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Abbreviations and Acronyms

BBodSchG	<i>Bundesbodenschutzgesetz</i> – Federal Soil Protection Act
BNatSchG	<i>Bundesnaturschutzgesetz</i> – Federal Nature Conservation Act
BSE	Bovine Spongiforme Encephalopathy
DBV	<i>Deutscher Bauernverband</i> – German Farmers’ association (federal level)
EAFRD	European Agricultural Fund for Rural Development
GAEC	Good Agricultural and Environmental Condition
GFP	Good Farming Practice
IACS	Integrated Administration and Control System
LU	Livestock Unit
SMR	Statutory Management Requirement
TSE	Transmissible Spongiforme Encephalopathy

Executive summary

This report describes the national implementation of cross compliance in Germany and analyses the costs faced by farmers as a result of introducing cross compliance. The study focuses on the cereal, beef and dairy sectors.

Methodology

The cross compliance standards applicable to farmers in Germany, which derive from the SMRs and GAEC objectives as laid down in Annex III and Annex IV of EC Regulation 1782/2003, are presented based on an evaluation of the relevant national laws implementing the Directives and the information material and checklists provided to German farmers by the Federal and *Länder* authorities. For the analysis of cost aspects, the relevant literature was evaluated, and approximately 30 interviews were conducted with farmers, representatives of farmers' associations, farm advisors and ministry staff members. The interviews were evaluated and summarised with respect to the costs of cross compliance at farm level.

Implementation

In Germany, cross compliance has been implemented meticulously. The documents drafted by the authorities that list the relevant standards take into account not only the provisions as formulated in the EU Directives, but a large number of standards laid down in Federal and *Länder* legislation that derive from these Directives. Farmers are thus faced by detailed and comprehensive lists of rules they have to comply with in order to secure their direct payments, although only a limited subset of standards is systematically controlled during on-the-spot checks.

Degree of compliance

The official evaluation results of the 2005 cross compliance controls at the Federal and *Länder* level was not available for this study. Nevertheless, based on evaluations of the 2005 cross compliance controls that were published by some German *Länder* and on information obtained from the interviews, conclusions on the compliance rates can be drawn. The rules concerning the identification and registration of animals were the most problematic; here high non-compliance rates of up to 30% have been recorded. For most of the remaining standards, particularly those relating to good agricultural and environmental condition, compliance seems to have been satisfactory in 2005, with the possible exception of the standards deriving from the Nitrate Directive.

Cross compliance is likely to improve compliance with the SMRs, at least to a certain extent. Triggered by cross compliance, farmers may overhaul their holdings, make use of management tools and advisory systems to improve farming processes and thus strengthen overall performance in terms of environmental, animal and consumer protection.

Costs of cross compliance

While the study results indicate that the actual costs for farmers from cross compliance may not be substantial in most cases, the instrument is intensely debated in Germany, and has caused considerable anxiety among German farmers. Generally,

an increase in bureaucracy and paper work, not only on the part of farmers but also for public administration, is most often criticised and is also mentioned as a cost factor.

Annex IV (GAEC): In general, Annex IV standards are not considered to have major cost implications for farmers, and compliance with the GAEC standards overall does not seem to be problematic. Often the standards are already complied with under good farming practice. However, individual cases were mentioned (e.g. part-time farms) in which the GAEC standards could constitute a considerable challenge for farmers. The costs for some of the required individual measures can be quantified at farm level. However, it is not possible to determine to what extent the standards will cause changes in farming practices at national level.

Annex III (SMRs) : since Annex III standards are part of national legislation and apply independently of cross compliance, the costs of compliance with these standards cannot directly be attributed to cross compliance. However, these costs may still be relevant if farmers did not comply with certain standards before the introduction of cross compliance but will do so now. The costs of complying with Annex III standards are therefore considered in this report, taking into account the degree of compliance with the standards found by the 2005 cross compliance controls, and the possibility that compliance rates might improve as a result of the introduction of cross compliance. The results indicate that investments may have to be undertaken by farmers mostly in relation to groundwater protection, storage facilities and housing for calves. Also, given the high non-compliance rates in the case of animal identification, the costs of ear-tags and associated services might be of relevance.

Generally, the challenges faced by farmers as a result of cross compliance differ greatly. While it is likely that large farms and farm co-operatives are better equipped for coping with the increased documentation and administration efforts, and that their facilities are routinely upgraded to comply with standards, small farms and part-time farmers may be more strongly affected.

1 Introduction

The 2003 reform of the EU's Common Agricultural Policy made cross compliance mandatory for all Member States (Council Regulation 1782/2003¹ and Commission Regulation 796/2004²). The instrument makes farmers' receipt of direct payments dependent upon their compliance with rules concerning the environment, animal identification and registration, public, animal and plant health, and animal welfare. The cross compliance standards consist of two strands:

- **Good agricultural and environmental condition ("Annex IV"):** All farmers claiming direct payments must abide by standards to be newly established by the Member States, which constitute minimum requirements for the maintenance of land and soil conditions and must cover the aspects set out in Annex IV of Regulation 1782/2003.
- **Statutory Management Requirements ("Annex III"):** Farmers must respect standards called statutory management requirements (SMRs) set up in accordance with 19 EU Directives and Regulations (listed in Annex III of Regulation 1782/2003) relating to the protection of environment, public, animal and plant health, and animal welfare.

This report describes the national implementation of cross compliance in Germany and analyses the costs faced by farmers as a result of the introduction of cross compliance. Generally, cross compliance generates additional costs to farmers mainly through the Annex IV standards, since they are newly introduced and may go beyond previously existing national standards. By contrast, the costs of complying with the Statutory Management Requirements (Annex III), which were in place before the introduction of cross compliance or else would be in place also without cross compliance, cannot be attributed to cross compliance. However, these latter costs are taken into account in this country report, since they may be relevant if farmers who did not comply with these standards before the introduction of cross compliance will do so now. This case study focuses on the cereal, beef and dairy sectors.

Section 2 provides an introduction to the current situation of agriculture in Germany. Section 3 gives a general overview of the implementation of cross compliance in Germany, describing in particular how the compilation of standards is co-ordinated in the federal system, and how the control of cross compliance is organised by the *Länder* governments.

Sections 4 - 7 provide an overview of the cross compliance standards that apply to farmers in Germany. Section 4 describes the standards relating to the environment,

¹ Council Regulation (EC) No 1782/2003 of 29 September 2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers and amending certain Regulations, OJ L 270, 21.10.2003, p. 1-69.

² Commission Regulation (EC) No 796/2004 of 21 April 2004 laying down detailed rules for the implementation of cross-compliance, modulation and the integrated administration and control system provided for in of Council Regulation (EC) No 1782/2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers, OJ L 141, 30.4.2004, p. 18-58.

and covers both the relevant SMRs (section 4.1) and the standards established for GAEC (section 4.2). Sections 5-7 present the remaining standards deriving from the SMRs of the EU Directives and Regulations in the context of identification and registration of animals, public, animal and plant health, and animal welfare. The standards described in these sections are those laid down in the checklists and information material provided to farmers by the *Länder* administrations (see section 3).

Section 8 presents the results of the cost analysis. In addition to a literature search and evaluation, approximately 30 interviews were conducted with farmers, representatives of farmers' associations, farm advisors and ministry staff members. Interviews were evaluated and summarised with respect to the costs of cross compliance at farm level. Where data are available, estimates on impacts at national level are given.

2 National context: agricultural production conditions

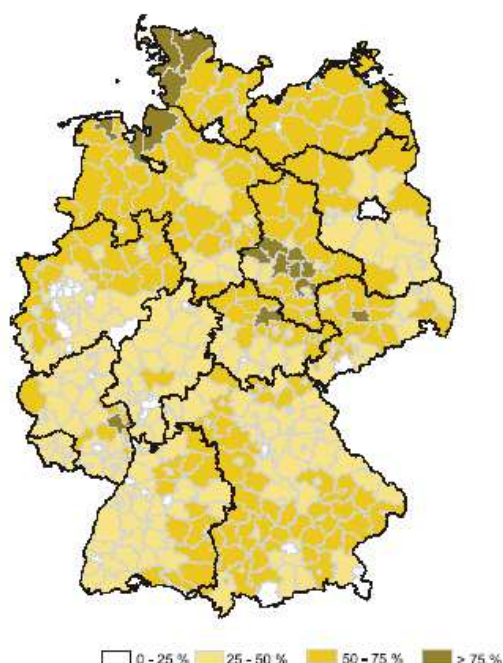
In 2004, there were 372,400 farms in Germany³, together cultivating 17 million hectares of land. Approximately 50% of the total national area of 35 million hectares is thus agriculturally used.⁴ Figure 1 shows the percentage of agricultural area for the individual German *Länder*.

³ Holdings with at least 2 hectares of agricultural area.

⁴ BMVEL - Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft 2005: Agrarpolitischer Bericht der Bundesregierung 2005. Berlin.

2.1 Agricultural structure

Figure 1 Agricultural area in the German *Länder* (agricultural area as percentage of total area)



Source: I.M.A. 2005.⁵

In 2003, agriculture contributed 1.1 % to gross added value in Germany.⁶ 1.27 million people earn their main or additional income from the agricultural sector. On average the earnings of the full operation holdings over the last years have been stable, although there are considerable variations between years and sectors.⁷

The percentage of farms with more than 100 hectares is relatively small (8%, 29,600 farms); however, these large farms cultivate approximately 50% of the whole agricultural area (see Table 1). Most of them are located in the New *Länder* (see Figure 2).

Table 1 Structure of the agricultural sector in Germany: number and size of farms in 2004

Size of farm (in hectares AA)	Farms		Area	
	Number (1000)	Share in %	Area in 1000 hectares	Share in %
2-10	123.5	33.2	642.9	3.8
10-20	73.4	19.7	1,091.2	6.4

⁵ Information medien agrar e.V. 2005: Landwirtschaft in Deutschland. Kartenatlas. http://www.ima-agrar.de/Dateien/Agraratlas_Web.pdf.

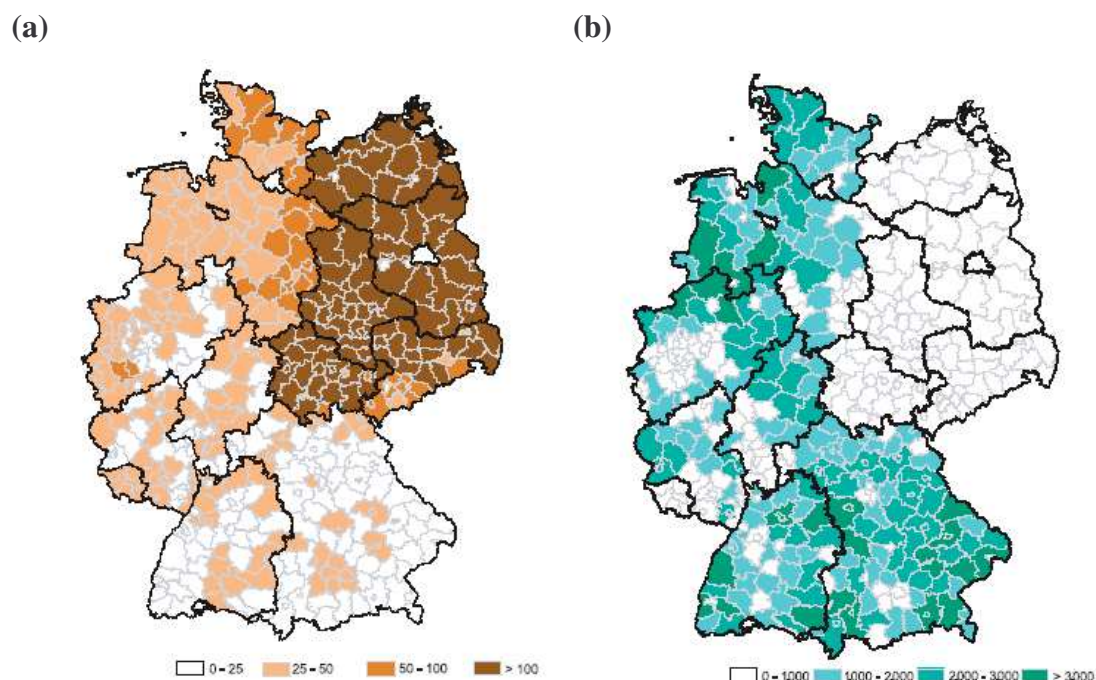
⁶ OECD observer 2005: OECD in figures, Paris 2005.

⁷ BMVEL 2005.

Size of farm (in hectares AA)	Farms		Area	
	Number (1000)	Share in %	Area in 1000 hectares	Share in %
20-50	91.1	24.5	3,002.9	17.7
50-100	54.9	14.7	3,827.1	22.6
More than 100	29.6	7.9	8,409.2	49.5
Sum	372.4	100.0	16,973.2	100.0

Source: DBV 2005, p. 150.

Figure 2 Structure of the agricultural sector in the German *Länder*. (a) Size of farms in Germany (agricultural area per farm in hectares). (b) Number of farms per district (*Landkreis*).



Source: I.M.A. 2005.

This sharp difference between Eastern and Western Germany is due to historical reasons. In the GDR socialist land reforms merged individual farms into the so-called Agricultural Production Co-operatives (*Landwirtschaftliche Produktionsgenossenschaften*) which often consisted of several thousand hectares. These were privatised after reunification, but large farm co-operatives still dominate.

Part-time farming plays a significant role in Germany. In 2003, 55% of holdings and 23% of total agricultural area were managed by part-time farmers.⁸ It might be expected that small-scale and part-time farms will react in a significantly different way to cross-compliance implementation than the bigger farm unit and co-operatives (see page 43).

⁸ DBV – Deutscher Bauernverband 2005: Situationsbericht 2006. Trends und Fakten zur Landwirtschaft. www.situationsbericht.de.

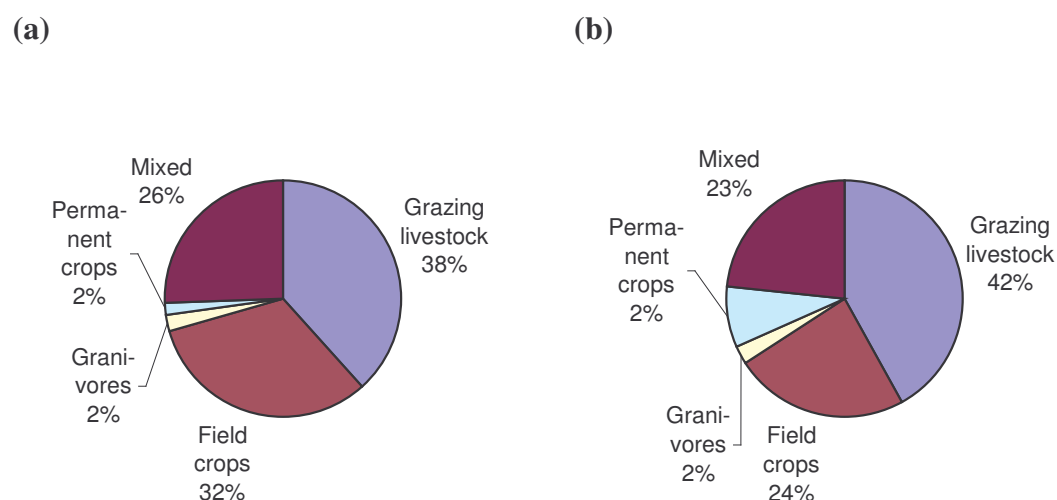
Eco-farming: The number of organic farms in Germany has tripled since 1994, as has the agricultural area used by them. The number of farms that operate according to the EC Regulation 2092/91 on organic production⁹ was approximately 16,500 in 2003, which is equivalent to 4% of all agricultural holdings; the area used for eco-farming was roughly 734,000 hectares.

