



**EQUIVALENCE MECHANISMS USED FOR COMPLYING WITH GREENING REQUIREMENTS
UNDER THE NEW COMMON AGRICULTURAL POLICY (CAP)**

A report to the European Environmental Bureau (EEB)

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by

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Contents

EXECUTIVE SUMMARY.....	V
1 INTRODUCTION.....	1
1.1 Objectives of the study	1
1.2 Background and context	1
1.3 Methodology and caveats.....	3
2 THE GREENING MEASURES AND THEIR POTENTIAL ENVIRONMENTAL IMPACTS.....	5
3 EQUIVALENCE OF CERTIFICATION SCHEMES	8
3.1 Range of certification schemes available in the five Member States	9
3.2 Comparative analysis of certification scheme requirements with the proposed greening measures	15
3.2.1 <i>Certification schemes and greening – similarity of practices</i>	<i>15</i>
3.2.2 <i>Certification schemes and greening – similarity in relation to impacts</i>	<i>17</i>
3.3 Control mechanisms for certification schemes	18
4 EQUIVALENCE OF AGRI-ENVIRONMENT MEASURES/ACTIONS	20
4.1 Comparative analysis of agri-environment measures with the proposed greening measures	20
4.1.1 <i>Agri-environment measures and greening – similarity of practices</i>	<i>20</i>
4.1.2 <i>Agri-environment measures and greening – similarity in relation to impacts</i>	<i>24</i>
5 OVERALL CONCLUSIONS AND RECOMMENDATIONS	26
ANNEX 1 – DESCRIPTION OF SHORTLIST OF CERTIFICATION SCHEMES INVESTIGATED.....	29
ANNEX 2 – DETAILED REQUIREMENTS OF CERTIFICATION SCHEMES.....	37

List of Tables

Table 1: Greening measures as proposed by the Commission.....	5
Table 2: Environmental objectives proposed for the greening measures	6
Table 3: Assessment of the potential impacts of the Commission’s greening measures	7
Table 4: Number of schemes by environmental theme and type of production identified ...	10
Table 5: Shortlist of certification schemes – basic information	13
Table 6: Comparison of certification schemes with greening requirements - practices.....	16
Table 7: Control requirements for selected certification schemes	19
Table 8: Categories of agri-environment management actions with relevance to the greening measures.....	20
Table 9: Equivalent practices in the Poland agri-environment scheme	22
Table 10: Equivalence of agri-environment practices with the greening measures.....	23
Table 11: Different management practices with potentially equivalent impacts.....	25

List of Figures

Figure 1: Number of schemes by primary topic covered (EU-27) in 2010	9
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EXECUTIVE SUMMARY

One of the key issues in the negotiations on the future of the CAP beyond 2014 is the way in which the commitment to ‘green’ direct payments to farmers under Pillar 1 will be implemented in practice. A particularly sensitive issue in the current debate surrounds the flexibility given to Member States to choose different ways of going about greening in relation to the model proposed by the Commission, which would mark quite a major change from the original proposals.

The study assessed in broad terms the degree to which existing certification schemes for farm products (involving environmental requirements) or voluntary measures under agri-environment schemes could be considered to be ‘equivalent’ to the three greening measures proposed by the Commission in October 2011. Both management practices and their potential environmental impacts were considered. It seeks to add clarity to an issue which is an important element of the debate on how best to ‘green’ the CAP through focusing on schemes operating in five Member States: France, Ireland, the Netherlands, Poland and Spain.

The review shows that while the concept of equivalence may sound like a reasonable and convenient approach in theory, the practical issues with its application are likely to lead to far greater administrative complexity and cost, both for Member States and within the Commission, with arguably little additional environmental benefit.

The CAP reform negotiations are entering their final stages, the delegated acts are starting to be drafted in detail and Member States are considering the implementation of the greening measures. This is an important time, therefore, to think through the issues that equivalence raises and find solutions that simplify rather than over-complicate the future delivery of environmental outcomes from agriculture.

Equivalence of certification schemes – A total of 67 certification schemes with an environmental component were screened in France, the Netherlands, Ireland and Spain (of which 7 were organic). No readily available up to date information was found on Poland. Up to four schemes (excluding organic) in each country appeared most relevant and were investigated in more detail. Of these:

- The requirements of the French scheme ‘Haute Valeur Environnementale’ are most similar in nature to the Commission’s proposed greening measures. This requires 10 per cent of the holding to be allocated for ecological purposes and at least 50 per cent of permanent pasture must be retained for at least five years. It does not include any crop diversification requirements. However so far, only three farmers have signed up to this scheme.
- Some other certification schemes require landscape features to be maintained or buffer strips (often permitting production but not fertiliser use) to be introduced, but none of these stipulate a minimum area of the farm that must be covered by these elements, which is a key feature of the proposed Ecological Focus Areas. Some also require crop diversification or rotations.

- The majority of certification scheme environmental requirements require actions that are either similar or the same as those required under environmental legislation – for example actions stipulated under national Nitrate Action Plans.
- This implies that to be equivalent, either significant changes would be needed to existing schemes or Member States would need to introduce entirely new certification schemes.

Equivalence of agri-environment scheme measures – all basic level requirements were reviewed for agri-environment schemes in France, Ireland, the Netherlands, Poland and Spain. This showed that:

- There is a greater range of equivalent management practices supported under agri-environment schemes than under certification schemes. However only in very few cases do they cover the requirements of all three greening measures.
- The equivalent practices that occur most frequently relate to the maintenance of landscape features and the introduction of buffer strips (EFA), the introduction of crop rotations (crop diversification) and the maintenance of permanent grassland. In most schemes there are no area obligations, as required under the EFA, although of course this may be exceeded in practice in many farms already.
- In Poland, all agri-environment scheme participants have to maintain all landscape features on the holding and options are available to introduce buffer strips of different widths, however there is no minimum area that these must cover.
- In certain regions of Spain, farmers are required to leave a proportion of the arable area fallow (8.5 per cent in the Basque country) or a proportion of the farmed area as farm boundaries or natural vegetation (up to three per cent in Castilla y Leon and Castilla la Mancha). With the exception of the Basque country, all area requirements are lower than those proposed for the EFA.
- This implies that very few farmers are likely already to be carrying out the full range of practices equivalent to the greening measures within their agri-environment agreements, although in a limited number of cases equivalent impacts may be achieved.

The study demonstrates that issues arise not just of establishing equivalent certification schemes and agri-environment measures but also of assessing and verifying their equivalence in a robust, meaningful and transparent way. For example:

- Judging the equivalence of practices is fairly straightforward for the permanent grassland and crop diversification measures (as proposed by the Commission). In any form, the EFA measure is much more difficult to assess as it comprises two distinct elements – an area target and a menu of permissible options. It is not sufficient simply to ascertain that certain elements of the EFA menu are included within a certification or agri-environment scheme, it is also important to know the proportion of the farm that these cover. This is complicated further by the fact that even if the area requirement is not stipulated by the scheme in question, a farm may still have the requisite area covered by these features.

- Assessing equivalence of impact is even more complex. The nature of the environmental impacts will differ depending on bio-geographical, climatic factors as well as variables such as the location of the practice within the holding, previous management as well as the existing condition of landscape features. For EFAs there is the additional issue of determining what one is measuring equivalence against, given the range of different permutations of options from the proposed menu that could be in place on different farms.

Consequently, there are implications not only for designing a robust process of formally assessing which certification or agri-environment measures can be deemed equivalent, but also for inspection regimes and, in the case of agri-environment schemes, also for payment rates.

1 INTRODUCTION

1.1 Objectives of the study

One of the key issues in the negotiations on the future of the CAP beyond 2014 is the way in which the commitment to 'green' direct payments to farmers under Pillar 1 will be implemented in practice. This study addresses a particularly sensitive question that has arisen over the last year about the flexibility given to Member States to choose different ways of achieving greening, relative to the model proposed by the Commission. It is an important element of the current debate on how best to 'green' the CAP as any increase in flexibility would mark quite a major change from the original proposals.

The purpose of the study is to assess the degree to which existing certification schemes for farm products or voluntary measures under agri-environment schemes can be considered to be 'equivalent' to the three greening measures proposed by the Commission in October 2011¹. This can be assessed either in terms of the management practices they require of farmers or their potential environmental impacts. The review covers existing certification schemes and agri-environment measures in five Member States (France, Ireland, the Netherlands, Poland and Spain).

In carrying out this review, the study considers the issues inherent in assessing equivalence in practice, considering in particular the difficulty of assessing equivalence in a way that is empirically robust, administratively transparent and not unduly complex.

The study offers recommendations on the way that equivalence could be approached, including certain safeguards that should be put in place, so that the benefits delivered by approved equivalent schemes provide at least the same level of benefits as the greening measures proposed by the Commission.

1.2 Background and context

One of the key elements of the current CAP reform is that environmental management and the delivery of public goods should become increasingly one of the core purposes of agricultural support. 'Sustainable management of natural resources and climate action' is one of three general objectives of the proposed CAP for 2014 to 2020. It is proposed that this will be achieved through changes to a range of policy instruments within both Pillars of the CAP. The greening of Pillar 1 - introducing a set of agricultural practices beneficial to climate and environment into Pillar 1 direct payments - has been put forward as a central platform for achieving this and in so doing has become one of the most contentious elements of the reform package.

¹ The three requirements proposed by the Commission are as follows: **Crop diversification:** three different crops to be grown on arable land over 3 hectares, with no crop covering less than 5 per cent of the area and the main crop covering no more than 70 per cent. **Permanent grassland:** maintain 95 per cent of the area of permanent grassland on the holding as declared in 2014. **Ecological Focus Areas:** 7 per cent of the holding (excluding permanent grassland) must be managed as ecological focus areas, examples of which include landscape features, fallow land and buffer strips (European Commission COM(2011) 625 final).

