Plan (AUP)* has the same objectives as a complete AUP, but may exploit average already available data and models of the regional administration for the area where the farm is located. The regional administration will have designed these models for homogeneous subareas. The nitrogen balance calculation model of the simplified AUP is a low cost tool which can be used as input for a rational nitrogen fertilisation plan.

The maximum quantity to spread and the necessity to discharge excess of manure elsewhere

Type	Ordinary zones	**Vulnerable zones**
Organic manure	Max 340 kg N/ha	Max 170 kg N/ha
Mineral fertilisers	According to GAEC	According to the crop needs
Nitrogen of waste waters produced on the farm	According to GAEC	Within the maximum of 170 kg N/ha
Spreading conditions	According to GAEC	According to AUP

Costs of compliance

Among all the environmental directives the Nitrate Directive has the most important cost implications. The overall production costs of livestock products will rise in particular for intensive farms located within the vulnerable areas. The costs range from:

a) investment and running costs for manure storage equipment and/or manure treatment plants

b) transport cost of excess manure outside vulnerable areas

c) the purchase of extra farm land or the acquisition of manure spreading rights on extra farm land

d) the reduction of nitrogen content in feed and the inherent decrease of the lean meat percentage, which determines a reduction of farm receipts

e) the reduction of crop yield due to the decrease of manure spreading

Identification and registration of animals (92/102EEC; 21/2004/EC), registers and passports for bovine animals (1760/2000/EC) and labelling of beef and beef products

The identification of animal species on livestock farmers has to be performed through the:

a) assignment of farm code number including personal identity data of the farmer

b) use of numbered eartags which have to applied after the birth of the animals and in particular for:
   - for bovine animals within 20 days,
   - for sheep and goats within 60 days
   - for pigs within 70 days

c) as imported animals are concerned from outside the EU within 7 days ear-tags have to be applied

d) each livestock farmer has to keep a farm animal register indicating the present number and the births, deaths and movement of each animal. For bovine animals and pigs the registration of birth, death or movement has to be carried out within 3 days, except for the birth of piglets which can be registered with 15 days.

e) for sheep and goats each year the following rules have to respected:
   - the 15th of March the total presence of animals has to be registered
   - during the year each 90 days the number of ewes which have produced lambs or have an age of 12 months have to be recorded
   - each 12 months the entrance or sales of animals have to registered

   From the 9th of July 2005 the identification system of sheep and goats is governed by Regulation 21/2004/EC

Cost of compliance

The costs generated by the mandatory part of these directives have essentially an administrative nature. They are related to the time necessary to update the registers and to purchase the eartags. Much more incisive for the farm balance are the voluntary certification schemes foreseen by the meat quality labelling systems. Over 50 quality beef product specifications have been approved and recognised by the Ministry of Agricultural Policies in accordance with Directive 1760/2000.

Prohibition on the use in stockfarming of substances having a hormonal or thyrostatic action and of beta-agonists (96/22/EC)

By means of Decree 336 of 1999 the EU Directive has been applied in Italian law. The Ministry of Health through its peripheral offices carries out plans of control based on sample tests on farms and in slaughterhouses.

Cost of compliance

Farms do not have to face any specific costs to comply with this directive, as the use of hormones and beta-agonists is forbidden anyhow. Following this directive no specific register has to be updated.

General principles and requirements of food law (Regulation 178/2002)

Main requisite for the food chain is the obligation to implement complete food traceability systems which may reduce the risk of food scandals in future. This directive, to be applied by all food chains by the end of 2005, certainly generates a series of costs which all actors of the chain have to sustain. Contemporarily it creates significant benefits in terms of food safety as potentially the huge costs of new food scandals may be reduced. The directive has been applied in Italian legislation and all food chains have worked on cost efficient systems of traceability.

Cost of compliance

Most of the costs related to the updating of traceability systems are of administrative nature. All sensible inputs have to be registered indicating characteristics, provenance and date of purchase. Roughage, concentrated, pesticides, fertilisers, medicines etc etc. are all subjected to systematic registration. The same system is applied on the outputs of the farm, where volume, characteristics and destination of products have to be registered.

Prevention, control and eradication of transmissible spongiform encephalopathies (Regulation 999/2001)

The Regulation has found a rapid application in Italy due to the emergency situation around the BSE crisis. High risk material is being destroyed in slaughterhouses which has significantly increased their slaughter costs. About 150 cases of BSE have been ascertained on cattle farms, but the frequency of occurrence decreased rapidly. Specific costs at farm level are not foreseen.