The economic situation for farmers in Germany improved compared to previous years in 2004/2005 due to the good harvest in 2004 and to higher producer prices for pigs and beef. However, in the fiscal year 2005/2006, a decline of revenues is expected by the German farmers' association (*Deutscher Bauernverband*, DBV) on the basis of increasing prices and expenditure for fuel, energy and fertiliser.¹⁰

2.2 Farm types

Grazing livestock and field crop farming are the dominant farm types in Germany. Figure 3 shows the share of different farm types in the total number of farms and in the total agricultural area. Note that Figure 3 refers to individual enterprises only and does not include data on partnerships and corporate bodies. Figure 4 illustrates how the agricultural activities which this report focuses on, i.e. cereal, dairy and beef, are distributed regionally.

Figure 3 Farm types as percentage of area (a) and of holdings (b). Classification according to EU Typology¹¹



Source: DBV 2005, p. 152.¹²

⁹ Council Regulation (EEC) No 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs.

¹⁰ DBV 2005, p. 270/284.

¹¹ EU typology; see Commission Decision 85/377/EEC of 7 June 1985 establishing a Community typology for agricultural holdings, Official Journal of the European Communities No L 220 of 17 August 1985.

¹² The figures refer to individual enterprises only; business partnerships and corporate bodies (which make up 5.7% of farms and 31% of agricultural area) are excluded.

Cereal: In 2003, 32% of total agricultural area was used for field crop farming.¹³ Of this field crop area, 58% is used for growing cereals (6.86 million hectares).¹⁴ The most important cereal type is wheat, followed by barley, rye and oats.

Cereal crop production was 5.76 tonnes/ha in 2003 and estimated to be 7.34 tonnes/ha in 2004. The total harvested quantity of cereal was 39 million tonnes in 2003 and is estimated to be 51 million tonnes in 2004.¹⁵

Areas with a high proportion of cereal production are Western and South-western regions. In the South-east and the North-west, arable farm land is mainly used for growing fodder crops due to the climatic circumstances (See Figure 4a).

Dairy and Beef: The dairy and beef sectors are of great importance to German agriculture. The value of these two production branches was 11.5 billion EUR in 2003, almost 30 % of the total value of agricultural production.

Of the total agricultural area, 38% was used for specialist grazing livestock farming in 2003.¹⁶ In 2003 there were approximately 13.6 million cattle kept on German farms.¹⁷ Total milk production in that year was 28.5 million tonnes, beef and veal production was 1.3 million tonnes.¹⁸ In the dairy sector, average livestock density is 160,5 LU/100 ha, while it is 145,5 LU/100 ha in fodder cropping farms (beef, horses and sheep).¹⁹

The largest number of cattle, especially dairy cows, is kept in Bavaria and Lower Saxony. Cattle farming plays a less important role in areas well suited for arable farming (see Figure 4b).

¹³ DBV 2005, p. 152.

¹⁴ I.M.A. - information medien agrar e.V. 2005: Landwirtschaft in Deutschland. Kartenatlas. http://www.ima-agrar.de/Dateien/Agraratlas_Web.pdf, p. 14.

¹⁵ BMVEL 2005, p.86.

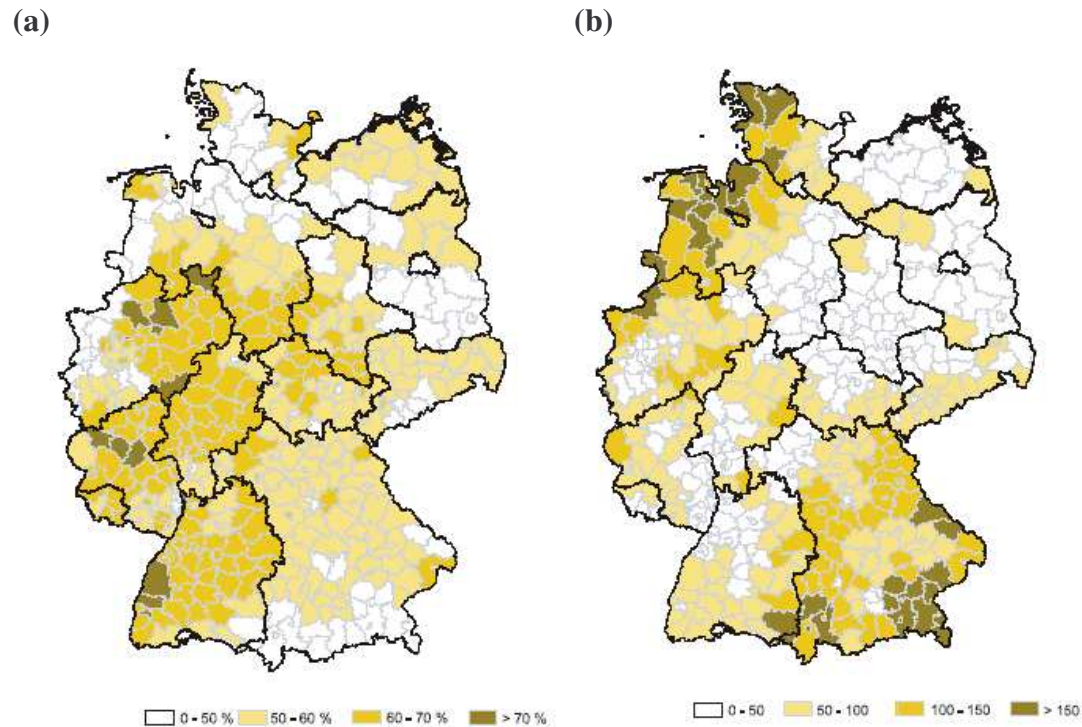
¹⁶ EU typology; in addition to cattle and dairy farming this category also includes sheep, goats and other grazing livestock.

¹⁷ DBV 2005, p. 152-154.

¹⁸ BMVEL 2005, p. 15-16.

¹⁹ BMVEL 2005, p. 100.

Figure 4 Cereal production and livestock husbandry in the dairy and beef sectors in the German *Länder*. (a) Cereal production as percentage of total arable farmland. (b) Number of beef and dairy cattle per 100 hectares of agricultural area.



Source: I.M.A. 2005.

3 Implementation of cross compliance - administration and control

Cross Compliance Regulations (Council Regulation No 1782/2003 and Commission Regulation No 796/2004) are nationally implemented in the „Direktzahlungen-Verpflichtungengesetz“²⁰ act and the „Direktzahlungen-Verpflichtungenverordnung“ ordinance²¹.

A working group set up from representatives of the Federal Ministry and the *Länder* governments (*Bund-Länder-Arbeitsgruppe*) lays down the standards relevant for cross compliance in Germany. The working group also designs the administration and control system within Germany.

²⁰ Gesetz zur Regelung der Einhaltung anderweitiger Verpflichtungen durch Landwirte im Rahmen gemeinschaftsrechtlicher Vorschriften über Direktzahlungen (Direktzahlungen-Verpflichtungengesetz – DirektZahl-VerpflG) vom 21. Juli 2004 (BGBl I 2004, S. 1767 ff. vom 26.7.2004 Nr. 38).

²¹ Verordnung über die Grundsätze der Erhaltung landwirtschaftlicher Flächen in einem guten landwirtschaftlichen und ökologischen Zustand (Direktzahlungen-Verpflichtungenverordnung – DirektZahl-VerpflV) vom 4. November 2004 (BGBl I 2004, S. 2778 ff. vom 12.11.2004 Nr. 58), geändert durch die Verordnung vom 26. Mai 2006 (BGBl. I S. 1252)

3.1 Communication to the farmers

The working group developed an information brochure, describing the obligations for farmers in 2005. The Länder amended the brochure with Länder specific regulations, included standards specific to the respective *Länder* legislation where necessary (e.g. nature protection law) and send it to all farmers applying for direct payment.

In most cases the information brochures were put on the web sites of the respective Länder ministries. Some Länder as well provide checklists assisting farmers in their self-control of cross compliance requirements.²² Updated versions of brochures and checklists were produced in 2006.

Furthermore information events for recipients of direct payment, their representatives and consultants as well as trainings for auditors were held in a large extent, to increase acceptance and answer concrete questions.

Based on these standards, cross compliance information material (brochures and checklists for self-control) are provided to farmers by the agriculture ministries of the *Länder*.²³ These documents contain all national legislative standards relevant for cross compliance and also include standards specific to the respective *Länder* legislation where necessary.

3.2 Administration and Control

Controls are carried out by the respective *Länder* authorities (agriculture, nature protection, veterinary).

The coordination body according to Article 23(3) (EC) No 1782/2003 is usually part of the ministry responsible for agriculture of each *Land*.

The European Commission requires the responsible authorities to control at least 1% of the receivers of direct payments for each standard, unless other control rates are fixed by national law (Article 44 of Regulation 796/04). The selection of farms to be controlled is based on a preceding risk analysis as required by Commission Regulation 796/04 (Article 45). In order to harmonise the controls across the national territory, the *Bund-Länder-Arbeitsgruppe* also develops criteria for the systematic controls of cross compliance (on-the-spot checks, section III of Commission Regulation 796/04). These criteria are a subset of the standards relevant for cross compliance and consist of those provisions that are systematically controllable, either by inspecting the documentation that has to be present on the farm, or by visual

²² E.g. Checkliste zur Einhaltung der "Cross-compliance"-Anforderungen in Mecklenburg-Vorpommern, Stand 18.01.2006, available at <http://www.landwirtschaft-mv.de/content/start.php>. Links to the checklists of other *Länder* can be found at <http://www.dlg.org/de/landwirtschaft/agrarsoftwarenet/cclisten.html>.

²³ E.g. Checkliste zur Einhaltung der "Cross-compliance"-Anforderungen in Mecklenburg-Vorpommern, Stand 18.01.2006, available at <http://www.landwirtschaft-mv.de/content/start.php>. Links to the checklists of other *Länder* can be found at <http://www.dlg.org/de/landwirtschaft/agrarsoftwarenet/cclisten.html>.

examinations (e.g. non-removal of landscape elements, apparent leak-tightness of storage facilities, see below).²⁴

In general, control of the national legislative standards related to environment, water and nature conservation, good agricultural practice, public, animal and plant health and animal welfare is carried out by a number of technical authorities of the *Länder*, mostly at the district level (*Landkreise*). Nature conservation agencies, water agencies, food agencies, veterinary agencies, environment agencies and agricultural agencies are in charge of controlling compliance with the respective provisions of each legislative area (*Fachrecht*). The allocation of competencies is regulated by *Länder Ordinances*.²⁵

Similarly, the competencies for the systematic controls (on-the-spot checks) of the cross compliance standards are assigned by the *Länder* administrations. The sample for the systematic on-the-spot controls is gained via risk analysis²⁶, carried out by the control bodies or in their order. The responsibility for the cross compliance controls may be centralised at the agriculture agencies²⁷ or shared among different authorities. Even if different technical authorities are involved, efforts are made to co-ordinate the controls. In Bavaria and Mecklenburg-Western Pomerania, for instance, all cross compliance controls are planned by a central unit. Control teams are set up which consist of staff from different agencies, so that a single visit at one farm is sufficient to control all standards at once. This approach also aims at ensuring that the controls are carried out in a consistent way. Furthermore, it allows for the agriculture agencies, who are experienced with the Integrated Administration and Control System (IACS), to deal with the IACS documentation requirements.²⁸

The on-the-spot checks are based on the control criteria established by the *Bund-Länder-Arbeitsgruppe* (see above). However, if during a control visit offences against cross compliance standards are discovered that are not covered by the control criteria, they will be recorded as relevant for cross compliance. Also, offences against standards relevant for cross compliance discovered during cross compliance-independent controls by the technical authorities will have to be taken into account

²⁴ Nitsch and Osterburg 2005: Arbeitsberichte des Bereichs Agrarökonomie 07/2005: Cross compliance (CC) in der EU und Ökologischer Leistungsnachweis (ÖLN) in der Schweiz – eine vergleichende Analyse. <http://www.bw.fal.de/download.htm>, p. 75.

²⁵ *Zuständigkeitsverordnungen*.

²⁶ Since the systematic approach is new and specialised authorities are not familiar with risk-assessment in all areas, there is often not much experience, which criteria to use and what weight to give them in an integrated risk-assessment. E.g. in Mecklenburg-Vorpommern in 2005 non-compliance of farms chosen through risk-assessment was not significantly higher than in the random sample. The approach for risk-assessment in Germany is currently evaluated.

²⁷ In Schleswig-Holstein, for instance, the *Ämter für ländliche Räume* are in charge of all CC controls. See Landesverordnung zur Bestimmung der Zuständigkeit für systematische Kontrollen (cross compliance) im Rahmen der Durchführung der Reform der Gemeinsamen Agrarpolitik der Europäischen Union vom 22. Oktober 2005. GVOBl. 2005, p. 520.

²⁸ Deimel, M. 2005: Cross compliance – Die neuen Regelungen im Rahmen der GAP, ihre Umsetzung in der Praxis und erste Erfahrungen. Vortrag anlässlich des Agrarrechtsseminars der Deutschen Anwaltsakademie in Zusammenarbeit mit der Deutschen Gesellschaft für Agrarrecht e.V. am 28. September 2005 in Goslar. <http://www.dgar.de/info/Goslar2005/Deimel.pdf>.

(administrative checks²⁹, “cross checks”). The cross checks may be initiated either by authorities or by any other party.

Following the control procedure, a control report is made.³⁰ An consistent approach for the control reports was developed by the Bund-Länder-Arbeitsgruppe. The Länder adapted this framework according to specific requirements resulting from their respective Länder legislation, and amended it according to their internal administrative requirements.

The control reports are documented within the *Länder*³¹ and centrally collected within the national IACS³² database at the Bavarian Agricultural Ministry in Munich³³. The so called *Zentrale InVeKoS-Datenbank* (ZID) is an essential element for the communication between the involved authorities (paying agency and competent control authorities). The forwarding of control results or hints for cross checks for other responsible bodies happens mostly via ZID. It organises and manages this data and reports to the *Bund-Länder-Arbeitsgruppe*, which is responsible for its further evaluation.