The debates have thrown up many criticisms of these proposals, from Member States via the Agriculture Council, the European Parliament and many stakeholders. One of the main thrusts of the criticisms is the lack of flexibility they provide to farmers for applying the measures and to Member States to determine the design and implementation of the greening measures in their territories. This has led to a range of amendments to the Commission's original proposals, all of which are still under discussion and subject to agreement through the triilogue negotiations over the coming months. This debate has accelerated over the last year, following a Commission Concept paper of May 2012², in which it responded to the extensive institutional debate on greening by proposing that nationally designed measures could be judged as being equivalent to the Commission's three compulsory greening measures if they met three criteria concerning:

- the coverage of the whole farm (in line with the greening objective that almost all the agricultural area is subject to greening requirements),
- an environmental ambition level that goes beyond the ambition level of the relevant greening measure(s), and
- a type of agri-environment-climate commitment (under the new agri-environment-climate measure) or certification scheme requirement that corresponds to the type of greening measures proposed by the Commission.

The Commission presented its proposal as a means of simplification and improved delivery of environmental benefits, suggesting that this evolution of its original plans could encourage other farmers to join the schemes and programmes in question, thereby increasing the overall environmental and climate benefit of the CAP. This idea has been taken up with enthusiasm by some members of the Council.

In particular, in its 'General Approach', the mandate for negotiations with other EU institutions, the Agriculture Council has proposed to permit those adhering to the requirements of approved agri-environment or certification schemes to be deemed to be complying with the greening measures³. The European Parliament Plenary, however, rejected similar proposals from the Agriculture Committee in its final negotiating mandate⁴.

In a second, related development, the Agriculture Council additionally has proposed that approved certification schemes could be used as the sole vehicle for delivering Pillar 1 greening within a Member State or region. This latter proposal is not the focus of this study, although some of the findings clearly have implications for the types of certification schemes that would be appropriate for this purpose, should this proposal be accepted as part of the final CAP agreement.

In practice, however, the proposals for applying the concept of 'equivalence' could present significant risks for the environmental outcomes of the reform, if the concept were used as a means of minimising what is required of farmers or as a means of permitting double funding of actions under Pillar 1 and Pillar 2. This risk is heightened by the fact that little

² European Commission, *Greening – Concept paper*, May 2012, http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/concept-paper-on-greening_en.pdf

³ See Council documents [7183/13](#), [7183/13 + ADD 1](#), [7183/13 ADD 2](#), [7539/13](#) and [7539/13 ADD 1](#).

⁴ <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2013-84>

clarity has yet been provided on how equivalence would be assessed in this context or exactly how the mechanism would tie in to the current system of direct payments. Questions still remain on whether equivalence refers to the 'level of ambition' of a measure, the outcome on the ground or, more concretely, the 'type of commitment' that a relevant farmer would need to undertake. Nor has it been indicated whether or not this issue is going to be clarified in legislation, directly in the regulation or later on in the delegated and/or implementing acts. With no analytical framework for considering and comparing *ex ante* the likely environmental implications of the different ways of being compliant with the Commission's three green measures, the whole debate is being conducted in a very imprecise way, with many unsubstantiated assertions made and judgements being exercised. Equally unclear is the timing, for example if equivalent schemes needed to be approved by the Commission in advance of their introduction, there is as yet no indication on the process or timescales for this.

1.3 Methodology and caveats

Geographic coverage: The focus of the analysis is on five Member States - France, Ireland, the Netherlands, Poland and Spain. This choice of countries includes a good geographic spread, including a number where discussions are underway on the degree to which their certification or agri-environment schemes might be argued to be equivalent.

Overall methodological approach: It is not clear at present precisely how far the three greening measures proposed by the EC will be altered in the course of the negotiations on CAP reform. A range of amendments has been proposed in relation to all three of them. Consequently, for the purpose of this study equivalence is assessed against the Commission's original proposals of October 2011.

Evidence has been collated from a variety of sources that are in the public domain. These include current certification and agri-environment scheme documentation and evaluation literature where this exists. This has been supplemented where necessary and appropriate by expert knowledge.

Data issues: As a starting point, the study used a database of farm and farm product certification schemes operating in the EU-27 that was compiled for DG Agriculture in 2009/2010⁵. Although this was helpful in giving an initial indication of the nature of certification schemes existing at that date, in some of the countries examined (France and the Netherlands in particular), significant changes have taken place since then. Therefore, this data was supplemented with more recent information where this was available free of charge. For the agri-environment element of the study, the data used are based on the measures that were in place in Member States' agri-environment schemes in 2011, based on information from Rural Development Programmes (RDPs) updated after the CAP Health Check. Any subsequent changes to agri-environment schemes have not been taken into account for this analysis.

⁵ Areté, 2010, Inventory of certification schemes for agricultural products and foodstuffs marketed in the EU Member States - Data aggregations- http://ec.europa.eu/agriculture/quality/certification/inventory/inventory-data-aggregations_en.pdf

It should also be noted, that there is limited evaluation literature that considers the impact of certification schemes on the environment. Where information does exist this tends to be more focused on the impacts of such schemes on consumer behaviour since the intention of most schemes is to have a positive market impact. For this reason, the analysis of the potential equivalence of schemes with the greening measures has been based largely on existing literature on the impacts of different agricultural practices on the environment in conjunction with the expert judgement of the study team. This analysis has been carried out at a very generic level. In practice, it should be noted that the nature of the environmental impacts would differ depending on a whole range of bio-geographical, climatic factors as well as variables such as the location of the practice within the holding. These aspects are not taken into account here and would require far more detailed analysis than was possible within the scope of this study. Nonetheless, what this broad brush assessment can provide is an indication of where potential equivalence of impacts might be anticipated.

2 THE GREENING MEASURES AND THEIR POTENTIAL ENVIRONMENTAL IMPACTS

As stated above, for the purposes of this study, the equivalence of an alternative approach is assessed against the European Commission’s original proposals for the introduction of three compulsory green measures within Pillar 1⁶. The three measures and their potential environmental impacts are set out here as the baseline against which to assess the practices and impacts of a range of certification schemes and agri-environment measures.

The three green measures proposed are crop diversification, maintenance of permanent grassland and ecological focus areas (EFAs). The specific practices that farmers would need to follow under each of these headings are set out in Table 1. In relation to EFAs, the original legislative proposals provided only an indication of the types of features that would be considered part of the EFA. A more detailed list has been included here based on elements proposed within a Commission working document on the possible content of EFAs⁷. No agreement on this list has been made at the time of writing.

Table 1: Greening measures as proposed by the Commission

Measure	Detailed requirements – as stated in proposals
Crop diversification	<ul style="list-style-type: none"> - 3 different crops to be grown on arable land over 3 ha. - None of the three crops shall cover less than 5 % of the arable land and the main one shall not exceed 70 % of the arable land
Permanent grassland	<ul style="list-style-type: none"> - Maintain 95 per cent of the area of permanent grassland on the holding as declared in 2014
Ecological Focus Area	<ul style="list-style-type: none"> - 7 per cent of the holding (excluding permanent grassland) must be managed as ecological focus areas - The 7 per cent can be made up of different elements, including: <ul style="list-style-type: none"> o Land left fallow o Terraces o Landscape features, eg hedges; ponds; ditches; trees in a line, in a group or isolated; field margins; o Buffer strips – with no production on them; o Areas afforested with funding from EAFRD

Sources: European Commission COM(2011) 625 final; European Commission (2012) – Fiche 16
NB farms opting into the proposed Small Farmers Scheme would be excluded from these measures.

The potential environmental benefits or impacts of these measures are not straightforward to assess for two main reasons. Firstly the environmental objectives of the greening measures are not articulated in any detail in the legislative proposals beyond the broad intention that they should bring benefits for biodiversity, climate, soils and water. As a result there are no specific objectives against which to assess anticipated benefits. Secondly, the nature of the impacts will differ depending on bio-geographical and climatic factors as well as their location on the farm and the past history of management. The benefits of new or protected landscape features for biodiversity will depend very significantly on the degree

⁶ COM(2011) 625 final

⁷ European Commission (2012), CAP Reform, Fiche Number 16, Direct Payments – Definition of Ecologic Focus Areas, Brussels, 18 April 2012

to which they are affected by spray drift and/or fertiliser run-off. If trees are planted the species also will be a critical factor for any potential biodiversity impacts. However for the purposes of this study, it is not possible to break down the impacts in this way. It is important to recognise that more detailed analyses including a set of assumptions about factors such as participation levels, regional variations in farm type, etc would be needed in practice to assess impacts more accurately.

Given these limitations, the assessment here has been based on the potential of the measures to deliver benefits against a range of objectives, as set out in Table 2. These objectives of the greening measures have been derived from an interpretation of the text, the Commission’s impact assessment, related agri-environment measures and other sources such as the EU biodiversity strategy. They are not so explicit in the draft regulation. The potential impacts have been based on a review of the literature and the expert judgement of the study team. A generic scoring system has been used to show the likely magnitude of the environmental impact anticipated.

Table 2: Environmental objectives proposed for the greening measures

<p>Overarching objective: To ensure a basic level of environmental management on all EU farmland</p> <p>Biodiversity: To support the conservation of biodiversity by improving the conservation status of species and habitats, especially those that are characteristic of agricultural habitats and/or are affected by agriculture, as compared to the EU 2010 Baseline (Target 3 of the Biodiversity Strategy) through:</p> <ul style="list-style-type: none"> - maintenance of semi-natural grassland habitats and other existing HNV farming systems and associated habitats and habitat features, especially where the risk of land abandonment is high; - improvement in the ecological condition of farmland habitats; - avoidance or reduction of farming practices that cause off-farm impacts, such as pollution of water courses; - maintenance and creation of habitats and features for farmland species that support broader landscape-scale conservation needs, to reduce habitat fragmentation and facilitate climate change adaptation. <p>Water flow: To reduce the risk of flooding by impeding and limiting flow and /or increasing the infiltration or storage capacity of land</p> <p>Water quality: To improve water quality and contribute to achieving good ecological status of water bodies through reducing surface run-off and leaching of nutrients into water courses.</p> <p>Soil functionality:</p> <ul style="list-style-type: none"> - To reduce soil erosion by reducing surface run-off and improving soil stability - To improve soil fertility by minimising nutrient leaching - To improve soil organic matter content <p>Climate Change:</p> <ul style="list-style-type: none"> - To reduce carbon dioxide and nitrous oxide emissions from soils - To maintain carbon rich soils - To increase carbon sequestration <p>Landscape: To maintain the diversity and distinctiveness of agricultural landscapes</p> <p>NB: All greening measures can contribute to multiple objectives</p>

Table 3 sets out an assessment of the potential scale of impacts of the various components of the greening measures. Each measure is assessed according to the likely magnitude of the

impact applied on a widespread scale, as the Commission intended, as well as any situations where there is a risk of negative impact. The permanent grassland measure has been broken down into semi-natural grassland and intensively managed permanent grassland due the consequences for the different habitats.