Provisions for the control and eradication of bluetongue (2000/75/EC), foot-and-mouth and swine vesicular disease

Blue tongue disease (also called catarrhal fever) is a for humans non-contagious viral disease of sheep and less frequently of cattle, goats and buffaloes. The council directive has been applied in Italian law. Measures are currently undertaken in the areas which have been struck by the disease (Sardinia and Southern Italy). For several years already movement of animals (sheep and cattle) in these areas have been blocked. The provision to preventively vaccine all healthy animals is controversial as several reports suggest it may cause miscarriages and infertility.

Similar measures are provided for in the case of foot-and-mouth and swine vesicular disease, where the first provision is to prohibit the movement of animals.

Cost of compliance

The costs related to this disease can be conspicuous. For the purpose of cross-compliance only the prohibition of movement of animals should be mentioned here, as the decision to vaccine preventively is taken autonomously at national level. The cost implications of the prohibition of movement can however by substantial anyhow, as cattle and sheep prices may collapse, as happened already in the areas struck by the bluetongue disease.

Standards for the protection of calves (91/629/EC), for the protection of pigs (91/630/EC) and the protection of animals kept for farming purposes

The directive the protection of calves under six months of age and its successive amendments (Directive 97/2/CE and decision 97/182/CE) has been applied at national level by the Decree 30/12/1992 n. 533 and finally modified by the Legislative Decree 1/09/1998 n.331. The Directive applies to:

- calves raised for veal production
- calves raised in dairy farms

The application does not differ from the standards laid down in the EU directive, except for the fact that the Italian Decree includes also farms with less than 6 calves and farms with suckler cows.

The regulation provides for the following basic standards:

a) group housing obligatory after 8 weeks of age
b) minimum housing area of 1.5 m2 per calf up to 150 kg, 1.7 m2 for calves between 150 and 220 kg and 1.8 m2 for calves over 220 kg
c) regular animal and equipment checking
d) adequate barn hygiene and floor quality

e) use of minimum quantity of fibre and Fe

As the welfare of pigs is concerned at national level the directives 91/630/CEE, 2001/88/CE and 2001/93/CE have been converted into Italian Legislation Decrees respectively n. 534 of 30/12/1992, n. 53 of 20/02/2004 (later than the application deadlines).

The directives provide for:

a) minimum space requirements for fattening pigs specific for different weight categories

b) minimum space requirements of sows, which rise from about 1.25 m2 up to 2.25m2

c) it is forbidden to tie up sows and gilts

d) it is forbidden to use a complete slatted floor for sows and gilts

e) it is forbidden to isolate the sow during the period between 4 weeks after insemination and the week before farrowing

f) minimum standards for slatted floors

Cost of compliance

Before the end of 2006 all existing farms with calves should comply with the directives. This implies the following costs:

- investment costs for the complete conversion of the farm
- the feed costs of calves will rise as consequence of the larger space in which they are raised and due to the minimum quantity of fibre in the feed ration which decreases the feed conversion rate as well.

The pig sector will have to face a significant rise of the production costs to comply with the EU Directives. The investment costs related to the larger space requirements, the group housing of sows, the prohibition of slatted floors and extra equipment necessary to prevent a decrease of productivity due to group housing will have an important impact of the fixed costs of the pig farm. Feed costs per kg pigmeat will increase as well as feed conversion rates will go down. Existing pig farms have to comply with the directives before the end of the year 2012.

ANNEX IV - Good agricultural and environmental conditions

Issue: prevention of erosion

Standard 1.1. Surface water control measures on slopes

It is obligatory to realise furrows in arable crop areas on slopes having a gradient of more than 8%. The areas where these have to be carried out should be vulnerable to erosion phenomena. The minimum distance should not be below 80 m. In case of risks for the

farmers in carrying out the furrows the alternative measure is the establishment of grass strips of at least 2 meters width at a minimum distance of 80m.

Cost and benefits of compliance

The long term benefits of these anti-erosion measures equals or exceeds the costs of its realisation.

Standard 2.1. Maintain soil organic matter through appropriate practices

The burning of the stubble and straw is prohibited. Only rice fields are excluded from this prohibition.

Cost of compliance

Burning of the stubble is widespread in Italy, in particular in the durum wheat growing areas of the south. The agronomic advantage is related to the immediate fertilisation of the land with phosphorus and other minerals which otherwise would have been released more slowly through the organic matter in the years after ploughing up. The cost of the prohibition is therefore related to the extra fertiliser which has to be purchased to obtain the same effect. The benefits are related to the maintenance of organic matter in the subsoil and to the reduction of fire risks.