The application of reductions strictly follows the provisions of Commission Regulation 796/2004 (Articles 66 and 67). Penalty rates vary according to the severity of the non-compliance and the number of repetition, ranging from 1% to 15% in the case of negligence, to at least 15% where intentional non-compliance is involved.

The mentioned *Bund-Länder-Arbeitsgruppe* elaborated rating specifications that support the controller in his decision on possible sanctions. If possible, potential cases of non-compliance were described and assigned to a “rule rating” (*Regelbewertung*). The criteria “severity”, “extent”, “permanence” and “repetition” demanded in Article 7(1) of Regulation (EC) No 1782/2003 in connection with Article 41 of Regulation (EC) 796/2004 were incorporated into the rule rating.

For example in cases of infringements that normally cause damage to the health of humans or animals or the environment, the rule rating was increased onto 5%. Other non-compliances that are not due to cause such impacts, like for example lacking documentation, were rated by 1%. In individual cases the controller naturally can, based on his expert assessment on-the-spot, deviate from the rule rating. In this case the control forms demand an explanatory statement concerning the deviation.

The rule rating system has proved to be successful. Within Germany it brought forth an almost homogeneously assessment of non-compliance by the controllers and guards against distortion of competition in Germany. However, Bagatelle clauses deviating from EU-law, that would allow to fully refrain from sanctioning, do not exist.

²⁹ At present Germany makes no use of the option according to Article 43 of Regulation (EC) No 796/2004 (administrative checks).

³⁰ Control reports contain any detected non-compliance and an assessment of its severity, extent, permanence and repetition.

³¹ The database allows an online registration.

³² Integrated Administration and Control System (*Integriertes Verwaltungs- und Kontrollsystem, InVeKoS*).

³³ Set up with the mandate of all Bundesländer, extending the former existing database for the registration of animals (HIT-Datenbank - Herkunftssicherungs- und Informationssystem für Tiere).

The calculation of reductions for a direct payment receiver is proposed by the ZID and is approved by competent controller. Thus the assessment proposal is available for the paying agency and enables it to issue a respective reduction notification to the direct payment receiver. Calculations are based on the provisions of Regulation (EC) No 796/2004. For 2005 in Germany, this system has worked without problems.

3.3 Farmers response to Cross Compliance

Farmers in Germany take up a rather reserved stance on cross-compliance. They mainly complain about the bureaucratic burdens and the lack of buffer and scope of discretion when determining infringements.

Moreover farmers and farmers associations fear a further amendment of the Cross Compliance standards in the future.

4 Environment

4.1 Statutory Management Requirements

4.1.1 Birds and Habitat Directive

General requirements

The German lists of standards relevant for cross compliance contain several requirements from the Bird Directive³⁴ and Habitat Directive³⁵ that apply to all farmers. For instance, landscape elements (see 4.2.3) and protected biotopes may not be damaged or removed, wild birds may not be hunted, captured or killed, their nests must not be removed or destroyed, and hunting regulations must be followed.

Natura 2000

Additional constraints may apply to agricultural areas within sites protected under the Bird and Habitat Directives (Natura 2000). The Habitat Directive required EU Member States to transpose its provisions into national law and transmit the national list of proposed sites by 1995. Since Germany did not meet this deadline, an infringement procedure was initiated by the European Commission concerning the state of designation respective areas. The latter has been resolved recently, but another infringement procedure is still ongoing concerning the insufficient implementation of specific articles of the directive. Basically, the Habitat Directive

³⁴ Council Directive 79/404/EEC of 2 April 1979 on the conservation of wild birds. OJ L 103, 25.4.1979, p. 1.

³⁵ 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.

was implemented into German national law in 1998 by an amendment of the Federal Nature Protection Act³⁶, which also integrates the provisions of the Bird Directive.

It is the responsibility of the *Länder* to propose the Natura 2000 sites and to designate them as protected areas once they are adopted. Germany completed the lists of proposed Sites of Community Importance (Habitat Directive) and of Special Protected Areas (Bird Directive) in 2005. However, designation of the areas is not yet complete, so regulations and management plans setting up protection measures and farming constraints are not in place yet for most areas.

Many sites of community importance under the Habitat Directive are already part of nature or landscape conservation areas, or water protection areas. In this case, sites do not have to be defined as protection areas anew but a management plan has to be elaborated (§ 33 Abs. 4 Federal Nature Protection Act). The favourable conservation status of species and habitats may be achieved by different instruments. Authorities may issue ordinances that lay down the conservation objectives for a certain protection area and define activities that are required, not permitted or need a special authorisation. However, other instruments may be adopted such as contractual and voluntary agreements, protection programmes and others. Baden-Württemberg, for instance, gives priority to contractual solutions.³⁷

Large portions of the areas submitted for Natura 2000 are under agricultural cultivation and in nearly all cases the agricultural use will be kept even after the official designation. For several habitat types and species, the agricultural use of land can be considered as a precondition for its conservation value. But in some cases farmers will face particular constraints and restrictions to achieve the favourable conservation status of the sites.

These constraints are likely to differ largely as the regulations for each individual protection area will vary according to the conservation objectives, the species and habitats concerned, and the degree to which they are threatened. In some cases, protection ordinances prohibit or restrict the use of fertiliser and pesticides, the ploughing of grassland or grazing, or set limits for livestock densities.³⁸ In most cases the current modes of agricultural practices can be maintained (especially when they have been a precondition for the conservation value of the area) and in most other cases a compensation for income losses due to restrictions is be paid through agri-environmental schemes or §38 of the Rural Development Regulation³⁹ (see section 8.3.3).

Projects (e.g. building of facilities) that may affect the conservation goals of protected areas are subject to authorisation. The permit issued by the authorities may impose additional conditions that must be complied with.

³⁶ Gesetz über Naturschutz und Landschaftspflege (Bundesnaturschutzgesetz, BNatSchG) 2002, BGBl I 2002, 1193.

³⁷ See <http://rips-uis.lfu.baden-wuerttemberg.de/rips/natura2000/navigation/start.htm>.

³⁸ Such legal restrictions and prohibitions will mainly be applied in cases where Natura 2000 areas are simultaneously designated as national conservation areas (protected areas according to IUCN categories I or II). See for instance Verordnung des Regierungspräsidiums Chemnitz zur Festsetzung des Naturschutzgebiets "Halbmeiler Wiesen" vom 17. Februar 2005.

³⁹ Council Regulation (EC) No 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD), OJ L 277 of 21 October 2005.

4.1.2 Protection of groundwater

The Groundwater Directive⁴⁰ was implemented in Germany by the 1997 Groundwater Ordinance⁴¹. It prohibits or restricts direct and indirect discharges of certain hazardous substances into the groundwater. Of those, mineral oil products and chemical plant protection products are the main substances relevant for farmers. Farmers have to ensure that these substances are not discharged into groundwater and that facilities for storage of pesticides and oil products and farm petrol stations are constructed and operated accordingly. These requirements are relevant for cross compliance and listed in the information brochures. Storage facilities have to be leak-proof and stable, based on solid and impermeable ground, and resistant to mechanical, thermal and chemical influences.

The Federal Water Act⁴² (§ 19g) and ordinances specified by the *Länder* governments⁴³ make detailed prescriptions concerning the construction of facilities for storage and use of substances hazardous to water, which, however, are not themselves relevant for cross compliance. Tanks usually have to be double-walled, the bottom plate may have to be made of concrete, and a number of other rules apply to the design of tubes, filling devices, etc.

A similar situation exists with regard to facilities for storage and filling of slurry, manure and silage effluent. In order to fulfil the cross compliance conditions, it is sufficient if they are stable and leak-proof, and constructed in a way that prevents discharge into groundwater, surface waters, or the sewer system. National or regional building laws specify in detail how such facilities are to be constructed, but compliance with these specific requirements is not controlled in the context of cross compliance.

Thus in the case of the Groundwater Directive, the German Federal and *Länder* building laws impose a number of additional standards that, strictly speaking, are not relevant for cross compliance; however, it is not always possible to clearly separate them from discussions about cross compliance (see chapter 8.3).

4.1.3 Sewage sludge directive

In 2001, 2.43 million tonnes of sewage sludge were produced in Germany, of which 57.6% (1.40 million tonnes) was recycled in agriculture.⁴⁴ The German Sewage

⁴⁰ 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.

⁴¹ Verordnung zur Umsetzung der EG-Richtlinie 80/68/EWG des Rates vom 17. Dezember 1979 über den Schutz des Grundwassers gegen Verschmutzung durch bestimmte gefährliche Stoffe vom 18. März 1997 (BGBl I 1997, p. 542 ff., 22.03.1997).

⁴² Gesetz zur Ordnung des Wasserhaushalts (Wasserhaushaltsgesetz), zuletzt geändert durch Art. 2 G v. 25. 6.2005 I 1746.

⁴³ Verordnungen über Anlagen zum Umgang mit wassergefährdenden Stoffen und über Fachbetriebe (VAwS).

⁴⁴ Statistisches Bundesamt, Umwelt – Öffentliche Wasserversorgung und Abwasserbeseitigung, Fachserie 19/Reihe 2.1, Wiesbaden 2003.

Sludge Ordinance⁴⁵ regulates the recycling of sewage sludge and transposes the Sewage Sludge Directive⁴⁶ into national law, specifying the conditions for the application of sewage sludge in agriculture as required by Article 3 of the Directive. Only sewage sludge from household or communal waste waters may be used in agriculture.

The following standards are relevant for farmers in the context of cross compliance:

The supplier of sewage sludge must notify the agricultural application of the sludge to the competent authority two weeks in advance by way of a delivery note; the farmer has to confirm the application.

The application of sewage sludge has to be adjusted to the nutritional requirements of the plants, taking into account the nutrients and organic substance present in the soil as well as further site and growing conditions. Here the relevant provisions of the German Fertilisation Ordinance (see section 4.1.4) apply, which means that the nutrient balance prepared by the farmer has to include nutrients applied to the soil in the form of sewage sludge.

Prior to the application of sewage sludge, the soil needs to be analysed with respect to pH-value and its content of several heavy metals, plant-available phosphate, potassium and magnesium. The costs for these measurements are borne by the supplier of the sewage sludge. The application of sewage sludge is not permitted if the concentrations of the pollutants exceed certain limit values (see Table 2), and if the pH-value of the soil is or should be 5 or lower.

Several other restrictions exist to the agricultural application of sewage sludge. The use of sludge is forbidden on soils where fruits and vegetables are grown, on grassland, on agricultural land in nature conservation or water protection areas, and on riparian zones of 10m width. On soil where forage crops, sugar beets (if the leaves are used as feed), silo maize and green maize are grown, sewage sludge may only be applied prior to sowing and has to be worked into the soil.

The quantity of applied sewage sludge may not exceed 5 tonnes of dry matter per hectare within three years. For sewage sludge compost, the maximum quantity is 10 tonnes. The concentrations of heavy metals and organic pollutants in the sewage sludge must not exceed certain limit values (see Table 2).⁴⁷

⁴⁵ Klärschlammverordnung (AbfKlärV) vom 15.04.1992 (BGBl. I 1992, p. 912.934, 28.04.1992). (Discussions on the amendment of the sewage sludge ordinance are currently taking place (see e.g. AGRA-Europe 50/06, 11. Dezember 2006))

⁴⁶ 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.

⁴⁷ See also Informationsbroschüre für die Empfänger von Direktzahlungen über die anderweitigen Verpflichtungen (cross compliance), Bund-Länder-Arbeitsgruppe.

Table 2 Application of sewage sludge: maximum values for heavy metals and organic pollutants in soil and sludge

	Limit value soil (mg per kg dry matter)	Limit value sewage sludge (mg per kg dry matter)
Lead	100	900
Cadmium	1.5	10
Chromium	100	900
copper	60	800
Nickel	50	200
Mercury	1	8
Zinc	200	2,500
Several PCBs		0.2
PCDD/PCDF		100 ng toxicity equivalent ⁴⁸
Halogenated organic compounds (AOX)		500

4.1.4 Nitrate directive

The provisions of the Nitrate Directive⁴⁹ are implemented in Germany by the Fertilisation Ordinance⁵⁰, which has recently been amended, and is substantiated by legislation of the *Länder*. The Fertilisation Ordinance applies uniformly across the national territory, which makes the definition of vulnerable zones obsolete (Art. 3 (5) Nitrate Directive). It thus simultaneously implements the measures called for in Article 4/Annex II and in Article 5/Annex III of the Nitrate Directive (see Table 3).

In Germany farmers are obliged to avoid the application of manure and/or artificial fertilisers in specific areas during certain periods. For example near watercourses and lakes a safety distance should be kept especially in areas with high slopes. The application of manure and artificial fertilisers is also prohibited on flooded or frozen ground.

Before the amendment, the Fertilisation Ordinance did not regulate the application of fertiliser on steeply sloping ground as required by the Nitrate Directive, and it allowed a maximum amount of 210 kg N to be applied on grassland generally, as opposed to the limit of 170 kg set by the Directive. Due to these deficits the European Commission initiated an infringement procedure against Germany which was pending until late 2006, although the amended Ordinance already addressed these deficits.⁵¹

The German legislature envisioned to make the upper limit of 170 kg N more flexible, using the flexibility options of Annex III 2.(b) of the Directive. Germany applied for an exemption that would allow the spreading of up to 230 kg N per

⁴⁸ Formula for calculation is given in the Annex of the Sewage Sludge Ordinance.

⁴⁹ 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.

⁵⁰ Verordnung über die Anwendung von Düngemitteln, Bodenhilfsstoffen, Kultursubstraten und Pflanzenschutzmitteln nach den Grundsätzen der guten fachlichen Praxis beim Düngen (Düngeverordnung – DüV). BGBl. I 2006 S. 34 ff., 13. Januar 2006).

⁵¹ AGRA-EUROPE 51/05, 19. December 2005, Länderberichte p. 17.

hectare per year on grassland under certain conditions. Farmers' associations welcomed this decision, arguing that the farmers currently suffer competitive disadvantages compared to other Member States where similar exemptions are in place (e.g. the Netherlands).⁵² In November 2006 the EU Nitrates Committee approved this proposal of the German federal government for a derogation under the Nitrates Directive.⁵³

Table 3 shows the requirements of the Nitrate Directive and the corresponding provisions of the German legislation that are relevant for cross compliance and listed in the Checklists for farmers.

Table 3 Implementation of the Nitrate Directive

Nitrate Directive	Implementation in Germany (Fertilisation Ordinance and <i>Länder</i> legislation): provisions relevant for cross compliance
<i>Annex II A: codes of good agricultural practice should contain provisions on:</i>	
Periods when land application of fertiliser is inappropriate	Crop land may not be fertilised from 1 November till 15 January; grassland may not be fertilised from 15 November until 15 January.
Application of fertiliser to steeply sloping ground	The amendment of the Ordinance establishes regulations concerning agricultural crop land that has a steep slope angle with respect to a water body. On these areas, fertiliser may only be applied subject to certain conditions, e.g. it has to be injected or worked into the soil immediately.
Land application of fertiliser to water- saturated, flooded, frozen or snow- covered ground	Fertilisers may only be applied if the soil is able to absorb it, i.e. the application is not permitted on soil that is flooded, water saturated, snow covered or frozen.
Land application of fertiliser near water courses	Direct discharge of fertilisers into surface waters has to be prevented. <i>Länder</i> laws specify the distance from waters up to which application of fertilisers is permitted. (e.g. 7 m in Mecklenburg- Western Pomerania)
Capacity and construction of storage vessels for livestock manures (capacity)	Currently, the provisions concerning storage capacity differ between the

⁵² AGRA-EUROPE 52/05, 27. December 2005, Länderberichte p. 23.