Table 3: Assessment of the potential impacts of the Commission’s greening measures

Greening Measure	Biodiversity				Water		Soil			Climate Change	Land-scape
	Plants	Birds	Mammals	Invertebrates	Water flow	Water quality	erosion prevention	Soil fertility	Soil organic matter	Climate change mitigation	Diversity and character
Ecological Focus Area - 7% of the eligible area to be made up of a combination of the following elements:											
Fallow – stubble / regenerated cover	+	++	+	+	-	++	+	+	+	+	+++
Fallow – planted green cover				+	++	+	++	+++	++	++	+++
Field corners/ uncultivated patch	+	+	+	+	+	++	+	+	+++	++	+++
Patches of semi-natural habitat	+++	+++	+++	+++	+++	+++	++	+++	+++	+++	+++
Afforested areas (funded via EAFRD)	+/-	+/--	+/-	+/-	+++	+++	++	+/?	+++	+++	+++
Hedge	+	++	++	++	+++	+++	++	+	+++	+++	+++
Ponds	+	+	+	++	++					+	+++
Ditch	+	+	+	+	+++						+++
Terrace	+	+	+	+	++	++	+++				+++
Stone walls	+	+		+	+++	+	++				+++
Trees (single, line)		+	+	++	+++	++	+++	+	+++	++	+++
Planted strip of seed-bearing plants for birds		++	+	+	++	+++	++	++	++	++	+++
Wildflower strip	++	+	+	++	++	+++	++	++	++	++	+++
Buffer strip (grass)	(+)	+	+	+(++)	+	++	++	+	++	+	+++
Crop diversification											
	+	+	+	+		+		+	+		++
Maintenance of Permanent Grassland											
Semi-natural grass	+++	+++	+++	+++	+++	++	+++	+++	+++	+++	+++
Intensively managed permanent grass		+/+ +	+	+	++	++	++	+	++	+	++

Source: Bureau J C, 2013⁸; Allen et al, 2012⁹; evidence review of agriculture and environmental interactions¹⁰

Key: +++ high likely impact; ++ medium likely impact; + small likely impact; blank- no impact; - possible negative impact; -- possible significant negative impact

⁸ Allen B, Buckwell A, Baldock D and Menadue H (2012) [Maximising environmental benefits through ecological focus areas. Institute for European Environmental Policy, UK.](#)

⁹ Bureau J C, 2013, [The biodiversity consequences of killing Ecological Focus Areas,](#)

¹⁰ <http://www.environmentalevidence.org/SR35.html>

3 EQUIVALENCE OF CERTIFICATION SCHEMES

There is a whole range of different certification schemes in operation in Member States in the EU-27. A study undertaken in 2010 identified 424 different schemes operating in the EU-27, including sub-schemes¹¹. Their purpose is typically to set standards (mainly for products) that respond to market requirements, in some cases with the aim of securing a market premium for the product. These schemes, sometimes known as quality assurance schemes, define standards for the farmer or processor to meet, operate inspection systems and apply sanctions when the standards are not met. Most are privately operated, for example by sectoral bodies (beef, organic etc) or retailers (eg supermarkets), although some are publicly operated. The level of EU activity in the area of certification is currently limited to organic production and a set of approved labels validating the authenticity of certain regional products (PDOs, PGIs).

Certification schemes can cover activity on the farm as well as those beyond the farm gate, such as processing, packaging and distribution. Participants can range from farmers (primary producers), suppliers, processors, retailers and the whole food chain in some cases. For the purposes of this study, the focus is only on those certification schemes that affect on-farm production methods and have an environmental component as it is these that are relevant to the debate on equivalence with the package of greening measures. This means that large numbers of schemes focused on animal welfare, animal health, food safety and hygiene and traceability are excluded, as are single product designations, such as the PDO and PGI designations. The latter will not meet the criteria of being accessible to all farmers and they are generally not related to environmental criteria (apart from in a few specific cases).

Membership of certification schemes is voluntary and the size of membership varies between different schemes. In order to receive certification, specified standards for production methods, management practices or final products need to be met. In addition, the requirements and rigour of schemes vary. Some schemes involve a farm audit, whilst others may require record keeping or the production of farm management plans. Schemes may be composed of a compulsory element, which must be fulfilled in order to acquire certification, as well as additional recommended practices that are not a requirement for certification. The extent to which they focus on environmental considerations and practices also varies greatly.

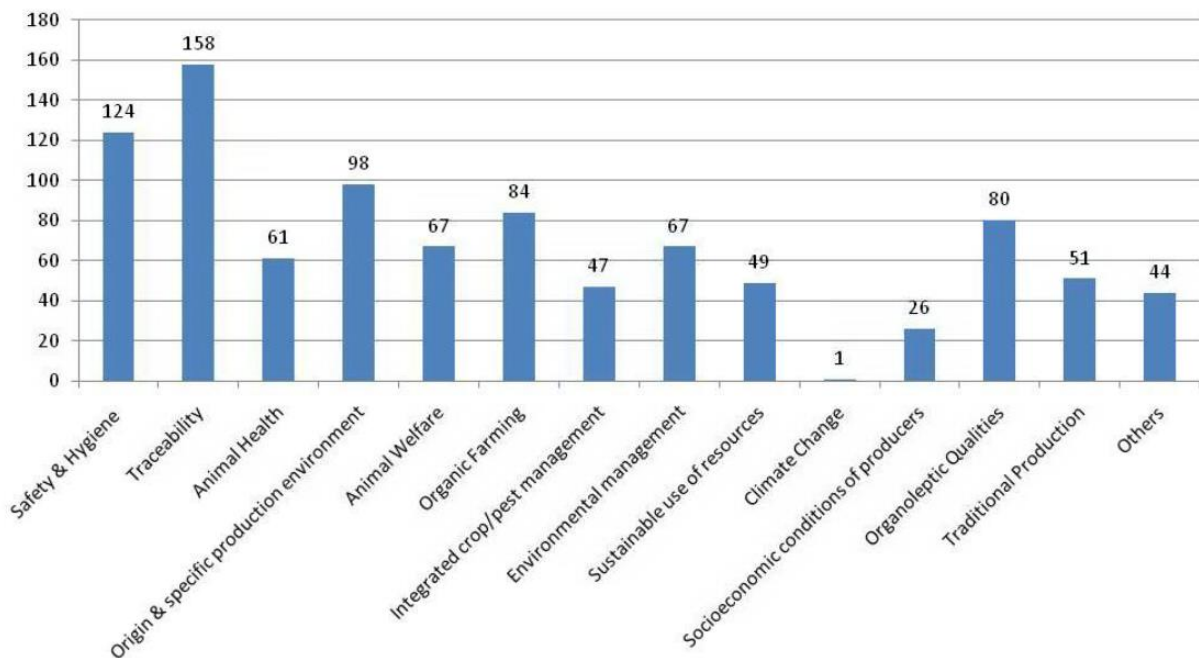
Figures from a survey of certification schemes operating in all 27 Member States in 2010¹², showed that under a quarter contained some form of environmental requirements. Of the total number of schemes surveyed, 24 per cent were organic; 19 per cent contained environmental management requirements; 14 per cent included requirements for the sustainable use of natural resources and 13 per cent were focused on integrated crop management (see Figure 1). Climate change was the primary focus only in one case. This compares with 45 per cent of schemes focused on product traceability and 35 per cent focused on food safety and hygiene. This review was published in 2010 and since then

¹¹ Areté, 2010, Inventory of certification schemes for agricultural products and foodstuffs marketed in the EU Member States

¹² Areté, 2010 *ibid*

considerable changes have taken place in the range of content of certification schemes available in some Member States, notably France and the Netherlands.

Figure 1: Number of schemes by primary topic covered (EU-27) in 2010



Source: Areté, 2010

NB: Aggregation fed by total of 346 schemes out of a theoretical total of 352 – schemes can cover multiple policy areas

3.1 Range of certification schemes available in the five Member States

It was possible to find up to date information on certification schemes in only four of the five Member States considered for this study (France, Ireland, the Netherlands and Spain). Initial enquiries in Poland suggested that the limited data available from the Areté 2010 survey were out of date, however it was not possible to ascertain which certification schemes (beyond an organic scheme) were currently operational. We have therefore excluded Poland from the analysis in this section.

In the four Member States reviewed, a total of 67 certification schemes were found that included some form of requirements related to environmental aspects of farm production methods (see Table 4).

Table 4: Number of schemes by environmental theme and type of production identified

	No of schemes	Organic	Integrated crop management	Environmental management	Sustainable Use of Natural Resources	Climate change	Traditional products / methods	Origin and specific production: environment ¹	Crop Production	Livestock / meat production
France	17 ²	1	2	4	3	0	5	11	15	12
Ireland	6	2	1	0	1	0	0	2	5	4
Netherlands	18	2	1	10	4	4	0	0	8	10
Spain	26	2	15	3	3	0	8	9	19	15
Total	67	7	19	17	11	4	13	22	47	41

Source: Own compilation

¹ Excluding PDO/PGI ² Excluding those certified under the CEE (Tier 2)

NB: Schemes can cover multiple categories

The scope of standards embodied in schemes varies from those relating to a single theme (eg organic or ICM) to standards that encompass many different issues. They also often include a mix of compulsory standards and additional best practice recommendations. Of the schemes identified, seven were organic certification schemes. These were not explored further due to the fact that land certified as organic is already deemed to be ‘green by definition’ in the proposed CAP regulations and therefore these holdings do not need to demonstrate equivalence with the greening measures under the proposed legislation. Of the remaining schemes, further investigation showed that the majority focus on *inter alia* compliance with existing legislation; applying integrated crop management ‘practices’; and/or putting in place management plans (eg on nutrient use) and keeping records on the use of pesticides and fertilisers. A small number do go further than this and have more stringent environmental requirements.