Also the rice stubble is burned, but this has the advantage of creating a compact surface on which new rice can be planted in the subsequent year.

Standard 3.1. Maintain soil structure through appropriate measures

To reach this objective farmers have to maintain the efficiency of the surface water canals. It does apply to all categories of farmland.

Issue 4. Ensure a minimum level of maintenance and avoid the deterioration of habitats

Standard 4.1. Protection of permanent pasture

It is prohibited to convert permanent pasture to other productive destinations. Some regions have established minimum animal density levels. The regional administration of Veneto for example foresees a minimum stocking rate of 0,2 UBA per ha and to carry out at least one grass cut per year.

Cost and benefits of compliance

The prohibition to convert permanent pasture limits the opportunity to obtain a higher forage or other crop yield. The costs of compliance are related to the extra crop yield foregone. The entity of this extra yield obviously depend on the alternative crop introduced.

In Italy the majority of permanent pasture are located in mountainous areas (Alps and Apennines), hence the risk of the rupture of permanent pastures is limited as many alternative crops do not exist. Of more importance are unpastured grasslands in the plains which however are not included in this standard.

Standard 4.2. Management of set aside land areas

In general set aside land should have a natural or artificial plant coverage and the farmer should carry out the necessary field operations in order to preserve the soil fertility and to safeguard the presence of wild birds and other animals.

This standard introduces however a distinction for the management of set aside between the Natura 2000 areas, delimited according to the Wild Birds and the Habitat Directive, and set aside outside these areas.

a) Within the Natura 2000 areas it is prohibited to carry out a crop cut for a least 150 days in the period between the 15th of February and the 31st of August
b) In all other areas this prohibition is limited to a period of 120 days in the period 15th of March until the 15th of August

Cost and benefits of compliance

The costs of compliance with this standard are related to the variable and machinery costs of the minimum management operations foreseen on set aside land. The prohibition to cut in certain periods of the year has been contested by several farmers' organisations.

Standard 4.3. Management of olive groves

The objective of this standard is to maintain the olive groves in a good vegetative condition in order to have an equilibrated development of the grove and to prevent a deterioration of its status. Those cultivation techniques should be used which may guarantee this minimum maintenance objective. Moreover the olives have to be pruned at least every five years. The maintenance of olive groves reduces the risks of erosion, contributes to the preservation of the typical landscape of Central and Southern Italy and increases the possibility for the local fauna to hide and feed themselves.

Cost and benefits of compliance

When the production of olives is the main objective, to comply with these requirements farmers do not have to face extra costs as these operations are carried out anyhow.

Standard 4.4. Retention of characteristic landscape features

The main requirements to satisfy according to this standard are:

a) The prohibition to eliminate terraces

b) To comply with the management plans laid down by the regional administrations to fulfil the objectives of the Wild Bird and Habitat Directive

The first constraints is valid for all agricultural areas where terraces are present, whereas the second obligation is limited to the Natura 2000 areas delimited in accordance with the Wild Bird and Habitat Directive.

In these latter areas a special authorisation has to be asked for the elimination of hedgerows, woods, forest strips, moors and other humid areas or modify the original and traditional agronomic use of the territory lake "marcite"[41], rice fields or use sewage sludge on the fields.

Annex III Directives and their potential sectorial impact (matrix)

Directive	Cereals	Dairy	Beef	Pigs/ poultry	Fruits	Olives (oil)
Environment						
Conservation of wild birds (79/409/CEE)	++	++	++	0	+	+
Protection of groundwater	+	+			++	+
Sewage sludge	++				+	+
Nitrates from agriculture		++	+	++		
Conservation of natural habitats, wild flora and	++	++	++		+	+

[41] "Marcite" are the traditional irrigated hay and fresh grass producing areas in the plains of Lombardy which due to the warm water are able to produce all year around.

fauna (92/43/CEE)						
Public and animal health; identification and registration of animals						
Identification and registration of animals		++	++	++		
Identification and registration of bovine animals		++	++			
Identification of bovine animals, labelling of beef		+	++			
Public, animal and plant health						
Placing of plant protection products on the market	++				++	++
Use of hormones		++	++			
Requirements of food law	++	++	++	++	++	++
Prevention, control and eradication of spongiform encephalopathies		++	++	++	++	
Notification of diseases						
Control of foot-and-mouth disease		++	++			
Control of swine vesicular disease		++	++	++	++	
Control of bluetongue		++	++			
Animal welfare						
Standards for the protection of calves		++	++			
Standards for the protection of pigs				++		
Protection of animals kept for farming purposes		++	++	++		

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