⁵³ Agra Europe 47/06, 20.November 2006; ENDS Europe DAILY 2207, 17/11/06, ENDS Europe DAILY 2232, 03/01/07.

Nitrate Directive	Implementation in Germany (Fertilisation Ordinance and <i>Länder</i> legislation): provisions relevant for cross compliance
must exceed that required for storage throughout the longest period during which land application is prohibited)	<i>Länder</i> . In some <i>Länder</i> , a storage capacity of 2 months is sufficient (e.g. Lower Saxony), while in others (e.g. Hesse, Mecklenburg-Western Pomerania) it has to be 6 months. However, <i>Länder</i> laws are in the process of being amended to stipulate a minimum storage capacity of 6 months, unless environmentally compatible disposal of excess livestock manure is ensured. ⁵⁴ Existing facilities have to be upgraded by 31 December 2008. Until then, the capacity of storage containers has to be at least such that the periods where application of fertiliser is not permitted can be bridged.
Procedures for the land application of both chemical fertiliser and livestock manure	
<i>Annex III</i>	
Limitation of application of fertilisers to be based on a balance between nitrogen requirements of the crops and nitrogen supply to the crops	<ul style="list-style-type: none"> • If more than 50 kg N per hectare and year are applied, the farmer has to determine the nitrogen requirement of the crops and the amount of nitrogen present in the soil. • Prior to the application of organic or organic-mineral fertilisers (including manure) the total nitrogen content has to be determined, in the case of liquid manure also the content of ammonium-N. • Farmers have to keep documentation of the nutrient amounts in the soil and in the fertilisers, and of all application activities. A nutrient balance has to be provided by 31 March for the previous year.
Maximum amount of manure per hectare: 170 kg N	<ul style="list-style-type: none"> • Restrictions to the use of fertiliser have been brought in line with the EU Directive by the recent amendment.

Nitrate Directive	Implementation in Germany (Fertilisation Ordinance and <i>Länder</i> legislation): provisions relevant for cross compliance
	<p>At farm average, no more than 170 kg N per hectare from fertiliser of animal origin may be applied. An upper limit of 230 kg N for grassland under certain conditions has been adopted by the German legislator and was recently approved by the EU Nitrates Committee⁵⁵.</p> <ul style="list-style-type: none"> • <i>Additional restriction for crop land: after harvest of the main crop the application of manure is limited to 40 kg ammonium-N or 80 kg total N per hectare.</i>

4.2 Good agricultural and environmental condition (GAEC)

An Ordinance issued by the federal government contains the provisions on maintenance of land in good agricultural and environmental condition.⁵⁶ The regional authorities may approve exceptions in certain cases or areas, and are also responsible for measures concerning the retention of permanent pasture.

Rules on soil use and good farming practice (GFP) have existed in Germany before this new Ordinance was adopted. The Federal Soil Protection Act⁵⁷ (BBodSchG, §17) and the Federal Nature Conservation Act⁵⁸ (BNatSchG, § 5) prescribe several rules concerning agricultural soil use. In summary, the previously existing German legislation overlaps in large parts with the new GAEC standards, the latter being more specific and detailed, for instance regarding crop rotation, minimum soil coverage, and the definition of landscape features.

As regards the obligations for maintenance of set-aside land, the German standards are relatively low compared to those of agri-environment programmes. This ensures that most agri-environment measures concerning the extensive use of grassland will continue to be eligible for EU funding.⁵⁹

⁵⁵ Agra Europe 47/06, 20.November 2006

⁵⁶ Verordnung über die Grundsätze der Ehaltung landwirtschaftlicher Flächen in einem guten landwirtschaftlichen und ökologischen Zustand (Direktzahlungen-Verpflichtungenverordnung – DirektZahlVerpflV), BGBl. I Nr. 58, 2004, p. 2778-2784, 12. November 2004.

⁵⁷ Gesetz zum Schutz vor schädlichen Bodenveränderungen und zur Sanierung von Altlasten (Bundesbodenschutzgesetz), BGBl. I 1998, 502.

⁵⁸ Gesetz über Naturschutz und Landschaftspflege (Bundesnaturschutzgesetz, BNatSchG) 2002, BGBl. I 2002, 1193.

⁵⁹ Nitsch and Osterburg 2005: Arbeitsberichte des Bereichs Agrarökonomie 07/2005: Cross Compliance (CC) in der EU und Ökologischer Leistungsnachweis (ÖLN) in der Schweiz – eine vergleichende Analyse. <http://www.bw.fal.de/download.htm>.

The following tables present the GAEC standards as given by Annex IV of Council Regulation 1782/2003 and the national implementation of these standards. Where possible, they also list the corresponding provisions of national law that define the good farming practice (GFP) independent of cross compliance. The national GFP standards are legally binding for all farmers, while the German GAEC standards (DirektZahlVerpflV) are binding only for farmers as long as they receive direct payments.

4.2.1 Soil erosion (GAEC 1)

Table 4 National implementation of Annex IV: soil erosion

Annex IV standard (Council Regulation 1782/2003)	German national standards for cross compliance (DirektZahlVerpflV)	German GFP standards (national law)
		On erosion-prone slopes, in flood plains, at sites with elevated groundwater table and in boggy locations, farmers shall refrain from ploughing up grassland (BNatSchG).
Minimum coverage	To prevent soil erosion, at least 40% of a farm's crop land area have to be covered by plants during the period between 1 December and 15 February. A farmer may choose either to grow at least 40% winter grain or winter catch crop and to sow them before 1 December, or not to plough in the harvest residues before 15 February. ⁶⁰ The regional administrations of the <i>Länder</i> can decide that this is not applicable in areas with low danger of erosion or fair weather conditions.	
Minimum land management reflecting site specific conditions	none	<ul style="list-style-type: none"> • The soil shall be worked in a manner that is appropriate for the relevant site, taking weather conditions into account (BBodSchG) • soil erosion shall be

⁶⁰

In Bavaria, exceptions from this rule are possible under certain conditions (AGRA-EUROPE 43/06, 23.Oktober 2006, KM 26)

Annex IV standard (Council Regulation 1782/2003)	German national standards for cross compliance (DirektZahlVerpflV)	German GFP standards (national law)
		<p>avoided wherever possible, by means of site-adapted use, especially use that takes slope, water and wind conditions and the soil cover into account (BBodSchG)</p> <ul style="list-style-type: none"> Land used for agriculture must be appropriately managed in accordance with the requirements of the site in question, and the sustained fertility of the soil and long-term usability of the land must be ensured (BNatSchG)
Retain terraces	<p>Terraces must not be removed.</p> <p>The competent regional authority can approve the removal of a terrace if there are no soil erosion risks.</p>	

4.2.2 Maintenance of organic matter and soil structure (GAEC 2)

Table 5 National implementation of Annex IV: soil organic matter and soil structure

Annex IV standard (Council Regulation 1782/2003)	German national standards (DirektZahlVerpflV)	German GFP standards
		<ul style="list-style-type: none"> The soil structure shall be conserved or improved (BBodSchG) The soil's humus content, as is typical for the site in question, shall be conserved, especially by means of adequate input of organic substances or of reduction of the

		intensity with which the soil is worked (BBodSchG)
Standards for crop rotations where applicable	<p>For the maintenance of organic matter in the soil and of the soil structure, farmers can choose between different options.⁶¹</p> <p>Either a crop ratio may be kept that includes at least three crop cultures, each of which has to cover at least 15% of the crop land area. Different cereal species count as independent cultures, as well as summer and winter crops and set-aside land. Crop land where permanent cultures or perennial cultures are grown are exempted from these provisions.</p> <p>If this crop ratio is not realised, farmers have to either provide an annual humus balance or a soil analysis on the basis of soil samples at least every six years. Detailed guidance is provided on how these analyses are to be conducted, and limit values for the content of humus are defined. If these limit values are exceeded, the farmers are obliged to make use of consulting offers and eventually to prove that farming practices have been changed in order to increase or maintain the organic matter content of the soil.</p>	The soil's biological activity shall be conserved or promoted by means of appropriate crop rotation (BBodSchG)
Arable stubble management	<p>Stubble burning is prohibited.</p> <p>For phytosanitary reasons, the responsible authority of the <i>Länder</i> can approve exceptions to the ban on stubble burning.</p>	
Appropriate machinery use	none ⁶²	Soil compaction shall be avoided as far as possible, especially by taking the relevant soil type and soil humidity into account, and by controlling the pressure exerted on the soil by equipment used for

⁶¹ Here, Germany has established measures in their cross compliance that go beyond the compulsory requirements in Annex IV of Reg. 1782/03

⁶² Recommendations on the use of machinery can be found in guidance documents on good farming practice (Grundsätze und Handlungsempfehlungen zur guten fachlichen Praxis der landwirtschaftlichen Bodennutzung gemäß § 17 Bundes-Bodenschutzgesetz; Bundesanzeiger Nr. 73 vom 20.04.1999); however, these are not relevant for cross compliance.

		agricultural soil use (BBodSchG)
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4.2.3 Minimum maintenance of set-aside lands (GAEC 3)

Table 6 National implementation of Annex IV: maintenance of set-aside lands

Annex IV standard (Council Regulation 1782/2003)	German national standards (DirektZahlVerpflV)	German GFP standards
Minimum livestock stocking rates or/and appropriate regimes	none	
Maintenance of set- aside land/Protection of permanent pasture	<p>On obligatory or voluntary set-aside arable land, vegetation cover has to be re-established, either by natural regeneration or by sowing. The plant cover is to be cut and mulched or to be mowed and removed.</p> <p>Set-aside permanent pasture has to be cut and mulched at least once a year, or mowed with removal of the cut material at least every second year.</p> <p>For reasons of nature conservation or water protection the competent authority of the <i>Länder</i> can approve exceptions.</p> <p>With regard to the protection of wildlife, mulching, cutting and mowing is not permitted between 1 April and 15 July. However, a shortening of this period to two months is currently being discussed. According to a draft new ordinance, the retention period would end 15 June.⁶³</p>	
Retention of landscape features	Several landscape features are defined that may not be removed by farmers. Elements such as hedges, tree rows, groves, wetlands and single trees fall under this regulation if they fulfil certain criteria. ⁶⁴	<ul style="list-style-type: none"> The predominantly natural structural elements of field parcels that are needed for soil conservation, especially hedges, field shrubbery and trees, field boundaries and

⁶³ Agra-Europe 11/06, Länderberichte p. 40.

⁶⁴ Laender maintain the right to approve the removal of the terraces or the destruction of certain landscape features (e.g. trees or hedges).

Annex IV standard (Council Regulation 1782/2003)	German national standards (DirektZahlVerpflV)	German GFP standards
		terracing, shall be preserved (BBodSchG) <ul style="list-style-type: none"> Any avoidable impairments of existing biotopes must not be incurred (BNatSchG). The landscape components required for the interlinkage of biotopes must be preserved and, where possible, increased (BNatSchG).
Avoiding the encroachment of unwanted vegetation on agricultural land	none	

4.2.4 Permanent pasture

An additional instrument is employed to ensure that permanent pasture area does not decline beyond certain limits. This task is delegated to the *Länder* administrations. Action is taken only if permanent pasture area decreases beyond certain limit values – should this occur, the *Länder* will issue regulations restricting the ploughing of permanent pasture. These regulations then become relevant for cross compliance.

Each region has to determine the ratio of permanent pasture compared to total agricultural land on the basis of applications for direct payments, and to take measures if this ratio decreases beyond certain limit values, defined as:

- If the share of permanent pasture decreases by more than 5% with respect to the reference value, *Länder* administrations have to issue regulations making the ploughing of permanent pasture subject to approval.
- If the ratio decreases by more than 10%, the re-conversion of land into permanent pasture has to be ensured, i.e. farmers have to re-seed land that was ploughed, or establish new permanent pasture on different areas. The *Länder* administrations may already issue such regulations if the ratio decreases by at least 8%.

4.2.5 Potential environmental effects of GAEC standards

No empirical information is available as yet on the degree to which the introduction of the GAEC standards will have beneficial impacts on the environment. As Table 4, Table 5 and Table 6 show, the German GAEC standards in several cases either go

beyond GFP rules or are more specific, which implies that they might generally increase the environmental compatibility of farming practices.

The general discussion in Germany and most statements by stakeholders focus on the requirements for the maintenance of set-aside land. Since 700,000 hectares of set-aside land exist in Germany, and since the de-coupling of the agricultural subsidies may lead to additional areas being set aside, these provisions are of importance in terms of nature and landscape protection.⁶⁵ The rules that were established under GAEC are likely to contribute to keeping the landscapes open, and will thus have a positive environmental effect.⁶⁶ However, since mulching as a standardised mechanical low-cost measure is approved for the maintenance of lands, it might increasingly compete with more costly extensive livestock keeping practices on grassland areas.⁶⁷

There is concern that cross compliance might restrict the possibilities for agri-environment funding, which could eventually entail negative environmental consequences. Agri-environment funding schemes will probably have to be adapted in order to solve these conflicts. This issue is currently being analysed by a research project commissioned by the Federal Nature Protection Agency.⁶⁸ On the other hand, it is argued that the German GAEC standards have been set relatively low compared to those of agri-environment programmes, in order to ensure that agri-environment measures e.g. concerning the extensive use of grassland will continue to be eligible for funding.⁶⁹

The prohibition of mulching and mowing between April 1 and July 15 is considered essential for the protection of species by environmental NGOs. They thus vehemently oppose the envisioned shortening of the period.⁷⁰

5 Identification and registration of animals

5.1 Identification and registration of bovine animals

The German Livestock Movement Regulation⁷¹ (§ 24d-j) transposes the EC Regulations 1760/2000⁷² and 2629/97⁷³ regarding the identification of bovines into

⁶⁵ Nitsch, H. and B. Osterburg 2004: Cross Compliance als Instrument der Agrarumweltpolitik. *Landbauforschung Völkenrode* 3/2004 (54), p. 171-185.

⁶⁶ DVL and NABU 2005: Agrarreform für Naturschützer. Chancen und Risiken der Reform der Gemeinsamen Agrarpolitik für den Naturschutz.

⁶⁷ DVL and NABU 2005.

⁶⁸ Gemeinsame Agrarpolitik (GAP): Cross-Compliance und Weiterentwicklung von Agrarumweltmaßnahmen. F+E-Vorhaben des Bundesamtes für Naturschutz (BfN), FKZ 805 88 001; finalisation expected for July 2007.