On this basis, up to four certification schemes in each country were chosen for more detailed investigation to assess their equivalence with the Commission’s proposed greening measures. The schemes chosen contained some form of environmental requirements, and were focused on arable, permanent crops and/or grazed livestock systems, where the Commission’s measures are particularly aimed. Schemes that are both publicly and privately operated were considered.

In **France** the main focus of the analysis is on the new government led ‘*certification environnementale des exploitations*’ (CEE) scheme, developed with stakeholders (via le Grenelle de l’environnement) and introduced in 2011/12. Its emphasis is on four key environmental themes: biodiversity, plant health management, fertiliser management and water management¹³. This scheme has three tiers. The first tier involves compliance with

¹³ <http://agriculture.gouv.fr/Grenelle-de-l-Environnement-la>

standards of good agricultural and environmental condition (GAEC) and a self-assessment exercise towards becoming certified under the second or third levels. The GAEC standards apply to all recipients of direct payments under the CAP and this tier is not considered further here. The second tier involves compliance with a suite of 16 environmental requirements, some of which derived from schemes that were already in operation. To date, 19 national and regional certification schemes that were already operating in France have been awarded Tier 2 certification and two of these are investigated in more depth here, namely *Agriculture raisonnée* and *Agriculture respectueuse de l'environnement en Aquitaine* (AREA).

The third tier of the CEE is known as '*Haute Valeur Environnementale*' (HVE) or 'High Value Environment' and has the highest environmental requirements, with which land managers must comply to use this term on their products. There are two ways of being certified as HVE: under Option A¹⁴, farmers have to demonstrate how they perform against four environmental indicators (biodiversity; pest management; fertiliser management; and water management) and must score at least 10 points; under option B¹⁵, at least 10 per cent of the area of the holding must be allocated for ecological purposes; at least 50 per cent of permanent pasture must be retained for at least five years and the cost of all inputs must be equal to or less than 30 per cent of the holding's turnover. Certification of the HVE has been slow to take off and to date there are only three producers in France with the HVE certificate, two of whom are wine growers. Outside the CEE, one scheme has been chosen for further examination - *Agri Confiance Qualité Environnement*. This is a national scheme that encompasses 14 agricultural products (oilseed crops, fruit and vegetables, cider apples, milk, poultry, waterfowl, rabbit, beef, pork, fish, wine, linseed and flowers).

In **the Netherlands**, four schemes have been investigated. The two longest established schemes are *Milieukeur* and the *Graskeurmark*. *Milieukeur* is a broad sustainability label, which has been in place since 1992, covering a whole range of products, including food production processes. The *Graskeurmark* is a private scheme, founded in 1991, and applies to the livestock sector (dairy, beef, poultry, pig, egg and feed) and potato growers. It promotes grass fed livestock and includes standards limiting chemical inputs. More recent schemes include the Skylark initiative and MPS Fruit and Vegetables. The *Skylark* initiative is not yet a certification scheme as such, although this is in the final stages of development. Rather the initiative promotes an integrated whole farm approach to arable farmers who are assessed against a suite of sustainability indicators and each year have to develop an individual sustainability plan in conjunction with an accredited sustainability adviser¹⁶. *MPS Fruit and Vegetables* is a very new certification scheme, which was launched in 2010. It is the first scheme that applies to vegetables and fruit in the Netherlands. The scheme applies to edible agricultural products from the crop sector (vegetables, fruit, arable products, fresh herbs and spices). The scheme requires compliance with criteria related to sustainability (use of pesticides, fertilisers, waste, energy and water), the reliability of the registration of

¹⁴ http://agriculture.gouv.fr/IMG/pdf/doc2-plan_controle_niveau3AV1_CNCE_25_10_2011.pdf

¹⁵ http://agriculture.gouv.fr/IMG/pdf/doc4-plan_controle_niveau3BV1_CNCE_25_10_2011.pdf

¹⁶ Van Vilet J, Vlaar L, van der Waal E, Kuneman G (2012) Benchmarking Dutch arable certificates against SAI Principles and Practices: analysis of the schemes Milieukeur, MPS Fruit & Vegetables, VVAK-sustainability and Global GAP, CLM807, 2012

pesticides, hygiene and transparency on the use of pesticides on crops¹⁷. Two further certificates beyond the MPS F&V basic certificate are offered: Vita Certa, for producers who have scored the highest (A grade) against all the criteria; and the Natural Protected certificate which requires an A-score against all the criteria and prohibits the use of pesticides that are banned under organic schemes¹⁸.

Very few certification schemes were found operating in **Ireland** that looked as if they might involve management practices similar to those required through greening. Three schemes were chosen for further investigation. Two of these are part of the family of *Bord Bia Quality Assurance Schemes*, which were established in 2004 and cover a range of products including bacon, beef, chicken, duck, eggs, lamb, pork, turkey and fruit and vegetables. Currently over 40,000 farmers are certified¹⁹. The two schemes investigated here are those for beef and horticulture. In addition the *Irish Grain Assurance Scheme*, a privately operated scheme, managed by CropSure Ltd, has certain requirements in relation to the production of cereals relating to input use. The main focus of the scheme is to guarantee consumers that cereals and other combinable crops have been properly handled, stored and transported.

In **Spain** the majority of certification schemes identified focused on integrated crop production. Three *integrated production schemes* in different regions of Spain have been examined (La Rioja, Andalucia and Galicia). In addition to these, a national scheme, *Naturane*, has been examined. This is a quality assurance scheme that guarantees products from members of the Anecoop are of high quality and produced using environmentally friendly methods. Anecoop was founded in 1975, spans 11 regions of Spain and is recognised as the leading fruit and vegetable producer in the Mediterranean. It exports to 60 different countries and has 76 cooperative members with thousands of farmers²⁰. Naturane is approved by the Global Partnership for Good Agricultural Practice (GLOBAL GAP)²¹

An overview of the schemes selected in each Member State is provided in Table 5 and further details are provided in Annex 1 and 2.

¹⁷ <http://www.mps-food.com/en-us/home.aspx>

¹⁸ Van Vilet *et al*, 2012 *ibid*

¹⁹ <http://www.bordbia.ie/aboutfood/quality/Pages/default.aspx>

²⁰ <http://www.anecoop.com/en>

²¹ '**GLOBALGAP**, the *Global Partnership for Good Agricultural Practice*, is an international private sector body that sets voluntary standards for the certification of agricultural products around the globe. The Globalgap standard is primarily designed to reassure consumers about how food is produced on the farm by minimising the detrimental environmental impacts of farming operations, reducing the use of chemicals and ensuring a responsible approach to worker health and safety.'

Table 5: Shortlist of certification schemes – basic information

	National/ regional	Private/ Public	Responsible body	Sector	Membership
France					
Agri Confiance	National	Private	A group of cooperatives	Crops and livestock (14 Agri-food sectors)	128 cooperatives; 30,000 holdings; 10% of FR agriculture;
Certification environnementale des exploitations (CEE) : Level 2 and Level 3 (Haute Valeur Environnementale)	National	Public	CNCE - Commission nationale de certification environnementale	All	Level 2: 19 schemes are recognised within this framework ²² Level 3: 3 farms certified to date
Agriculture Raisonnée	National Level 2 CEE	Public	Cnar (Commission nationale de l'agriculture raisonnée et de la qualification des exploitations), FARRE	Crops and livestock	1,883 holdings in 2012
AREA - Agriculture respectueuse de l'environnement en Aquitaine	Regional Level 2 CEE	Public	Conseil régional d'Aquitaine	Crops and livestock	More than 5,500
Ireland					
Bord Bia - Quality Assurance Scheme - Beef	National	Public	Bord Bia / Irish Food Board	Beef	49 beef producers
Bord Bia - Horticulture Quality Assurance Scheme	National	Public	Bord Bia / Irish Food Board	Horticulture	326 producers
Irish Grain Assurance Scheme	National	Private	Crop Sure Ltd	Cereal crops	51 members
The Netherlands					
Graskeurmerk	National	Private	Stichting Gras Keurmerk	Livestock production and potato growers	not available

²² <http://agriculture.gouv.fr/Liste-des-demarches-reconnues-par>

The Skylark initiative	National	Private	The Skylark Foundation (not yet a formal certification scheme)	Arable crops	200
MPS Fruit and Vegetables	National	Private	MPS and AgriQ	Fruit and vegetables	Not available
Milieukeur	National	Public	Milieukeur Foundation	All	73 products
Spain					
Naturane	National (internationally recognised)	Private	Anecoop (a network of Spanish cooperatives). The environmental criteria of Naturane are approved by Globalgap	Fruit and vegetable	76 cooperatives (thousands of farmers)
Producción Integrada (Galicia) (Horticulture)	Regional	Public	Regional government	Horticulture	138 (534 ha) (2007 data – smallest IP area in Spain)
Producción Integrada de la Rioja	Regional	Public	Regional government	Fruit and vegetables	503 producers, 3,246 ha, 1,921 holdings (2012 data)
Producción Integrada en Andalucía	Regional	Public	Regional government	Olive groves (focus in this study), rice, cotton and beet)	47,530 producers (505,493 ha) (2012 data)

3.2 Comparative analysis of certification scheme requirements with the proposed greening measures

The selected certification schemes have been assessed in more depth to ascertain the more precise nature of the environmental requirements in relation to the management of the agricultural holding, based on the scheme literature. These requirements were then compared with the three greening measures originally proposed by the Commission, namely crop diversification (CD), maintenance of permanent grassland (PG) and Ecological Focus Areas (EFA).

First an assessment of the similarity of practices required has been carried out, followed by an assessment of potential impacts. The detailed requirements of each of the shortlisted schemes are set out in Annex 2.

3.2.1 Certification schemes and greening – similarity of practices

Table 6 sets out which schemes require practices that are the same as those that are required under the Commission's greening measures. This shows that there are no schemes that could be deemed to be precisely equivalent to the greening measures according to the practices required. The scheme that is the most similar is the new HVE scheme in France, under which one of the options (Option B) requires at least 10 per cent of the holding to be allocated for ecological purposes and at least 50 per cent of permanent pasture to be retained for at least five years. However, it does not include any crop diversification requirements. The level 2 CEE accredited scheme Agriculture Raisonnée also looks as if it contains many equivalent practices, but beyond the crop diversity and buffer strip requirements, the maintaining landscape element is only required for those farmers within Natura 2000 areas. For the remaining schemes, the most common requirements that are similar to the proposed greening measures are those relating to crop diversity (sometimes crop rotations); the introduction of buffer strips, often alongside water courses, to minimise leaching into water courses as well as the creation of wildflower strips on arable fields.