⁶⁹ Nitsch and Osterburg 2005.

⁷⁰ AGRA-EUROPE 12/06, 20. March 2006, Kurzmeldungen p. 31.

⁷¹ Verordnung zum Schutz gegen die Verschleppung von Tierseuchen im Viehverkehr (Viehverkehrsverordnung - ViehVerkV), zuletzt geändert durch Art. 2 V v. 5.11.2004 I 2785.

⁷² 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

national law. The EC regulations are directly applicable in the Member States but in some places must be specifically defined by national legislation.

The checklists for farmers list the following provisions relevant for cross compliance in Germany:

- Livestock owners must identify each animal by double eartags. In case of loss, eartags have to be replaced. Calves have to be identified within 7 days after birth; animals that are imported from non-EU countries⁷⁴ within 7 days after arrival to the farm. Here the German law is more stringent than regulation 1760/2000, which stipulates identification to take place within a period of no longer than 20 days.
- Animal holders have to keep a register that contains the information required by the relevant EC Regulations and Directives (eartag number, birth date, sex, breed and eartag number of the dam, and name and address of suppliers or buyers of animals, and dates).⁷⁵ The format of the register is specified by the German ordinance: if it is kept in manual form, it has to be bound, chronological, and pages have to be numbered. If it is kept in computerised form, a printout has to be provided by the farmers in the case of controls. Registers have to be kept at least for three years.
- Farmers have to notify all changes in their cattle livestock to the regional authorities or directly to the central database, including birth, import, death, and slaughtering of animals. Notification can be either by mail, telephone, or internet.
- A cattle passport has to be kept for each individual animal. In order to apply for the passport, the cattle holder has to inform the authority of the animal's birth date, sex, breed, eartag number of the dam, his name and address, and the registration number of the farm. The cattle passport has to be handed back to the authorities if the animal is slaughtered on the farm, or given to the slaughterhouse operator. It must also accompany the animals during transport.

5.2 Identification and registration of ovine and caprine animals

As prescribed by the EC Regulation 21/2004⁷⁶ all ovine and caprine animals born after 9 July 2005 have to be identified by two identical non-reusable eartags at least within nine months after birth but in any case before they leave the holding. For

regarding the labelling of beef and beef products and repealing Council Regulation (EC) No 820/97.

⁷³ 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 eartags, holding registers and passports in the framework of the system for the identification and registration of bovine animals

⁷⁴ The identification of animals from other EU countries is recognised as equivalent, these animals do not have to be identified anew.

⁷⁵ See <http://europa.eu.int/eur-lex/lex/LexUriServ/LexUriServ.do?uri=CELEX:52005DC0009:EN:HTML>.

⁷⁶ 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.

goats, a mark on the pastern may be used as the second means of identification instead of the second eartag. By prescribing a period of nine months, Germany has utilised the possibility for derogation given by Article 4 (1) of the Regulation, which generally requires the period not to be longer than six months.

For ovine and caprine animals born before July 9, 2005, the regulations prescribed by the Livestock Movement Regulation apply. These animals have to be identified by one eartag (or tattoo) within six months after birth and in any case before leaving the holding.

All holders of ovine and caprine animals have to keep a register as required by Article 5 of Regulation 21/2004. The register has to contain the information required by Annex A of the Regulation; no further data requirements are added and thus Article 5 (2) is not used. However, the format of the register is specified: if it is kept in manual form, it has to be bound, chronological, and pages have to be numbered. If it is kept in computerised form, a printout has to be provided by the farmers in the case of controls. Registers have to be kept at least for three years.

As required by Article 6 of the Regulation, whenever an animal is moved within the national territory between two separate holdings, it has to be accompanied by a movement document. This document has to contain the information prescribed by Annex C of the Regulation, no further data requirements being added. It has to be kept for at least three years.

6 Public, animal and plant health

6.1 Plant protection products

The Directive on the placing of plant protection products on the market⁷⁷ was implemented by way of the Federal Plant Protection Act.⁷⁸ Provisions from several national ordinances⁷⁹ are also relevant for cross compliance and listed by the brochures and checklists for farmers. Table 7 compares the national standards to those prescribed by EU law.

⁷⁷ 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.

⁷⁸ Gesetz zum Schutz der Kulturpflanzen (Pflanzenschutzgesetz - PflSchG) in der Fassung vom 14.5.1998, zuletzt geändert durch Gesetz zur Neuordnung des Lebensmittel- und des Futtermittelrechts vom 1.9.2005.

⁷⁹ Pflanzenschutz-Sachkundeverordnung in der Fassung vom 14.10.1993, zuletzt geändert durch Erste Verordnung zur Änderung der Pflanzenschutz-Sachkundeverordnung vom 7.5.2001, BGBl I 2001, 885; Pflanzenschutzmittelverordnung in der Fassung vom 9.3.2005, zuletzt geändert durch Sechste Verordnung zur Änderung pflanzenschutzrechtlicher Vorschriften vom 30.9.2005, BGBl I 2005, 2916; Pflanzenschutz-Anwendungsverordnung in der Fassung vom 10.11.1992, zuletzt geändert durch Dritte Verordnung zur Änderung der Pflanzenschutz-Anwendungsverordnung vom 23.7.2003, BGBl I 2003, 1533; Bienenschutzverordnung in der Fassung vom 22.7.1992, zuletzt geändert durch Gesetz zur Neuorganisation des gesundheitlichen Verbraucherschutzes und der Lebensmittelsicherheit vom 6.8.2002, BGBl I 2002, 3082.

Table 7 National implementation of the Directive on plant protection products

EU provisions	Corresponding provisions of German law relevant for cross compliance
Plant protection products may not be placed on the market and used unless Member States have authorised them (91/414/EEC)	Only plant protection products that have been authorised may be used
Plant protection products must be used properly (91/414/EEC)	<ul style="list-style-type: none"> • Farmers using plant protection products have to have a certificate of competence (<i>Sachkundenachweis</i>) proving they are trained in the proper use of these products • Pesticide application equipment may only be used if it is subject to regular inspections which are documented by a sticker on the device • Constraints to the application of plant protection products (e.g. no application of plant protection products in nature protection areas and national parks, prohibition of certain substances) have to be complied with • Plant protection products may not be applied in close proximity of surface waters (minimum distances differ between the <i>Länder</i>) • Constraints to the application of plant protection products related to the protection of bees have to be complied with
EC regulation on food safety 178/2002	<ul style="list-style-type: none"> • The application of plant protection products has to be documented according to the provisions of the EC regulation on food safety (see 6.2).

6.2 Food traceability systems/matters of food safety

There is an ongoing debate between the EU Commission and the agricultural council as to what extent the requirements of the so-called “hygiene package” (EC regulations 852/2004, 853/2004 and 183/2005) are part of food safety standards relevant for cross compliance. The Commission argues that the hygiene regulations play an essential role in implementing the food safety regulation, and that furthermore by controlling

the provisions of the hygiene package, compliance with the food safety regulation can be verified. Agricultural ministers of the Member States, by contrast, have been trying to prevent inclusion of the hygiene provisions in the cross compliance scheme, and have asked the Commission to at least specify a concise list of standards that are to be linked to the direct payments. The Commission has responded to this request, excluding the more general requirements such as “best possible protection of raw material against contamination” from cross compliance.⁸⁰

The information brochures and checklists for German farmers were updated to include standards relevant in 2006 when the outcome of this conflict was not yet known. They therefore list all provisions from the EC regulation 178/2002 relevant for cross compliance (Articles 14, 15, 17-20), the more specific provisions of the EC regulations 852/2004, 853/2004, and 183/2005 on hygiene of food and feed, including special requirements for the production of milk and eggs, and individual provisions from the German Ordinance on Animal Feed⁸¹ concerning substances prohibited in animal feed. The result is a long list of standards that will not be reproduced in detail here.

The standards that will probably pose the largest challenges to farmers are those regarding traceability systems, documentation and production, and storage and transportation processes.

- The traceability of food and feed has to be ensured. To this end, farmers have to document from whom they have been supplied with food or feed, and to whom their products have been supplied.
- Production facilities, equipment, containers, vehicles, and storage facilities have to be clean or be disinfected before use or between loads (Annex of regulation 852/2004).
- The use of pesticides and veterinary medicines must be documented.
- Farmers and feed business operators are responsible for ensuring the safety of their products. If there is any reason to suspect that food or feed products pose a health hazard, they have to inform the competent authorities.

6.3 Notification of diseases

In the area of animal health and notification of diseases, several provisions of EC Regulation 999/2001⁸², the national Animal Infectious Disease Act⁸³ which implements the Directives 2003/85/EC⁸⁴, 92/119/EEC⁸⁵ and 2000/75/EC⁸⁶, and

⁸⁰ AGRA-EUROPE 12/06, 20.3.2006, Europa-Nachrichten p. 8-9.

⁸¹ Futtermittelverordnung, BGBl I 1981, p. 352, in der Fassung vom 7.3.2005, zuletzt geändert durch Verordnung zur Änderung futtermittelrechtlicher und verfütterungsverbotsrechtlicher Verordnungen vom 22.12.2005.

⁸² 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.

⁸³ Tierseuchengesetz, geändert durch Art. 2 § 3 Abs. 5 G v. 1. 9.2005 I 2618.

⁸⁴ Council Directive 2003/85/EC of 29 September 2003 on Community measures for the control of foot-and-mouth disease repealing Directive 85/511/EEC and Decisions 89/531/EEC and 91/665/EEC and amending Directive 92/46/EEC. OJ L 306, 22/11/2003 p. 1 – 87.

provisions of the Directive 96/22/EC⁸⁷ and the corresponding national ordinance⁸⁸, are relevant for cross compliance in Germany.

Prohibition of substances having a hormonal or thyrostatic action and of β -agonists (Directive 96/22/EC)

The use of substances having a thyreostatic, estrogenic, androgenic and gestagenic effect, of stilbenes and β -agonists is generally prohibited. For therapeutical purposes certain medicinal products with hormonal action or β -agonists may be used; however, they may be applied by veterinarians only and must not be in the possession of farmers. The veterinarian has to document the treatment in a register.

For breeding animals, medicinal products with hormonal action may be used to synchronise oestrus and to prepare animals for the transfer of embryos. In this case, the following provisions have to be complied with:

- The farmer has to have a prescription of an authorised medicinal product by a veterinarian.
- Animals that were treated must be clearly identified.
- The treatment has to be documented in the register.

Documents and receipts have to be kept for five years, and the register has to be kept complete and up-to-date.

Prohibition of feed products (Regulation 999/2001)

- The prohibition of feeding certain products of animal origin according to Article 7 and Annex IV of the EC regulation must be complied with.
- For some feed products, exemptions may be granted by the authorities. In this case, the farmer has to be able to present the permission certificate for substances used or stored on his farm.
- Feed products have to be strictly separated, and purchase and use of feed containing fish meal have to be documented (documentation has to be kept for five years).

Notification of diseases (Directives 2003/85/EC, 92/119/EEC and 2000/75/EC; Regulation 999/2001)

According to the Animal Infectious Disease Act, the suspected or confirmed presence of several animal diseases, e.g. food-and-mouth disease, swine vesicular disease, and bluetongue, has to be notified immediately to the competent authority.

⁸⁵ 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.

⁸⁶ 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.

⁸⁷ 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 β -agonists, and repealing Directives 81/602/EEC, 88/146/EEC and 88/299/EEC.

⁸⁸ Verordnung über Stoffe mit pharmakologischer Wirkung.

If Bovine Spongiforme Encephalopathy (BSE) is suspected in a bovine animal at a holding in a Member State, all other bovine animals from that holding shall be placed under an official movement restriction.

If BSE is suspected in a bovine, ovine or caprine animal, all other animals from that holding are placed under an official movement restriction. Other measures ordered by the authorities must also be complied with.

If bovine, ovine or caprine animals or their semen, embryos and ova are placed on the market or imported, they have to be accompanied by the appropriate animal health certificates as required by Community legislation (Art. 15 of EC regulation 999/2001). The placing on the market of first generation progeny, semen, embryos, and ova of TSE suspect or confirmed animals is prohibited.

7 Animal welfare

7.1 Housing of calves

Since the provisions on the housing of calves become relevant for cross compliance only in 2007, they are not yet included in the checklists and brochures provided to farmers by the agricultural authorities.

The Directive 91/629/EEC⁸⁹ has been implemented in Germany through the Livestock Protection Ordinance.⁹⁰ The ordinance contains a number of provisions that further specify the requirements of Article 3 and 4 and the Annex of the Directive. In Table 8, the most important of these requirements are presented, with a focus on quantitative standards that may generate a need for investments. Provisions of the German ordinance that either exceed the quantitative standards laid down in the Directive, or that establish quantitative requirements where only a qualitative formulation is found in the Directive, are shown in italics.

Table 8 National implementation of the Directive on the housing of calves

Directive 91/629/EEC	German Livestock Protection Ordinance
<i>Space requirements</i>	
Floor space for calves housed in groups of at least 1,5 m ² for each calf of 150 kg live weight (Article 3)	Calves older than 8 weeks have to be kept in groups (§ 9, exceptions under certain circumstances). Floor space that has to be available (§ 10):

⁸⁹ Council Directive 91/629/EEC of 19 November 1991 laying down minimum standards for the protection of calves. OJ L 340 , 11/12/1991 p. 28 – 32.

⁹⁰ Verordnung zum Schutz landwirtschaftlicher Nutztiere und anderer zur Erzeugung tierischer Produkte gehaltener Tiere bei ihrer Haltung (TierschutzNutztierverordnung - TierSchNutztV). BGBl I 2001, 2758.