Of the certification schemes examined, only the HVE required a proportion of the farmed area to be allocated for environmental purposes – a key element of the EFA measure. However, many farmers in some regions of Europe already have a significant proportion of their land under a combination of the features proposed to make up an EFA, even if this is not a requirement of the certification scheme. Indeed some of these elements are required under the standards of Good Agricultural and Environmental Condition (GAEC) in place in Member States as part of cross compliance. For example, in France farmers must comply with crop diversity requirements²³, ensure that at least one per cent of the utilised agricultural area is made up of landscape features and put in place five metre wide buffer strips along water courses. This somewhat complicates an assessment of equivalence, as an EFA, as currently proposed, would not need necessarily to comprise multiple elements or features if the seven per cent area target could be met through just one, such as boundary features or buffer strips.

²³ From 2010 two options are possible: establishment of three different crops representing 5% or more of cultivated fields (3 % for the third crop), or two different crops, where one is either a temporary meadow or legume crops represent 10 % or more of the cultivated area. An alternative to these requirements is possible: plant a winter cover and/or management of crop residues

Table 6: Comparison of certification schemes with greening requirements - practices

	EFA: 7% of the eligible area to be made up of a combination of the following elements:													CD	PG
	Fallow	Uncultivated patches	Semi-natural patches	Afforested areas	Hedge	Ponds	Ditch	Terrace	Stone Walls	Trees (single, line, group)	Strip of seed bearing plants	Wildflower strip	Buffer strip		
France															
Agri Confiance	√														
CEE Level 2			√									√			
CEE Haute Valeur Environnementale (level 3)	10% of farmed area to be defined as managed as an agro-ecological area														√
Agriculture Raisonnée			√		√	√	√			√			√	~	
AREA					√								√		
Ireland															
Bord Bia - Quality Assurance Scheme - Beef															
Bord Bia - Horticulture Quality Assurance Scheme														~	
Irish Grain Assurance Scheme															
The Netherlands															
Graskeurmerk														~	
The Skylark initiative												√		~	
MPS Fruit and Vegetables															
Milieukeur													√		
Spain															
Naturane		√									√	√	√		
Producción Integrada (Galicia) (Horticulture)														~	
Producción Integrada de la Rioja															
Producción Integrada en Andalucía (Olive)					√					√					

Source: own compilation based on scheme literature

The sorts of requirements that make up the main content of the certification schemes examined are much more related to good agricultural practice and are the sorts of requirements that tend to be required by legislation (particularly the Nitrates Directive) and considered appropriate for inclusion within cross-compliance under the CAP. They include:

- Appropriate storage of all chemicals, manure, fuel, oil;
- Record keeping of application of fertilisers and manure;
- Keeping records of water use and ensuring irrigation machinery does not leak;

- Establishment of management plans for manure application;
- Establishment of biodiversity management plans;
- Completion of energy audits;
- Match fertiliser use to the nutrient needs of the crop;
- Limits on plant protection products (PPP) or fertiliser usage; and
- No application, or limits to application, of sewage sludge

3.2.2 Certification schemes and greening – similarity in relation to impacts

Assessing the equivalence of the potential impacts of the current certification schemes with those identified for the greening measures in Section 2 is fraught with difficulties and not possible with any degree of accuracy. This is due partly to the reasons stated above; any impacts will be heavily dependent upon the location of the management within the holding as well as factors such as climate, soil type and slope as well as existing management. In relation to EFAs there is a further question regarding how to assess the overall impact of the range of permutations of different elements that could make up the seven per cent area target. Furthermore there is a paucity of independent or published evaluations on the environmental impacts of certification schemes and their requirements. Where possible, therefore, our assessment has been based on broader evidence of the relationship between different management practices and their likely environmental outcomes. It has focussed on assessing where the impacts are likely to extend beyond those that would be anticipated through compliance with the SMRs and GAEC standards under cross-compliance. The assessment has been carried out against the broad environmental objectives set out in Section 2.

Our assessment shows that, of the certification schemes examined, for only one can it be argued that, in its current form, it is potentially equivalent in terms of overall impacts to the greening measures. This is the HVE scheme in France. However, this is due to the fact that the requirements of the scheme are very similar to those for the CAP greening measures, as shown above. There are no crop diversity requirements in the scheme and to present it as equivalent to the Commission's proposal, it would need to be determined that the impact of allocating a greater proportion (10 per cent) of the agricultural area for ecological purposes than that proposed for the EFA under the greening measures (seven per cent) made up for this absence.

For the majority of the certification schemes, the practices promoted which are not similar to the proposed CAP greening measures (see section above) tend to be those that are required through environmental legislation (Nitrates directive, Sustainable Use of Pesticides directive, Sewage sludge directive) or those that are required through GAEC standards under cross compliance. Since the greening measures are intended to go beyond cross compliance requirements and legal obligations, these practices are not assessed further in terms of impact. Nonetheless, it is worth noting that compliance with these standards will be checked on a regular basis for all members of certification schemes. In addition, there is a strong focus on farmers developing management plans (eg for nutrients, manure application, water use, biodiversity), although it is less clear whether it is the existence of the plan or compliance with the plans that is assessed.

In a very few cases, there are some management practices required, different to those under the greening measures but that could have similar environmental impacts. However it is very difficult to assess the relative impact of a single management practice, such as introducing grass cover on arable land, against the range of features and multiple practices that could be included in an EFA, for example.

These distinctive management practices, with potentially equivalent impacts are limited to the following:

- Optimise waste management to reduce carbon footprint (Agri confiance) – climate benefits
- In certain areas, keep autumn and winter cover or soil cover more generally (Agriculture Raisonnée, AREA, Integrated Production (La Rioja)) – benefits for soil erosion, soil fertility, soil organic matter, water quality, climate mitigation
- Introduce grass cover between all rows in perennial crops (AREA) - benefits for soil erosion, soil fertility, soil organic matter, water quality, climate mitigation

None of these has equivalent benefits for biodiversity.

3.3 Control mechanisms for certification schemes

If certain certification schemes were to be judged as equivalent to the greening measures, it is unclear what the implications would be for their accompanying control and audit regimes, which are not subject to CAP rules. However, whatever the final reporting rules, any controls would need to be extremely transparent to ensure that it was clear which parts of the agricultural area of the farm were being counted towards the greening requirements.

The current control and audit regimes differ considerably between schemes (see Table 7). For example although audits for some schemes are carried out annually, this is not the case everywhere, with the frequency of controls ranging from one year to five years in one case (Irish Grain Assurance Scheme). In addition the nature of the controls and the proportion of producers audited varies between schemes. In most cases, the penalties are straightforward – a producer is given a set amount of time (usually between three to six months) to rectify any issues found and if the issues are not addressed then membership of the certification scheme is suspended.

What this implies in relation to using certification schemes as a means of delivering the CAP greening measures, therefore is that either these control regimes would need to be amended to comply with the different approach under existing EU CAP rules or that the Pillar 1 inspection rules and checks would apply in addition to the scheme controls. These issues need to be explored further and would need to be such that farmers are not subjected to additional checks purely to make proposals for equivalence workable.

Table 7: Control requirements for selected certification schemes

Scheme	Control Requirements	Frequency
France		
Agri Confiance	No information found	
CEE Level 2	A technical audit is carried out by external auditors to approve entry to the scheme. Where corrective action is required, farmers have 3 months to address the issues or certification is denied.	Three years
CEE Haute Valeur Environnementale (level 3)	As for CEE Level 2, except that additional follow up checks are carried out to check compliance with scheme requirements	Three years
Agriculture Raisonnée	As for CEE Level 2	Three years
AREA	Three audits are carried out : 1. an internal audit by an accredited auditor carried out on 17% of the holding; 2. an external audit that is carried out by the certification body (as per the CNCE requirements) carried out on a sample of farms (10% of the first 500 participating farms, 5% of 1000 and 3% of farms beyond 1000). If a farm fails this external audit, they have between 3-6 months to address the issues, or have their certificate removed; 3. an annual review of the scheme as a whole carried out by AFNOR.	Annual
Ireland		
Bord Bia - Beef QAS	External audit - standard assessment process as follows: <ul style="list-style-type: none"> Critical: no evidence of compliance - presenting a serious hazard. The producer will receive '0' points. Category 1: compliance is evident but there is room for improvement. The producer will receive '1' point. Category 2: best practice has not been fully complied with but without consequence for overall quality. Any producer receiving 'critical' will not be certified or have certification suspended. Producers with category 1 must show evidence of complying with all requirements and score at least 75% against category 1 requirements and comply with all requirements. Producers with category 2 must score at least 70% against all category 2 requirements and comply with all requirements	18 months
Bord Bia - Horticulture QAS	As above	18 months
Irish Grain Assurance Scheme	Periodic audit. Where non-compliance is found, corrective actions are required by a stipulated ddate	Five years
The Netherlands		
Graskeurmerk	No information found	
The Skylark initiative	Annual self-assessment carried out by the farmer and subsequently reviewed by an accredited consultant	Annual
MPS Fruit and Vegetables	Annual audit and quarterly soil samples taken. All results are made publically available via the scheme website	Annual
Milieukeur	Re-applications required every year	Annual
Spain		
Naturane	No information found	
Producción Integrada (Galicia) (Horticulture)	No information found	
Producción Integrada de la Rioja	10% of certified producers are checked annually	Annual
Producción Integrada en Andalucía (Olive)	No information found	

Source: own compilation from publically available information

4 EQUIVALENCE OF AGRI-ENVIRONMENT MEASURES/ACTIONS

This section includes a brief assessment of the potential equivalence of agri-environment measures operating in each of the five Member States with the proposed greening measures.

There is a wide variety of agri-environment measures and actions included within the range of schemes operating in the EU-27, designed to address the environmental issues faced in specific areas. In many cases the actions are also targeted to particular parts of the country or region concerned, rather than being applicable across the whole territory, as is intended for the greening measures. This assessment has been based on an analysis of 'entry-level' agri-environment measures/actions²⁴ in operation in 2007-13. In each of the countries investigated, the structure of the agri-environment schemes available is quite different.

4.1 Comparative analysis of agri-environment measures with the proposed greening measures

The relevant agri-environment practices in place in the five Member States were examined in detail and compared with the three greening measures proposed by the Commission. First an assessment of the similarity of practices required has been carried out, followed by an assessment of potential impacts.

4.1.1 Agri-environment measures and greening – similarity of practices

In the five Member States examined for the purposes of this study, a number of different types of management practices exist which are similar to those proposed within the greening measures. These are set out in Table 8.

Table 8: Categories of agri-environment management actions with relevance to the greening measures

Type of management	Relevant greening measure
Maintain permanent pasture	PG
Riparian buffer strip	EFA
In field/field edge buffer strips or grass margins	EFA
Strips or patches for wildlife	EFA
In field fallow patch for wildlife	EFA
Fallow	EFA, CD
Management of landscape features	EFA
Crop rotation with legumes	CD
Crop rotations - general	CD

²⁴ Defined as: management requirements that sit relatively close to the reference level; do not require significant change to the system of farming and that are achievable by most of the target farmers; and are targeted at the majority of land and farms within a defined area, or of a specified type (from Keenleyside, C., Allen, B., Hart, K., Menadue, H., Stefanova, V., Prazan, J., Herzon, I., Clement, T., Povellato, A., Maciejczak, M. and Boatman, N. (2011) Delivering environmental benefits through entry level agri-environment schemes in the EU. Report Prepared for DG Environment, Project ENV.B.1/ETU/2010/0035. Institute for European Environmental Policy: London.

When examining the equivalence of measures, it should be noted that the requirements of individual actions under different agri-environment schemes are often quite detailed and specific. So, whereas uncropped buffer strips could count as part of an EFA under the greening proposals, the agri-environment buffer strip may also stipulate aspects such as its width as well as some form of environmental management on the strip. The equivalent practices found during this review are set out in Table 10 and some of the key findings for each Member State are set out below.

In France, agri-environment management actions were reviewed under four of the nine agri-environment measures currently in place (those related to organic farming, endangered breeds and Natura 2000 areas were excluded from the analysis). This highlighted only two management actions that were similar to those required under two of the greening measures – permanent grassland and crop diversification. There are no paid management requirements that relate to the EFA measure. Under the Prime herbagère agroenvironnementale (PHAE) scheme there is a requirement for ‘No tillage on permanent pasture’ and under the crop rotations scheme there is a requirement for ‘a minimum of three crops in five years, crops cannot be the same in two consecutive years on the same plot and the three main crops and uncultivated frozen land must be less than 90% of surface area’. It should be noted that under the PHAE, a condition of payment is that farmers must retain fixed landscape elements that are important for biodiversity (hedges, ponds, woods, water streams) on the equivalent of 20 per cent of the grassland area.

In Ireland, there are a range of management practices (five out of 21 available) under the Agri-Environment Option Scheme (AEOS) that are similar to those proposed under the greening measures. These relate primarily to the EFA and permanent grassland measures. These include measures such as the introduction of arable margins (3 metres wide), riparian margins (four widths possible – 3, 5.5, 10.5 or 30.5 metres), the establishment or maintenance of habitats (2.5 metre margins) and the maintenance of up to 10 hectares of species rich grassland or traditional hay meadows. The majority of these measures do not have any area requirement associated with them as required under the EFA. However, because of the way in which the scheme is designed, there may be cases where farmers do not have any of these options within their agreement. There are many other measures within the scheme which promote the active management of such features or habitats, but these are not included here as they do not go beyond what is expected under Pillar 1 greening.

In Poland the main agri-environment scheme management actions that are similar to the greening measures are those that require the extensive management of meadows and pastures, the introduction of buffer strips (of two and five metre widths and both riparian and in-field) as well as a requirement for crop rotation under the sustainable agriculture scheme. Also relevant is the requirement of most of the schemes that permanent grassland and landscape features on the holding must be maintained (see Table 9).

Table 9: Equivalent practices in the Poland agri-environment scheme

Scheme Name	Management Actions
P.1 Sustainable Agriculture	Plan and monitor plant selection and rotation (minimum 3 plant groups)
P.1 Sustainable Agriculture	Maintain permanent grasslands and features
P.3 Extensive Farming	Maintain permanent grasslands and features
P.9 Buffer Strips	Maintain 2 m buffer zones: <ul style="list-style-type: none"> - Maintain permanent grasslands and landscape features not used for agricultural purposes - Mowing once a year or every two years by 30 September latest - Remove biomass within 2 weeks of mowing - For hedges - maintain existing trees and shrubs - No use of fertilisers or plant protection products - No sewage or sewage sludge allowed
P.9 Buffer Strips	Maintain 5 m buffer zones - Conditions as for 2m buffer zones
P.9 Buffer Strips	Maintain 2 m of infield field margins - Conditions as for 2m buffer zones
P.9 Buffer Strips	Maintain 5 m of infield field margins - Conditions as for 2m buffer zones

Source: Own compilation from scheme literature and rural development programmes

In **the Netherlands**, the agri-environment scheme, ‘Agrarisch Natuurbeheer’ or ‘Agriculture and Nature Conservation’ contains a series of 11 sub-schemes which farmers can apply for in five priority areas²⁵. There are a range of management actions that would fulfil the greening requirements, for example maintenance of a range of landscape features (including ponds; wooded banks; trees; copses and bushes; hedges; avenues of trees; single trees; and coppiced woodland) as well as buffer strips alongside water courses and along field edges and fallow land. However, the buffer strip and fallow options tend to have additional environmental requirements associated with them, such as sowing field margins with a wildflower mix. A core focus of the Dutch agri-environment scheme is to protect meadow bird species, particularly ground nesting birds. Although the aim of the scheme is not to maintain permanent grassland *per se*, in effect this is the outcome achieved, but nonetheless this has not been included as an equivalent practice in the table below.

²⁵ These five areas are: the National Ecological Network (NEN), Natura 2000 zones, national landscape areas, meadows identified as important for birds, and areas identified as important for geese

Table 10: Equivalence of agri-environment practices with the greening measures

	EFA - 7% of the eligible area to be made up of a combination of the following elements:													CD	PG		
	Fallow	Uncultivated patches	Semi-natural patches	Afforested areas	Hedge	Ponds	Ditch	Terrace	Stone Walls	Trees (single, line, group)	Strip of seed bearing plants	Wildflower strip	Buffer strip				
France																	
PHAE2 – Extensive grazing systems																√	
Diversification of arable crop rotations															~		
Ireland																	
AEOS - halting biodiversity decline	√											√	√			~	
AEOS - maintaining water quality	√											√	√			~	
AEOS - combating climate change	√											√	√			~	
The Netherlands																	
Meadow bird options																	
Arable areas and field edges	√											√	√				
Landscape options					√	√	√		√	√							
Poland																	
Sustainable Agriculture					Maintain all landscape features											~	√
Extensive Permanent Grassland					Maintain all landscape features												√
Buffer Strips					Maintain all landscape features								√				√
Spain																	
Basque Country	√												√		~	√	
Castilla y Leon		√	√		√				√						~		
Madrid	√				√				√				√				
Andalucia													√		~		
Aragón													√		~		
Asturias		√															
Castilla la Mancha	√	√	√		√								√			√	
Catalunya	√				√			√	√								
La Rioja													√				
Murcia													√		~		
Navarra		√			√			√	√	√			√		~		
Valencia					√			√	√				√				

Source: Own compilation based on scheme literature and Rural Development Programmes

Key: √ - equivalent; ~ - similar requirements

Of the 17 regional agri-environment schemes operating in **Spain**, analysis for this study showed that 12 included one or more management actions that were similar to those required under the greening measures. In relation to the crop diversification measure, a number of regions include within their schemes an option to devote a proportion of their arable area to protein or leguminous crops (15 per cent in Castilla y Leon; 10 per cent in Andalucía; five per cent in Navarra) or for crops good for birds (eg two per cent of alfalfa and sunflowers or four per cent of alfalfa and stubbles in Aragón). Most of the agri-environment schemes require some form of buffer strip to be put in place, either through leaving an uncropped strip around a crop or putting in place a buffer alongside a water course.

In relation to the elements that would be permitted within an EFA, in the Basque country the scheme requires 8.5 per cent of the arable area to be left fallow, a higher proportion than the seven per cent EFA requirement. The schemes in Castilla y Leon and Castilla la Mancha, under the measures for extensive dryland agro-ecosystems, require farmers to maintain at least three per cent of the farmed area within the agri-environment contract as farm boundaries or natural vegetation. Many of the schemes also require landscape features to be retained (hedges, stonewalls and terraces are most frequently cited).

4.1.2 Agri-environment measures and greening – similarity in relation to impacts

Assessing the equivalence of the potential impacts of the agri-environment actions with those identified for the greening measures in Section 2 is problematic and not possible with any degree of accuracy for the same reasons as set out for certification schemes in Section 3. For agri-environment schemes, however, formal scheme evaluations are much more widespread than for certification schemes due to the monitoring and evaluation requirements under CAP rules. Nonetheless, empirical evidence on the actual impacts of individual agri-environment actions on specific environmental issues in different geographical situations is limited, particularly for some of the countries covered within the study. Our analysis therefore has been based on broader evidence of the relationship between different management practices and their likely environmental outcomes and carried out against the broad environmental objectives set out in Section 2.

Our assessment shows that, there are certainly a range of agri-environment actions that are likely to have equivalent impacts to the Commission's proposed greening measures, when similar requirements are assessed (see previous section), but that these are quite disparate between schemes and Member States. For example, in relation to crop diversification many of the schemes in Spain, one in Poland and one in France promote some form of crop diversity or crop rotation on farms. Although the specific requirements are different to those proposed by the Commission, it is difficult to assess whether or not these would deliver greater or lesser environmental benefits across the suite of environmental objectives proposed for the greening measures under this study (Table 2). Only in Spain were measures found that required farmers to allocate a proportion of their land to environmental purposes, either by leaving land fallow or deliberately setting the land aside for environmental management. The area requirement is an essential element of the EFA measure. Assessing equivalence of impact with the EFA measure therefore requires information of not just the types of measures that are required under agri-environment

schemes but the scale at which they must be applied. This information is largely absent from the schemes that have been investigated here.