Directive 91/629/EEC	German Livestock Protection Ordinance
	<ul style="list-style-type: none"> • At least 1,5 m² for calves of up to 150 kg live weight • <i>At least 1,7 m² for calves of live weight between 150 and 220 kg</i> • <i>At least 1,8 m² for calves of over 220 kg live weight</i> <p><i>For a group of up to three calves, floor space of the stall has to be at least 4,5 m² for calves between 2 to 8 weeks and 6 m² for calves older than 8 weeks.</i></p>
<p>Housing in individual boxes or by tethering in stalls: the boxes or stalls shall have perforated walls and their width must be no less than 90 cm plus or minus 10%, or 0.80 times the height at the withers.</p>	<p>Calves younger than 8 weeks may also be kept in individual boxes; minimum box sizes are specified (§§ 7 and 8):</p> <ul style="list-style-type: none"> • <i>Calves younger than 2 weeks: box size at least 120 cm length, 80 cm width, 80 cm height</i> • <i>Calves between 2 and 8 weeks: box size 160-180 cm length, 90-100cm width</i> <p>Box walls have to be perforated in a way that allows calves to see and touch other calves.</p>
<i>Selected requirements from the Annex of the Directive</i>	
<p>Member States have to ensure that the air circulation, dust level, temperature, relative air humidity and gas concentrations within buildings are kept within limits which are not harmful to the calves.</p>	<ul style="list-style-type: none"> • Outside walls have to have thermal insulation (§ 6) • <i>Gas contents should not exceed 20 cm³ per m³ air for ammonia, 3 000 cm³ per m³ air for carbon dioxide, 5 cm³ per m³ air for hydrosulfide</i> • <i>Air temperature should not exceed 25 degrees C and should not be below 5 degrees C</i> • <i>Relative air humidity should be between 60 and 80%.</i>
<p>Calves must not be kept permanently in darkness. To meet their behavioural and physiological needs, provision must be made for appropriate natural or artificial lighting.</p>	<p><i>A light strength of at least 80 Lux has to be reached for at least 10 hours per day (§6 (4), § 11 (9)).</i></p>

Directive 91/629/EEC	German Livestock Protection Ordinance
All calves must be provided with an appropriate diet adapted to their age, weight and behavioural and physiological needs, to promote a positive state of health and well-being. The calves' food must include sufficient iron and a minimum of dried feed containing a digestible fibre (100-200 gr daily depending on the age of the animal).	<p>Iron (§ 11):</p> <ul style="list-style-type: none"> • <i>calves of up to 70 kg weight: iron content in the milk has to be at least 30 mg per kg</i> • <i>calves of more than 70 kg weight: adequate amounts of iron have to be supplied so that an average haemoglobin content of 6 mmol per litre blood is reached</i> <p>Fibre (§ 11):</p> <p>From the 8th day after birth at the latest, roughage or other structured feed rich in fibre has to be provided for free uptake by the animals.</p>

7.2 Housing of pigs

Germany has not yet formally transposed the Directive 91/630/EC⁹¹ and its amendments (Directives 2001/88/EC⁹² and 2001/93/EC⁹³) into national law and is thus in breach of the 2002 deadline. A German ordinance on pig keeping, which in some aspects exceeded the requirements of the EC Directives, was nullified in 1999 for formal reasons. Nevertheless, its provisions are still being used by the *Länder* governments with regards to the new construction or upgrading of pig keeping facilities. Some *Länder*, however, have issued additional decrees that prescribe even stricter standards. Consequently, there is currently no uniform legal basis for housing and protection of pigs in Germany.⁹⁴

Eventually, the protection of pigs is to be implemented by an amendment to the Livestock Protection Ordinance which already contains the provision on the protection of calves (see section 7.1). A draft version is currently in the legislative process.⁹⁵

The draft ordinance is congruent with the standards required by the EU Directive; in some points the provisions exceed the European standards, for instance with regard to the illumination and availability of material. As the legislative process is not yet

⁹¹ Council Directive 91/630/EEC of 19 November 1991 laying down minimum standards for the protection of pigs (Official Journal L 340 of 11 December 1991).

⁹² Council Directive 2001/88/EC of 23 October 2001 (Official Journal L 316 of 1 December 2001).

⁹³ Commission Directive 2001/93/EC of 9 November 2001 (Official Journal L 316 of 1 December 2001).

⁹⁴ Feller, Bernhard 2003: Rechtliche Grundlage für den Tierschutz. Nutztierpraxis Aktuell, Ausgabe 6, September 2003. www.aval.de/pdf/artikel/schweine/feller.pdf.

⁹⁵ Dokumentation, AGRA-EUROPE 8/06, February 2006.

completed, and since the prescriptions are beyond the scope of cost analysis for this country report, they are not presented in detail here.

8 Estimating the costs of cross compliance

The following sections present an analysis of costs that might arise for farmers from cross compliance. The analysis is based on the evaluation of the relevant literature and on approximately 30 telephone interviews conducted with farmers, farmers' associations, agricultural advisory service staff, and ministries. Firstly, a summary of the general concerns related to cross compliance voiced by farmers in the public debate and in the interviews conducted for this study is given in section 8.1. Secondly, the costs of complying with Annex IV standards are outlined in section 8.2. Since the Annex IV standards were newly introduced by the cross compliance policy, the costs of complying with these standards can directly be attributed to cross compliance.

Finally, the issue of costs related to the Annex III standards is discussed in section 8.3. In principle, compliance with all of the SMRs may impose costs on farming; however, since all Annex III standards were in place before the introduction of cross compliance or would be in place also without cross compliance, these costs cannot directly be attributed to cross compliance. This judgement is shared by experts from different institutions, including farmers' associations. However, these costs may still be relevant in the context of this study if farmers did not comply with certain standards before the introduction of cross compliance but will do so now. Farmers who need to improve compliance in order to secure their direct payments may incur such costs. The costs of complying with Annex III standards are therefore considered in this report, taking into account the degree of compliance with the standards found by the 2005 cross compliance controls, and the possibility that compliance rates might improve as a result of the introduction of cross compliance.

The present country report focuses on the cereal, beef and dairy sectors. Table 9 summarises which of the SMRs are relevant for these sectors, and shows the share of farms and agricultural area affected.

Table 9 Standards relevant for the sectors chosen for the German cost analysis

Farm type	Annex IV	Annex III	Number of farms ⁹⁶	Agricultural area ⁹⁷
Cereal	soil erosion, soil structure and humus content, maintenance of	bird/habitat, groundwater, sewage sludge, nitrate, plant protection	Approx. 24% of farms	Approx. 32% of total agricultural area

⁹⁶ DBV 2005, p. 152. The figures refer to specialised field crop farms according to EU Typology (see section 2.2) and to individual enterprises only.

⁹⁷ DBV 2005, p. 152. The figures refer to specialist grazing livestock farms according to EU Typology (see section 2.2) and to individual enterprises only.

Farm type	Annex IV	Annex III	Number of farms ⁹⁶	Agricultural area ⁹⁷
	set-aside land, permanent pasture	products, food safety and hygiene		
Beef and Dairy	soil erosion, soil structure and humus content, maintenance of set-aside land, permanent pasture	bird/habitat, groundwater, sewage sludge, nitrate, identification of bovines, plant protection products, food safety and hygiene, housing of calves	Approx. 42% of farms	Approx. 38% of total agricultural area

8.1 General costs and concerns related to cross compliance

The greatest concern expressed by farmers and representatives of farmers' associations in relation to cross compliance is, not surprisingly, the risk of a reduction in direct payments. This financial risk is also most often mentioned by interviewees when asked about the cost factors of cross compliance. Concern was also repeatedly voiced about the fact that reductions in direct payments might be imposed even if the breaches of standards are minor or of mainly formal nature, such as in the case of missing eartags on the day of the control visit and certain documentation deficits.

In this regard, cross compliance gives rise to considerable resentment among farmers. In the view of farmers' associations, cross compliance symbolises a loss of trust in the personal responsibility of farmers, and farmers often feel that they are burdened with documentation and bureaucracy not justified by any benefits for consumers or the environment.

Generally, an increase in bureaucracy and paper work, not only on the part of farmers but also for public administration, is most often condemned by farmers in the debate about cross compliance. The farmers' association of Baden-Württemberg has estimated the total costs of control, compliance, documentation and verification related to cross compliance as 10 million EUR.⁹⁸

The increase in documentation requirements, time expenditure and administrative costs that cross compliance causes to farms are also mentioned as cost factors. In the interviews, farmers' association representatives estimated that between 5 and 10 hours of work per farm are required for reading the information material, singling out the requirements relevant for the respective farm and for overhauling farm management in order to verify that it is "cross compliance proof", i.e. for becoming familiar with the instrument only.

⁹⁸ AGRA-EUROPE, 13.2.06.

Another possible cost factor is that due to the risk of losing direct payments farmers tend to be particularly careful and make precautionary additional investments, although they might be already compliant with standards.⁹⁹

As a safeguard against the financial risk of losing parts of their direct payments, farmers may buy farm-level management systems and make use of advisory services, which might create additional costs. However, when looking at the costs of farm advisory systems and management tools, differences in the organisation of farm advisory systems between the *Länder* need to be taken into account. In some *Länder*, farm counselling is offered free of charge by public authorities, and therefore almost no private agricultural consultants are established;¹⁰⁰ in other *Länder* advisory services are offered by parastatal bodies (*Landwirtschaftskammern*) and partly subject to charges and/or financed by membership fees.¹⁰¹ In Mecklenburg Western Pomerania, Brandenburg, Saxony-Anhalt, and Thuringia, advisory services are mainly sold by private firms.¹⁰² If services are subject to charge, the costs are eligible for compensation. According to EC regulation 1783/2003, at maximum 80% of the costs of the advisory service may be compensated, as long as they do not exceed 1500 EUR per service. Compensation rates vary between the *Länder*. The contribution to costs for advisory services related to cross compliance, paid for by the farmers themselves, is thus likely to be in the range of a few hundred Euro. Advisory services usually cover more than just the cross compliance requirements and may also bring additional benefits to farm management.

Finally, farmers may also have to pay for the cross compliance controls out of their own pocket. This was reported by one interviewee from Lower Saxony where the district governments responsible for pig registration controls apparently charge 70-150 EUR for the controls. Several interviewees stated that cross compliance might pose a greater challenge to small-scale and part-time farmers than to bigger farms. While large farms or co-operatives may employ special staff for documentation and administration, and may already have optimised their farm management systems, small farms and part-time farmers may be less able to cope with the increased requirements concerning documentation and administration. Also, the threshold for undertaking new investments is higher for small farms, and deficits in compliance with standards may thus be more often found in small and part-time farms.

For the case of the Nitrate Directive, farms with low livestock density, who cause less environmental problems, might be more strongly affected by cross compliance sanctions, because despite complying more easily with the limits to N application, they are as likely as larger farms to breach the formal requirements, e.g. those concerning documentation, and thus to be subject to sanctions.¹⁰³

⁹⁹ Deutscher Bauernverband 2006; Der Spiegel 03.07.2006, Agrarpolitik: Fallstricke auf der Flur.

¹⁰⁰ This is the case in Bavaria, also partly in Baden-Württemberg, Saxony, Hesse and Rhineland Palatinate.

¹⁰¹ Schleswig-Holstein, Lower Saxony, Northrhine-Westphalia, Saarland, Bremen and Hamburg.

¹⁰² Boland, H., A. Thomas and K. Ehlers 2005: Beratung landwirtschaftlicher Unternehmen in Deutschland. Analyse unter Berücksichtigung der Anforderungen von Verordnung (EG) Nr. 1782/2003 zu Cross Compliance. Im Auftrag des Bundesministeriums für Verbraucherschutz, Ernährung und Landwirtschaft, Bonn.

¹⁰³ Nitsch, H. and B. Osterburg 2004.

8.2 Annex IV costs

Relevance

The GAEC standards concerning set-aside lands are relevant for all farm holdings, while most of the standards related to erosion protection and soil organic matter and structure affect field crop farms only.

In general, compliance with the GAEC standards was not described as problematic by the interviewees. Usually, standards are already complied with under good farming practice, and the measures required are often carried out by farmers out of own interest – humus balances for instance may be prepared independent of cross compliance by farmers who want to keep track of the evolution of soil conditions.

However, individual cases were mentioned (e.g. part-time farms, specialised farms) in which the GAEC standards could constitute a challenge for farmers.

The provision on the retention of landscape features seems to cause anxiety among farmers – there is uncertainty as to which elements may or may not be removed generally, the removal of which elements is forbidden under cross compliance, and where the line runs between maintenance measures and removal. However, no significant cost implications are associated with this standard; and despite the apparent uncertainty, there are no indications that non-compliance with this provision was considerable or has led to significant reductions of direct payments in 2005.

Problems were reported with regard to the prohibition of mulching and mowing on set-aside land during the period from April 1 to July 15. There were complaints by farmers that due to this regulation, weed growth could not be controlled sufficiently, which implies an increased need for plant protection products later on. However, this regulation is currently under review; the retention period will most likely be shortened, and should end June 15 in future years (see section 4.2.3).

A decrease of permanent pasture below the limits specified by the German Ordinance (see section 4.2.4) has not yet occurred in 2005. Interviewees generally do not describe this issue as a big problem. In many cases, permanent pasture is already protected under agri-environment schemes; many grassland areas are not suitable for crop farming, and incentives to plough grassland are reduced by the alignment of the direct payments for crop land and grassland. In some areas, however, ploughing of permanent pasture might become a problem, e.g. in regions where energy production from biomass is on the rise, creating a demand for areas to grow biomass crops such as maize.

Quantification of costs

Annex IV standards generally are not considered to have major cost implications for farmers. Costs for some of the individual measures that might be required can be quantified at farm level. However, it is not possible to determine to what extent the standards will cause changes in farming practices at national level, with interviews indicating that the overall impact is likely to be rather small.

Soil erosion: Farmers may have to sow winter grain or winter catch crop on 40% of the farm's crop land area. Costs for the sowing of winter crops lie in the range of 550-

650 EUR/ha (including the costs for seeds, fertiliser and equipment).¹⁰⁴ However, since a positive profit margin is to be expected when the product is marketed, below the line farmers will incur no extra costs.

Maintenance of organic matter and soil structure: Farmers probably only choose the crop ratio option (see section 4.2.2) if additional crops can be marketed, which again implies that extra costs will not arise. For the compilation of the humus balance, farmers may purchase software for 20-50 EUR, but it can also be done by hand. The alternative, analysis of soil samples, costs approximately 50 to 80 EUR, but has to be done only once in six years.¹⁰⁵

Maintenance of set-aside lands: The maintenance measures, i.e. sowing of grassland, mulching and mowing, which are required of farmers may constitute a cost factor.

The costs for sowing on set-aside land were estimated to be between 400 and 500 EUR/ha by farmers' associations. However, sowing is not mandatory, and farmers can also choose to allow natural regeneration of vegetation cover (see section 4.2.3).

Mulching costs between 35 and 60 EUR/ha, depending on the size of the parcel of land and on working width.¹⁰⁶

As an alternative to mulching once a year, set-aside land may be mowed every second year (see section 4.2.3). The costs of mowing and removal of cut material depend on machinery used, size of the parcel of land, distance from the farm, and quantity of hay per hectare and may vary between 50 and 300 EUR/ha.¹⁰⁷

Maintenance of permanent pasture: In a few regions, permanent pasture area might decline in the future to an extent that will require *Länder* governments to restrict the ploughing of permanent pasture or even to demand re-sowing (see section 4.2.4). Re-sowing of grassland could cause costs; however, it cannot be quantified at this stage to what extent these costs will become relevant.

Some interviewees from Bavaria and Baden-Württemberg mentioned that subsidies until now granted under agri-environment measures (*Kulturlandschaftsprogramme*) may be threatened by cross compliance, since certain measures in extensive grassland management that were previously funded are now a prerequisite for direct payments. In Bavaria, for instance, a bonus for extensive grassland management (a key element of which was non-ploughing of grassland) may be abolished in 2007. The bonus currently amounts to 100 EUR/ha.