Given the large range of agri-environment actions that comprise agri-environment schemes in different countries, there are a number of management practices that farmers can opt for that are different to those under the greening measures but that could have similar environmental impacts. These are set out in Table 11. Many schemes specify that particular measures have improving soil or water quality or biodiversity as their primary objective, but the degree to which the environmental outcomes of these measures would demonstrate 'equivalent' environmental impact to that which might be achieved through the greening measures will depend on the full range of factors identified earlier – location, soil type, slope, climate etc. In addition, it is very difficult to assess the relative impact of a single management practice, such as introducing grass cover on arable land, against the combined impact of the range of features and multiple practices that could be included in an EFA, for example.

Table 11: Different management practices with potentially equivalent impacts

Management	Potential equivalent impact	Country in which measure identified
Maintain up to 10 ha as species rich grassland or traditional hay meadows	Biodiversity, water flow, water quality, erosion prevention, soil fertility, soil organic matter, climate change mitigation, landscape	Ireland
Sown green cover crop over winter	Erosion prevention, soil organic matter, soil fertility, water quality, climate change mitigation,	Ireland, Poland
Soil cover on slopes to avoid erosion	Erosion prevention, soil organic matter, water quality, climate change mitigation	Spain
Overwinter stubbles	Erosion prevention, soil organic matter, soil fertility, water quality, climate change mitigation,	Poland
Additional landscape features to those mentioned in the proposals	Landscape; biodiversity, Erosion prevention, water quality	Netherlands, Spain
Leaving areas of crops unharvested as sacrificial crops for birds	Biodiversity	Spain

5 OVERALL CONCLUSIONS AND RECOMMENDATIONS

This fairly broad brush assessment of the equivalence between the Commission's proposed greening measures and the current certification schemes and agri-environment measures in five Member States has revealed some interesting findings. However above all it has demonstrated how difficult it is to assess equivalence in a robust and meaningful way in a limited time period. It also highlights a number of unanswered questions that need further consideration if alternative means for farmers to become compliant with the three Pillar 1 greening measures are to be both workable and environmentally equivalent in practice.

Judging equivalence of practices is much simpler for the permanent grassland and crop diversification measures than for EFAs. This is because these two measures, as proposed by the Commission, have fairly straightforward requirements that are the same wherever they are applied. The EFA measure, however, has two distinct elements to it – an area target in the form of the proportion of the eligible area that must form an EFA and a menu of different features or elements which can be used to make up the area. For an EFA, therefore, it is not sufficient simply to ascertain that certain elements of the EFA menu are included within a certification or agri-environment scheme, but it is also important to know the proportion of the farm that these cover. This is complicated further by the fact that, even if the area requirement is not stipulated by the scheme in question, in practice some farms will have the requisite features on the required scale.

Assessing equivalence of impact is even more complex. The nature of the environmental impacts will differ depending on a whole range of bio-geographical, climatic factors as well as variables such as the location of the practice within the holding, previous management as well as the existing condition of landscape features. To evaluate equivalence of impact therefore requires the assessment to take account of these factors at the relevant spatial scale. However, when it comes to the EFA, the assessment of impact is not so much hindered by the absence of evidence on agri-environmental interactions, but rather by methodological issues surrounding the baseline against which one is measuring equivalence. On any given farm the EFA could be made up of a whole range of different permutations of different elements from the proposed menu, so the question arises of how to measure the potential overall environmental impact of an EFA given that this will differ according to which elements of the menu are chosen. This makes it problematic to assess which other practices could be permitted to make up the EFA on the basis of having an 'equivalent' impact.

Accepting these methodological issues, the very generic assessment carried out here indicates that, when considering the equivalence of practices, there is a very low level of equivalence for current certification schemes. In the four Member States where schemes were reviewed, the HVE scheme in France was the only scheme to have an area requirement associated with it, similar to the EFA and so could be considered almost equivalent, albeit it has no crop diversification requirements. A few similar requirements exist in some schemes, mainly in relation to crop diversification and buffer strips. However, the evidence would suggest that in the majority of cases certification schemes could not qualify as being equivalent to the greening measures.

Although there are a greater number of equivalent management practices supported under agri-environment schemes, these do not cover the full range of requirements for the three greening measures. In the case of agri-environment schemes, the equivalent practices that occur most frequently relate to the maintenance of landscape features and the introduction of buffer strips (EFA), the introduction of crop rotations (crop diversification) and the maintenance of permanent grassland (permanent grassland). In most schemes there is no area obligation, as required under the EFA, although of course this may be exceeded in practice on many farms signed up to current schemes.

It is far more difficult to assess the equivalence of impacts for the reasons set out in the report. For current certification schemes, given the absence of many requirements above the reference level, the likelihood of their being deemed equivalent on this measure seems low. For the agri-environment schemes, there is a far greater range of management practices that have the potential to have similar impacts to those identified for the greening measures. However, it is difficult to be precise about this and the extent of take-up on the specific farm will be critical and presumably would need to be recorded through an appropriate system.

These difficulties with assessing equivalence have implications not only for designing a robust process of formally assessing which certification or agri-environment measures can be deemed equivalent, but also for inspection regimes, and in the case of agri-environment schemes also for payment rates.

To be robust and to avoid any attempt to use equivalence as a means of watering down the greening requirement, the assessment of which schemes and practices a farmer can count towards his/her greening requirements needs to be carried out in the same way in all parts of the EU. Such an assessment would need to take account of the nature of the impacts in the particular region in question – it could not be done at a generic EU-27 level. The assessment would need to be carried out by a neutral actor, which suggests either the Commission or an independent panel of experts, both of which options have significant costs associated with them. The timescales involved would be a factor as well given the timetable for the revised CAP.

High levels of transparency will be required to provide assurance both that the approaches adopted are indeed equivalent and that there is a reasonable level playing field within Europe. While some Member States may pursue equivalent measures with the genuine intention of improving environmental outcomes, there will remain suspicions that others may be more interested in reducing the obligations on their farmers, whilst being less meticulous about the outcomes. Transparent and rigorous assessment processes, with the publication of relevant data and monitoring results would be the first requirement of framework to address such concerns.

Inspection regimes would also need to be transparent so that it was clear which parts of the farmed area were being counted towards the greening requirements. For certification schemes, it is unclear what this would mean in practice. Presumably other inspection regimes would need to be subject to relevant EU rules or the Pillar 1 inspection rules and checks would still apply. These issues need to be explored further and would need to be

such that farmers are not subjected to additional checks purely to make proposals for equivalence workable.

For agri-environment schemes there is the added complication that, in order to avoid double funding, farmers would need to be explicit about which elements of management under their agri-environment agreement is being used to fulfil the greening requirements. Presumably the payment rates would need to be adjusted on these elements to reflect the fact that the farmer is now receiving payment for that management under the rubric of Pillar 1, rather than from the agri-environment scheme. Such payment rate adjustments would need to take account of those cases where only part of the agri-environment requirement counts towards the Pillar 1 greening. The rules surrounding these issues remain very unclear and imply an increase in the administrative complexity of the operation of agri-environment schemes, rather than a simplification as was originally proposed. Extremely clear mapping of where the greening measures are taking place on the farm also would be required.

In sum, this shows that while the concept of equivalence may sound like a reasonable and convenient option in theory, the practical issues with its application are likely to lead to far greater administrative complexity and cost, both for Member States and within the Commission and with arguably little additional environmental benefit.

Some Member States are starting to consider the option of developing new certification schemes as the vehicle through which to deliver greening as proposed by the Council in their negotiating mandate. This study shows how much more demanding these would need to be than those currently in place if they are to deliver the same environmental benefits as those of the greening measures proposed by the Commission.

As the CAP reform negotiations enter their final stages, the delegated acts start to be drafted in detail and Member States start to consider the implementation of the greening measures, it will be important to think through the issues that equivalence raises and find solutions that simplify rather than over-complicate the future delivery of environmental outcomes from agriculture.

ANNEX 1 – DESCRIPTION OF SHORTLIST OF CERTIFICATION SCHEMES INVESTIGATED

France

Agri confiance first targeted food processing industries when it was established in 1992. Since 1999, the scheme has incorporated agri-environmental concerns (Agri Confiance Qualité Environnement NF V01-007). Currently, the scheme encompasses 14 agricultural products (oilseed crops, fruit and vegetables, cider apples, milk, poultry, waterfowl, rabbit, beef, pork, fish, wine, linseed and flowers) with over 50 certificates for 200 products. The scheme extends across all regions in France with 10 per cent of holdings (30,000) participating. Participants range from small holdings to large ones, but all within cooperatives. The greatest uptake is in the north west and south west with just over one third in the former and over a quarter in the latter; the remaining uptake is more or less evenly spread across the country.²⁶

Control: No information found

The **Certification Environnementale des Exploitations (CEE)** is a national three-tiered framework for agri-environmental certification schemes established in 2011/12. It is overseen by the **CNCE** (Commission Nationale de Certification Environnementale), set up in 2011 as part of the French environment initiative, 'le Grenelle de l'environnement'. The Commission is made up of State representatives, agricultural unions and environment, consumer and food industry stakeholders who monitor certification schemes according to a three-tiered framework²⁷. The scheme environmental baseline is determined in accordance with legal requirements and revolves around four key environmental themes: biodiversity, plant health management, fertiliser management and water management²⁸.