8.3 Annex III costs

In the following sections, first an analysis of compliance rates with Annex III standards is made in order to assess where considerable efforts by farmers may be necessary to reach full compliance. Subsequently, the costs of compliance with these

¹⁰⁴ KTBL – Kuratorium für Technik und Bauwesen in der Landwirtschaft 2004: Betriebsplanung Landwirtschaft 2004/2005. KTBL-Datensammlung mit CD. KTBL Darmstadt, p. 157 (winter wheat) and p. 215 (winter rapeseed).

¹⁰⁵ Cost estimates from interviews.

¹⁰⁶ KTBL 2004, p. 121.

¹⁰⁷ KTBL – Kuratorium für Technik und Bauwesen in der Landwirtschaft 2005: Faustzahlen für die Landwirtschaft. KTBL Darmstadt, p. 134-139.

standards are presented. It must be noted, however, that the costs related to the standards relevant for cross compliance cannot in all cases be precisely determined. In some situations, farmers may take measures not because of cross compliance but because national standards are being raised or changed (e.g. Nitrate Directive). Also, costs caused by cross compliance standards cannot always be clearly separated from those arising from national legislation imposing additional requirements (this is explained in more detail for the case of groundwater protection standards, see section 8.3.4).

8.3.1 Degree of compliance with Annex III standards in 2005

The evaluation of the 2005 cross compliance controls at the Federal level was not available for this study.¹⁰⁸ Detailed information will however be supplied by the national reporting on cross compliance which will be finalised in August 2006. Nevertheless, the results of the 2005 cross compliance controls have been published by some of the *Länder*, which together with information obtained from the interviews allow some conclusions to be drawn on which standards are most problematic.

¹⁰⁸ Both the *Bund-Länder-Arbeitsgruppe* on cross compliance (see section 3) and the German IACS database (InVeKoS) were contacted.

Table 10 Results of on-the-spot checks in 2005 in three German *Länder*. Non-compliance rates are shown for each standard; the figures in brackets indicate the total number of controls.

	Lower Saxony¹⁰⁹	Mecklenburg-Western Pomerania¹¹⁰	Thuringia¹¹¹
Total checks	(5.400)	(619) ¹¹²	
Bird	0% (669)	10% (59)	0% (63)
Habitat	0% (669)	2% (49)	0% (57)
Groundwater	0% (669)	11% (56)	0% (54)
Sewage sludge	0% (28)	0% (3)	0% (1)
Nitrate	5% (492) ¹¹³	15% (62)	5% (64)
GAEC	2% (669) ¹¹⁴	3% (58)	6% (66)
Cattle	30% (2,200) ¹¹⁵	41% (316) ¹¹⁶	36% (247)
Sheep/goats		25% (8)	39% (23)
Pigs		25% (8)	25% (28)

Altogether, the data suggest a high degree of compliance overall. However, high non-compliance is recorded consistently in relation to the identification and registration of

¹⁰⁹ Landwirtschaftskammer Niedersachsen, 15. 03. 2006, “Cross Compliance? Auswertung der systematischen Kontrollen 2005”, <http://www.lwk-hannover.de/index.cfm/portal/foerderung/nav/297/article/6792.html>. Note that the figures are preliminary.

¹¹⁰ Thomas Annen, Ramona Bols 2006, LFA Mecklenburg-Vorpommern, Institut für Betriebswirtschaft, Kleine Fehler – mit empfindlichen Auswirkungen, <http://www.agrarnet-mv.de/>.

¹¹¹ “Erste Erfahrungen aus der InVeKoS-Antragsstellung 2005 und Cross Compliance” 8. TLL-Jahrestagung: Thüringer Landwirtschaft 9. Februar 2006, Peter Ritschel – Landwirtschaftsamt Sömmersda, http://www.tll.de/ainfo/pdf/jt06_23f.pdf. (Data according to Thüringer Landesverwaltungsamt (Th. LvwA Zahlstelle)

¹¹² In total, 156 (25%) cases of non-compliance (to a third cases of serious infringements).

¹¹³ Based on the evaluation of 67% of controls. Cases of non-compliance have mainly been due to non-compliance with regard to missing documents (advisory recommendations, soil analysis) and exceeded use of fertiliser.

¹¹⁴ Based on the evaluation of 67% of controls. Cases of non-compliance have been due to non-compliance regarding the issues soil organic matter and minimum level of maintenance.

¹¹⁵ Based on the evaluation of 25% of controls (=587). Although the identification and registration of cattle has been subject of controls already in previous years, no improvement of compliance could be achieved. About 30% of the farms will receive reduced direct payments (173 farms – 115: 1%, 24: 3% and 34: 5% reduction of direct payments)

¹¹⁶ Of all non compliance cases, 11% of the infringements were severe (6% on federal level). Registration was a crucial issue, identification was only a minor problem.

animals, where eartags are found missing, surplus cattle passports exist on farms, registers are not complete, or livestock changes are not notified in time.¹¹⁷

As can be seen from Table 10, few breaches were recorded of the standards concerning sewage sludge, the Habitat and Bird Directives, groundwater and GAEC. In some cases, the regulations deriving from the Nitrate Directive are not sufficiently complied with. In Lower Saxony, missing documentation was the reason for sanctions in approximately half of those cases, but a number of farms also exceeded the limits for the application of manure.

When comparing statistics, the structural differences between the Eastern and Western *Länder* have to be kept in mind. While several thousand farms were controlled in Lower Saxony, for instance, only 618 control visits were carried out in Mecklenburg-Western Pomerania, where the overall number of farms is much smaller.

In Bavaria,¹¹⁸ non-compliance with cross compliance requirements was found in 1.7% of farms. In two thirds of these cases the infringements were minor and will only lead to a reduction of direct payments of 1%. As in Lower Saxony, almost no offences were recorded in the case of the environmental standards (Habitat/Bird, Groundwater, Sewage Sludge and Nitrate), the cases of non-compliance being often due to insufficient documentation. Few breaches of regulations concerning the application of fertiliser and the storage of manure and silage effluent were reported. Again, most problems were found with animal identification and registration, i.e. keeping of registers, presence of eartags, and in-time notification of changes in cattle livestock.

According to an interviewee from a farmers' association, the average non-compliance rates across Germany were approximately 30% for bovine identification and registration, 15% for the regulations related to the Nitrate Directive, around 4-5% for sewage sludge and groundwater protection regulations, and 0.5-0.8% for the Bird and Habitat Directives. Some interviewees also indicated that the results of controls differed strongly between districts, which may be due to differences in agricultural conditions and farmers' situations, but also to differences in how non-compliance was assessed and controls were handled by the authorities.

8.3.2 Expected effect of cross compliance on compliance rates

Given that only one round of cross compliance controls has been carried out so far, little can be said in quantitative terms about the effects on compliance rates. However, many interviewees said that due to the uncertainty and the higher financial risk farmers face, they tend to do "more than necessary" or try to be "even better than required" in order to make sure that their direct payments are not threatened. Also, cross compliance may cause farmers to undertake investments that are necessary not only to comply with cross compliance standards but with additional related national

¹¹⁷ According to preliminary data of the Federal Ministry for Agriculture about 30% of all farms are not compliant to the Identification and Registration standards. (Thomas Annen, Ramona Bols 2006, LFA Mecklenburg-Vorpommern, Institut für Betriebswirtschaft, Kleine Fehler – mit empfindlichen Auswirkungen, <http://www.agrarnet-mv.de/>.)

¹¹⁸ AGRA-EUROPE 10/06, Länderberichte p. 8.

law provisions (see section 8.3.4). Triggered by cross compliance, farmers may overhaul their holdings, make use of management tools and advisory systems to improve farming processes, thus improving overall performance in terms of environmental, animal, and consumer protection. Some interviewees indicated that there is a high demand for information material, checklists and management tools.

Thus, it can be expected that cross compliance tends to improve compliance. On the other hand, cross compliance reveals rather low compliance rates, e.g. in the case of animal identification and registration. However, the high number of infringements is most probably due to the tightening of controls in the context of cross compliance, i.e. the increased strictness of controls and narrowed scope for discretion of the controlling authorities. Also, in some cases the actual benefit of increasing compliance formally may be put into question – interviewees for instance repeatedly expressed the view that the great effort required from and potential dangers encountered by farmers when constantly ear-tagging fattening bulls or mother cows are not proportionately reflected by benefits to consumers.

For other standards, such as those regarding the application of sewage sludge, compliance appears to have been high before the introduction of cross compliance, so that the effect is likely to be minor.

In summary, it is expected however that the overall aim of the cross compliance instrument, which is to improve the compliance with existing legislation, will be achieved.

8.3.3 Habitat/Bird Directives

Relevance

Overall, an area of 7,157,026 hectares has been proposed to be protected as Natura 2000 areas. 21.4% of this area consists of cropland, i.e. 1,531,604 hectares, and 17.8% is grassland, i.e. 1,273,951 hectares. Grassland and cropland areas in Natura 2000 sites therefore constitute roughly 16.5% of total agricultural area in Germany.¹¹⁹ Thus, less than one fifth of total farming area is potentially subject to constraints.

Since designation of the proposed sites as protected areas is not yet complete and decisions about the instruments to be used have not been taken yet in most cases, little can be said at this stage about the actual constraints farmers in Natura 2000 areas will have to face. This may also be a reason why very few breaches of standards were detected during the systematic controls in 2005. The breaches that were discovered, e.g. in Mecklenburg-Western Pomerania, mostly were related to the disturbance of landscape elements.¹²⁰

Costs

Constraints to farmers resulting from the Bird and Habitat Directives were rarely mentioned by interviewees as having a significant impact on farming costs. Costs might be incurred in the form of reductions in production quantity or harvest quality. However, the new EC regulation on support for rural development by the European

¹¹⁹ Rath, Ulrike, Sandra Balzer, Marion Ersfeld und Uschi Euler 2006: Deutsche Natura-2000-Gebiete in Zahlen. *Natur und Landschaft* 81, Volume 2, p. 68-80.

¹²⁰ E.g. cows close to water holes/protected biotopes.

Agricultural Fund for Rural Development (EAFRD),¹²¹ which covers the budget period from 2007 to 2013, stipulates that the Member States compensate farmers who experience income losses in Natura 2000 areas. According to Article 38, “*support [...] shall be granted annually and per hectare of Utilised Agricultural Area to farmers in order to compensate for costs incurred and income foregone resulting from disadvantages in the areas concerned related to the implementation of Directives 79/409/EEC and 92/43/EEC*”. The amount that may be paid to farmers is limited to 200 EUR/ha (maximum normal payment) or 500 EUR/ha (initial maximum payment for a period not exceeding five years).

In several German *Länder*, such compensation schemes are already in place. For instance, in Saxony-Anhalt farmers are paid subsidies of 105 EUR/ha for grassland area and 189 EUR/ha for crop land in protection areas where the use of fertiliser is not permitted.¹²² In Thuringia, up to 200 EUR per hectare grassland may be paid per year, the actual amount depending on the specific constraints in a given Natura 2000 area;¹²³ in Schleswig-Holstein compensation payments of 77 EUR per ha per year are paid.¹²⁴

Altogether, given the status of implementation of the Habitat and Bird Directives, it is not possible to quantify costs since no empirical information is available. The costs faced by German farmers will depend on the specific constraints of the management plans that are to be drafted and on the compensation payments granted by the individual *Länder* governments.

8.3.4 Groundwater

Relevance

The standards concerning groundwater protection potentially affect the total agricultural area.

From the data that are available on the 2005 cross compliance controls, it seems that relatively few and mostly minor breaches against groundwater protection standards were found, which suggests that little effort would be necessary to reach full compliance. However, farmers might to a certain degree be induced by cross compliance to undertake investments related to the storage of oil and plant protection products, although the costs for these investments cannot be attributed to the Annex III standards only, but mostly to related national legislation that establishes detailed standards concerning the design of the facilities.

¹²¹ Council Regulation (EC) No 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD), OJ L 277 of 21 October 2005, p. 1.

¹²² Sachsen-Anhalt, Ministerium für Landwirtschaft und Umwelt: Merkblatt Ausgleich von Bewirtschaftungsbeschränkungen 2005, see <http://www.sachsen-anhalt.de/LPSA/index.php?id=2163>.

¹²³ Bekanntmachung der Richtlinie des Thüringer Ministeriums für Landwirtschaft, Naturschutz und Umwelt zur Gewährung einer Ausgleichszahlung für landwirtschaftliche Betriebe in Gebieten mit umweltspezifischen Einschränkungen (Ausgleichszahlung Natura 2000) in der Fassung vom 26.04.2004, <http://www.thueringen.de/de/tmlnu/themen/lawi/entwplan/massnahmen/index.html>.

¹²⁴ <http://shvv.juris.de/shvv/vvsh-6611.17-0001.htm>.

For instance, there are specific national or *Länder* law provisions concerning the design of on-farm tank stations and oil storage containers which are not themselves relevant for cross compliance, and which may not be presently complied with by all farmers (see chapter 4.1.2). One interviewee, when describing the situation in her region, said that almost all farmers complied with the cross compliance standards¹²⁵, but almost none fully complied with all requirements specified by the building laws. Similar statements were made by other interviewees. In this situation, cross compliance might motivate farmers to upgrade their facilities to full compliance with national law, either as an additional safeguard or because they do not know which standards are covered by cross compliance and which are not. In this context, the information policy of farm advisors and the way these issues are handled by local or regional administrations may also play a role.

Similar situations exist with regard to storage containers for plant protection products. Costs for purchasing new containers for plant protection products, which are often advertised with reference to cross compliance, may be rather high; however farmers may find cheaper solutions to ensure their facilities are leak-proof and fulfil cross compliance requirements.

Quantification of costs

In Germany, both used oil and used pesticide containers have to be accepted by the retailers free of charge. In the case of used oil, this has been the case since 1987.¹²⁶ Presumably, the price of transmission oil increased as a result so that the costs incurred by the retailers was passed on to the users; however, this can hardly be regarded as a cost of compliance since the German ordinance was issued a long time ago. Thus there are no costs to farmers with regard to return systems.

However, considerable costs might be incurred if storage facilities have to be rebuilt or upgraded. Reference data collections for farm management and agricultural equipment catalogues help to assess the potential range of investment costs.

Costs for on-farm tank stations vary with size. According to literature data, a small mobile fuel tank (980 l) costs 2,500 EUR; the costs for an above-ground tank station (10 m³) amount to between 12,000 and 16,000 EUR. A below-ground tank station of the same volume costs 15,000 to 22,000 EUR. Securing of the surrounding area where fuelling takes place may amount to costs of several thousand Euro depending on size and design.¹²⁷

Small cupboards for the storage of plant protection products (volume in the range of 60 l) cost a few hundred, larger containers may cost up to several thousand Euro. A farmer interviewee said he had spent 1060 EUR for a container and shelves – which however he had purchased before the introduction of cross compliance.

Figures named by interviewees for investment costs for upgrading or construction of on-farm tank stations cover a wide range – the total costs obviously being a function of the assumed farm size. Sums between 200 EUR and 15 000 EUR were indicated; interviewees from the new *Länder*, where large farm co-operatives prevail, even mentioned costs of 50,000 EUR. Most interviewees agreed that the construction of a

¹²⁵ Which essentially consist in the requirement that facilities be leak-proof.

¹²⁶ Altölverordnung, BGBl I 1987, p. 2335. Neugefasst durch Bek. V. 16.4.2002, BGBl I p. 1368.

¹²⁷ KTBL 2005, p. 519 ff.

new on-farm tank station costs approximately 10 000 EUR. However, the costs for upgrading existing facilities may vary and may be as low as a few hundred Euro. Often minor investments for upgrading measures will be sufficient. Interviewees also indicated that instead of investing, farmers may rather choose to give up their own tank stations and refuel at communal or private stations.

Due to the fact that situations of individual farmers differ greatly, it is extremely difficult to estimate costs of compliance at national level. For instance, both the number and average size of on-farm tank stations on German farms is unknown; as is information about the average condition of facilities and investment needs. Investment costs could be high at farm level in individual cases. Given the high degree of compliance, cost increases seem to be marginal.

8.3.5 Nitrate

Relevance

The provisions of the Nitrate Directive affect cattle and dairy farms and mixed farms with cattle livestock.

The main potential cost factors stemming from the Nitrate Directive are the upper limit for manure application (170kg N per hectare, see section 4.1.4), the requirements concerning the design of storage facilities and those regarding storage capacity. The costs of compliance with the regulations may rise for farmers in Germany due to the current tightening of standards (see chapter 4.1.4). However, this has to be attributed to the fact that the Nitrate Directive is being fully implemented into national law only now – it is not related to the introduction of cross compliance.

Non-compliance rates appear to be higher for the Nitrate Directive than for most of the other Annex III standards (around 15%, see section 8.3.1), and some interviewees indicated that investments might be necessary. However, the interviews also reflect a very heterogeneous situation.

The limitation of manure application constitutes a problem in regions where grassland and livestock grazing dominate and for farms with high livestock numbers and little or no field crop area. Interviewees from the New *Länder* consistently said there were few problems with the limits to fertiliser application since livestock stocking rates are relatively low (not exceeding 2 livestock units). In other regions, mainly in grassland areas with high livestock stocking rates and several grass harvests per year (e.g. regions in Bavaria and Baden-Württemberg), the limit of 170 kg per hectare represents a more noticeable constraint. Farmers in these areas hope that the relaxation of the upper limit to 230 kg for grassland will be approved by the European Commission (see section 4.1.4).

Farmers might have to invest in order to increase storage capacity in the *Länder* where the standards have recently been raised (e.g. Bavaria, Lower Saxony; see section 4.1.4). In Thuringia, regional law requires a 6-month storage capacity for manure since the year 2000. In Mecklenburg-Western Pomerania after 1989, state subsidies were made available to rebuild or upgrade most cattle barns and associated storage facilities, with 6-month storage capacity being a condition for the grant of financial support. Therefore, little investment will be necessary for most farm holdings here.

With regard to leak-tightness of facilities, some interviewees indicated that not all facilities in their region were fully in line with standards, which implies that investments might be necessary. As in the case of storage of oil and plant protection products (see 8.3.4), a clear separation of national standards and cross compliance standards may not be possible here. Cross compliance standards only stipulate that the bottom plate of facilities has to be leak-proof and that overflow and discharge of storage material to the groundwater is prevented. However, regional building laws may require additional features such as a concrete cover of the bottom plate. So if a farmer decides to upgrade his facility in order to comply with the cross compliance standards, he will most likely not ignore national building law standards, but take them into account in his investment decision as well.

Quantification of costs

“Manure exchanges” exist in some of the regions where excess manure is a problem. The supplier of manure pays a fee to the recipient which amounts to approximately 3-4 EUR/m³ according to interviewees. Alternatively, additional land may be leased at a price of 175 EUR/hectare crop land and 120 EUR/hectare grassland on average.¹²⁸ However, prices are likely to be higher in areas affected by this problem (e.g. 150 EUR/hectare grassland in the Bavarian Allgäu¹²⁹). A reduction of livestock was also mentioned by interviewees as a possible solution, which also entails costs in the form of lost income.

The investment costs for manure storage facilities lie in the range of 50-200 EUR/m³.¹³⁰ The design of storage facilities may vary considerably, depending on whether solid or liquid manure is stored, whether the facility is above-ground or below-ground, and depending on the type of cover. Costs per m³ also decrease with size.

Again, it has to be noted that investment decisions of farmers may not be a result of cross compliance but of raised standards concerning storage capacity prescribed by new *Länder* ordinances (see chapter 4.1.4). Alternatively, farmers might combine the investment in new storage capacity with other investments concerning the diversification of production (e.g. Biomass-to-gas facilities). In this case, since farmers also gain benefits from such solutions, it is not possible to quantify costs attributable to cross compliance.

As indicated by an interviewee, the costs for covering the bottom plate of a storage facility for manure or silage effluent with a concrete layer of 0.16m thickness amount to approx. 27 EUR/m².

8.3.6 Sewage sludge

Non-compliance with the sewage sludge provisions during the 2005 cross compliance controls were low, and the provisions on the use of sewage sludge were not mentioned by interviewees as being problematic for farmers, nor as being a relevant cost factor.

¹²⁸ http://www.cma.de/wissen_70820.php.

¹²⁹ Information from interviews.

¹³⁰ KTBL 2005, p. 554 ff.

In Germany, farmers are usually paid for using sewage sludge by the waste water treatment company, however the price may vary between regions. There are estimates for the costs incurred by farmers if they have to replace sewage sludge by mineral fertiliser.¹³¹ However, since the information available does not indicate that a significant number of farmers have to reduce their use of sewage sludge due to cross compliance, the costs resulting from the sewage sludge provisions in the context of cross compliance can be regarded as negligible.

8.3.7 Animal registration

Relevance

Cattle and dairy farms as well as mixed farms keeping cattle are affected by the provisions.

Since the highest non-compliance rates were recorded with regard to the standards for animal identification and registration, and since these standards were consistently mentioned by interviewees as the most problematic for farmers, the cost potential of the regulations should be taken into consideration.

With regard to bovine identification and registration, the most relevant cost factor is the price paid for eartags and associated services (cattle passport, service fee, notification etc.). Farmers with no internet access have to send notification of livestock changes via mail. Also, documentation requirements might be considered.

Quantification of costs

The loss of eartags and the purchase of replacement tags may constitute a relevant cost factor for farmers, as was reported by some of the interviewees. In general, if animals graze during most parts of the year, they are more likely to lose eartags than if kept in the barn, and it requires considerable time and effort for farmers to constantly ensure that all eartags are in place. When asked about the costs for eartags, interviewees indicated prices ranging from less than one Euro to around five Euro, depending on whether the supply of the cattle passports and other registration logistics are included in the price, and whether the prices refer to initial identification or replacement tags. The costs also vary regionally and between different suppliers.

In Mecklenburg-Western Pomerania, the initial “identification package” costs 2.65 EUR, consisting of cattle passport, birth notification card and two eartags; single replacement eartags cost 1.65 EUR. In Saxony, initial identification including supporting services costs between 2.91-3.16 EUR (excluding VAT), replacement tags cost 1.02 EUR (excluding VAT).¹³² Cost information reported from Bavarian interviewees was not consistent, prices indicated range from 1.05-1.55 EUR to up to 5 EUR. Postage has to be paid in addition.

¹³¹ In Bavaria, costs are quantified as 160 – 335 EUR per hectare per year (40 - 85 € per ha*year for the purchase of fertiliser and 125 - 250 € per ha*year for the loss of the payment, see <http://www.stmugv.bayern.de/de/abfall/klaer4.htm>). Older calculations by the Federation of the German Waste Industry from 1994¹³¹ estimate the costs advantage from the use of sewage sludge as 100-200 DM/ha*year (see BDE – Bundesverband der deutschen Entsorgungswirtschaft 1994: Kreislaufwirtschaft in der Praxis Nr. 2: Landwirtschaftliche Klärschlammverwertung. Download at http://www.bde.org/01seiten_b/b_02_04.php).

¹³² <http://www.lkvsachsen.de/hit/neurinderohrmarken.asp>.

The supply of eartags may be organised in different ways. In Lower Saxony, for instance, costs for the eartags are borne by an animal disease insurance scheme (*Niedersächsische Tierseuchenkasse*)¹³³. Membership and payment of membership fee is mandatory for farmers.¹³⁴

However, costs are determined not only by the price of eartags, but also by the eartag loss rates and the number of calves born each year. In Bavaria 380,000 replacement eartags were ordered within the course of one year. 4.5 Mio cattle are kept in Bavaria, all of which should be identified by two eartags. These figures indicate that roughly 4% of eartags have to be replaced annually. An interviewee from Lower Saxony indicated that loss rates had been reduced from peak values of 18% in earlier years to below 10% today, by way of ordering tags of better quality from a different supplier. At farm level, there is likely to be additional variability due to the fact that loss rates are higher in the case of mother cow keeping and bull fattening than for milk cows. For mother cows, 30% loss rates were reported by interviewees.

If as an approximation an intermediate value of 6% is assumed for eartag loss at national level (approximately 13.6 million cattle¹³⁵), this would imply that approximately 1.63 million eartags have to be replaced each year.

Additionally, the identification of newly born calves has to be taken into account. In Lower Saxony, the birth rate is 0.3. If this figure is scaled up to the national level, it is to be assumed that around 4 million calves are born each year the identification of which has to be ensured.

Given the range of prices for the identification packages and replacement eartags, these figures imply that costs at the national level are not insignificant. However, these costs, it must be emphasised, cannot generally be attributed to cross compliance, since the regulations have long been an integrative part of national law. It is likely that eartags are replaced *more often* due to the greater risk of detection by cross compliance controls; however, the extent cannot be quantified at this stage.

8.3.8 Food safety

The standards on food safety are relevant for all farm holdings. When asked about the new provisions, many interviewees expressed concern about the potential inclusion of the provisions of the hygiene package into the SMRs relevant for cross compliance. They argued that it was almost impossible to fulfil general requirements such as the protection of animal feed against contamination by birds or rodents, and that massive reductions in direct payments might be the result if these standards were controlled in the context of cross compliance. Apparently there is considerable uncertainty and anxiety among farmers as regards the hygiene and food safety regulations; however it is not yet clear which of the standards will eventually be relevant for cross compliance (see section 6.2).

Little information could be gained from the interviews on the costs expected at farm level. In addition, Farmers' associations argued that costs could not yet be quantified.

¹³³ <http://www.lwk-bremen.de/TSK/2003-06-14%20%20%20Beihilfesatzung%20TSK.pdf>.

¹³⁴ <http://www.landvolk.net/1906.htm>.

¹³⁵ BMVEL 2005.

In order to ensure the traceability of food products, some farmers might choose to buy new software systems that facilitate management and documentation. However, most interviewees indicated that the existing documentation practice is likely to be sufficient.

The new standards concerning the provisions on hygiene in storage and transport might pose a challenge particularly for the cereals sector. On-farm storage of cereals will become more difficult. Farmers may have to upgrade their storage facilities, to directly sell after harvest (lower prices) or to rent storage space from retailers. An upgrading of storage facilities or the construction of new silos could translate into investment costs of 100 EUR/ton (new construction) or 50 EUR/ton (upgrading).¹³⁶

Interviews indicated that the weekly time dedicated to food safety-related documentation is in the range of 0.5 to 1.5 hours. However, since documentation is required of farmers in several areas, it is not straightforward to identify the exact time expenditure for any individual provision.

8.3.9 Plant Protection Products

No costs apart from those related to the storage of plant protection products (see section 8.3.4) were mentioned by interviewees.

8.3.10 Housing of calves

Cattle and dairy farms as well as mixed farms with cattle livestock are affected by the Directive on the protection of calves. Both the EU Directive and the German Livestock Protection Ordinance have been in force for several years. However, interviews indicate that not all housing facilities may be in line with standards and that investments might have to be undertaken by farmers in preparation for cross compliance controls in 2007.

Again, the investment need at national level can hardly be quantified due to the large differences between regions and individual farms. In some regions of the New *Länder*, where buildings are relatively new, the requirements do not pose a great problem, while in other cases and especially for smaller farm holdings the investment challenge might be substantial.

Investment costs for calf barns are between 1460 and 2000 EUR per animal. Yearly costs amount to between 150 and 200 EUR.¹³⁷ A farmer interviewee suggested that in his region¹³⁸ mostly holders of small farms had to undertake investments which he assumed to be in the range of 500 to 10,000 EUR.

¹³⁶ Wagner, Peter 2004: Rückverfolgbarkeit – Informationsflüsse entlang der Nahrungskette: Herausforderung, Bedrohung, Chance? www.landw.uni-halle.de/lb/publikationen/Rueckverfolgbarkeit_Dokumentation.pdf.

¹³⁷ KTBL 2005, p. 736. The calculation is based on an interest rate of 6%; amortisation is 30 years for long-lasting components, 15 years for medium-lasting components and 15 years for short-lasting components.

¹³⁸ Mainly grassland and livestock grazing; small to medium-sized holdings.

9 Conclusions

Since cross compliance has only recently been implemented in Germany, it is not straightforward to determine its effects on farm costs or on environmental, consumer and animal protection. However, some conclusions can be drawn from the preliminary analysis presented above.

The standards relevant for cross compliance in Germany form a comprehensive list of legislative provisions. Although only a limited subset of standards is systematically controlled during on-the-spot checks, cross compliance entails a high administrative effort on the part of the authorities.

For farmers, additional costs might arise from cross compliance, which however are highly dependent on individual circumstances. The GAEC standards, which were newly introduced, require measures to be taken that might impose additional costs. However, when analysing these costs both the altered payment schemes of farm subsidies after the CAP reform and funding under agri-environment schemes should be taken into account.

With regard to Annex III standards, individual farmers might be induced by cross compliance to undertake considerable investments, although the actual investment costs cannot always be directly or fully attributed to cross compliance and are usually influenced also by specific national building standards.

Holders of small farms, part-time farmers or farmers who consider giving up their farms in the medium term are likely to find cross compliance most challenging. While large farms or co-operatives may employ special staff for documentation and administration and may already have optimised their farm management systems, small farms and part-time farmers may be less able to cope with the increased requirements concerning documentation and administration. Also, the threshold for undertaking new investments is higher for small farms, and deficits in compliance with standards may thus be more often found in small and part-time farms.

However, it is not easy to quantify national level costs, due to the great differences in farmers' situations and farm sizes between regions and between individual holdings. When asked about the costs of cross compliance, stakeholders express the greatest concerns about the mounting bureaucracy and the increased administrative effort. Many interviewees also said that for the national economy, the costs created by cross compliance through the demand for personnel in the ministries is much more significant than the additional costs incurred by farmers.

Cross compliance will most likely improve compliance with standards and induce farmers to overhaul farm management and enhance performance with regard to environmental, animal and consumer protection, but also with regard to farm efficiency. Also, some environmental benefits may be expected from the new GAEC standards. However, these potential benefits have to be weighed against the costs and efforts required for implementation.

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