The three-tiered framework²⁹ is summarised here:

- *Level 1:* This requires a basic environmental commitment in keeping with GAEC.
- *Level 2*³⁰: This requires compliance with 16 requirements:

1. Record environmentally relevant areas, especially sensitive areas for water quality and N2K
2. Identify agro-ecological areas, including those under CAP requirements. Prohibited fertiliser and PPP application. No storage of these products or waste
3. Select and maintain vegetated species rich strips
4. Wherever relevant, maintain areas of N2K
5. Monitor crop health and receive advice for plant protection
6. Participate in collective plant protection actions
7. Store fertilisers and manure appropriately to avoid contamination, especially where close to water bodies

²⁶ <http://www.agriconfiance.coop/environnement-s-engager-vraiment.php>

²⁷ <http://agriculture.gouv.fr/commission-nationale-certification-environnementale>

²⁸ <http://agriculture.gouv.fr/Grenelle-de-l-Environnement-la>

²⁹ http://agriculture.gouv.fr/Certification-environnementale-des_16358

³⁰ See Annex (p69): http://agriculture.gouv.fr/IMG/pdf/doc1-plan_controle_niveau2V1_CNCE_25_10_2011.pdf

8. Record fertiliser application
9. Record manure application
10. Establish a management plan for manure application every year - includes, all organic inputs, soil analysis, restrictions to application (eg not on frozen and waterlogged soils)
11. Record fertiliser by crop
12. Record input against original plan
13. Monitor irrigation and respect limits
14. Evaluate and record water used
15. Monitor equipment used for irrigation and address leaks
16. Participate in collective actions to protect water resources where they take place

Control: Technical evaluations must be carried out on entry by an accredited technical expert/auditor. Subsequent technical evaluations must be carried out every three years at least 10 months before the time of scheme renewal. Where the technical expert has recommended corrective actions, the farmer has three months to address them. If a farmer fails to meet the scheme standards or fails to adopt appropriate remedial measures, certification is denied.

- *Level 3, 'Haute Valeur Environnementale':* This requires the greatest commitment from farmers and to date there are only three with the HVE certificate, all of which are wine growers³¹. There are two options within this level, option A and B:
 - Option A³²: The applicant is rated against four environmental indicators (Biodiversity; Pest management; Fertiliser Management; and water management) and must score at least 10 points.
 - Option B³³: At least 10 per cent of the holding must be allocated for ecological purposes or at least 50 per cent of permanent pasture must have been retained for at least five years. The cost of all inputs must be equal to or less than 30 per cent of the holding's turnover.

Control: Participants are subject to three assessments throughout the three years of certification. First, they must undergo an initial technical assessment; second, they are subject to follow-up assessments to check that they are meeting requirements; and third, to renew their commitment to the certification scheme. The latter must be carried out at least 10 months before the time of scheme renewal.

Agriculture raisonnée was introduced and managed by FARRE (Forum pour une agriculture raisonnée et respectueuse de l'environnement), a network that was set up to promote integrated farming with 1,000 members that was established in 1993³⁴. Via the scheme, the network aims to develop a financially competitive agriculture that cares for the environment

³¹ <http://www.plusbellelavignebio.com.preview12.oxito.com/michel-loriot-eric-rodez-et-jean-pierre-vazart-vignerons-champenois-certifies-hve/>

³² http://agriculture.gouv.fr/IMG/pdf/doc2-plan_controle_niveau3AV1_CNCE_25_10_2011.pdf

³³ http://agriculture.gouv.fr/IMG/pdf/doc4-plan_controle_niveau3BV1_CNCE_25_10_2011.pdf

³⁴ <http://www.farre.org/index.php?id=47>

and meets consumer demands³⁵. It covers multiple products including cereal crops, viticulture, fruit and vegetables, apiculture, poultry, pig, horse, goat, rabbit, beef and milk³⁶. Since 2001, the scheme has been recognised at a national level in the French 'Code Rural' and at an EU level by the European Initiative for Sustainable Development in Agriculture. The scheme environmental baseline is determined in accordance with legal requirements and revolves around four key environmental themes: biodiversity, plant health management, fertiliser management and water management. Since 2012 it is recognised by the CNCE (Commission Nationale de Certification Environnementale) as a scheme with environmental value, reaching level 2 of its three-tier framework^{37,38}.

The scheme is regulated by the CNAR (Commission nationale de l'agriculture raisonnée et de la qualification des exploitations).

Control: As this scheme is recognised by the CNCE, participants are subject to technical evaluations carried out on entry by an accredited technical expert/auditor. Subsequent technical evaluations must be carried out every three years at least 10 months before the time of scheme renewal. Where the technical expert has recommended corrective actions, the farmer has three months to address them. If a farmer fails to meet the scheme standards or fails to adopt appropriate remedial measures, certification is denied. A list of accredited technical experts for Agriculture raisonnée is available at: <http://www.farre.org/index.php?id=55>.

AREA (Agriculture respectueuse de l'environnement en Aquitaine) was established in 2002 to encourage farmers in Aquitaine to reduce their impact on the environment. By 2011 uptake exceeded 5,500 participants. The scheme offers guidance to farmers on fertiliser management, plant health treatments, biodiversity and precision irrigation. It covers multiple products including viticulture, fruit and vegetables, cereal crops, tobacco, poultry, pig, horse, rabbit, beef and milk³⁹. Since 2012 it is recognised by the CNCE as a scheme with environmental value, reaching level 2 of its three-tier framework⁴⁰.

Control: There are three audits:

- 1) An internal audit by an accredited auditor that is carried out on 17% of the holding;
- 2) An external audit that is carried out by the certification body (as per the CNCE requirements) which is carried out on a sample of farms (10% of the first 500 participating farms, 5% of 1000 and 3% of farms beyond 1000). If a farm fails this external audit, they have between 3-6 months to address the issues, failure to do so will result in having their certificate removed;
- 3) An annual review of the scheme as a whole which is carried out by AFNOR (Association française de normalisation).

³⁵ http://www.farre.org/fileadmin/medias/PDF/success_stories.pdf

³⁶ http://www.farre.org/fileadmin/medias/pdf/baro_16_farre.pdf

³⁷ <http://agriculture.gouv.fr/Certification-Environnementale-des,16228>

³⁸ <http://www.farre.org/index.php?id=169>

³⁹ <http://agri-agro.aquitaine.fr/agriculture-durable-et-solidaire/programme-area-produire-en-respectant-lenvironnement/>

⁴⁰ <http://agriculture.gouv.fr/Certification-Environnementale-des,16228>

A list of accredited technical experts for AREA is available at: <http://les-aides.aquitaine.fr/IMG/pdf/Plaqueette AREA Certification 2011-3.pdf> (p8)

Ireland

The Bord Bia Quality Assurance Schemes were established in 2004 and are accredited under EN45011. They target producers and processors and cover the complete food chain offering guidance for production, packing and processing. To be accepted into the scheme, the producer/processor must undergo an audit, carried out by an independent body. If the producer/processor is compliant with the standards, he/she is awarded the certification label. Bord Bia have developed quality assurance schemes for bacon, beef, chicken, duck, eggs, lamb, pork, turkey and fruit and vegetables with currently over 40,000 farmers certified⁴¹.

Control: Producers are subject to external audit. The maximum time period between audits is 18 months. The following marking system is in place:

- **Critical:** This is where there is no evidence of compliance presenting a serious hazard. The producer will receive '0' points.
- **Category 1:** Category 1 non-compliance is compliance is evident but there is area for improvement. The producer will receive '1' point.
- **Category 2:** Category 2 non-compliance is where best practice has not been fully complied with but without consequence for the overall quality.

Any producer receiving 'critical' will not be certified or have certification suspended. Producers with category 1 must show evidence of complying with all requirements and score at least 75% against category 1 requirements and comply with all requirements. Producers with category 2 must score at least 70% against all category 2 requirements and comply with all requirements.

If a producer is deemed non compliant, any existing certification will be suspended or withdrawn.

The **Irish Grain Assurance Scheme (IGAS)**⁴² was established in 2004 by the Cereals Association of Ireland and is managed by CropSure Ltd to guarantee consumers that cereals and other combinable crops have been properly handled, stored and transported. Its main aim is to offer traceability on the grain covered by the scheme and the key environmental benefit it delivers is reduced inputs. There are currently 51 members.

Control: Producers undergo an audit. This audit is carried out randomly on a 5 year rotation by CropSure personnel. If they fail any element of the audit, a reference number is provided with a date for corrective work to have been carried out. The member must submit evidence of corrective action by the date indicated. Failure to do this within the time

⁴¹ <http://www.bordbia.ie/aboutfood/quality/Pages/default.aspx>

⁴² <http://www.irishgrainassurance.ie/index.php/home>

provided will result in suspension of IGAS approval. The audit checks that the member has current records showing details of grain type, area sown, and dates of management, that pesticide and fertiliser applications are within application rates and timings, that equipment is well maintained and that the storage area is suitable⁴³.

The Netherlands

Graskeurmerk – the Grassland Foundation certification scheme – was established in 1991. It is a private initiative that is run by an independent chairman with an elected board of commissioners. The scheme applies to the livestock sector (dairy, beef, poultry, pig, egg and feed) and potato growers. It promotes grass fed livestock and includes standards limiting chemical inputs.

Control: no information found.

The Skylark Foundation supports arable farmers in the protection of natural resources (soil, water and air). It was established in 2006 and now has twenty regional groups in three different regions across the Netherlands with more than 200 participating farmers. Each regional group has around 12 farmers within it and is supported by one consultant. The Foundation also offers a supply chain platform for farmers to engage with food processors. Several well-known brands participate in this platform, including Unilever, Coca-cola, McCain, Heineken, among others. The Foundation is developing a certification scheme which is expected to be complete in Spring 2013 (van Vilet *et al*, 2012).

Control: Participating farmers are obliged to conduct an annual self-assessment which they present to their respective regional groups. This is then reviewed by the accredited consultant.

The **MPS Fruit and Vegetables** certification scheme was introduced in 2010. It is the first scheme that applies to vegetables and fruit in the Netherlands. The scheme applies to edible agricultural product from the crop production sector (vegetables, fruit, arable products, fresh herbs and spices). The scheme requires compliance with criteria related to sustainability (use of pesticides, fertilisers, waste, energy and water), the reliability of the registration of pesticides, hygiene and transparency on the use of pesticides on crops⁴⁴. Two further certificates beyond the MPS F&V basic certificate are offered: Vita Certa, for producers who have scored the highest (A grade) against all the criteria; and the Natural Protected certificate which requires an A-score against all the criteria plus prohibits the use of pesticides that are banned under organic schemes (van Vilet *et al*, 2012).

Control: Compliance is monitored via a yearly audit and four annual analysis samples. There is no information available on the penalties of non-compliance; however, all information about compliance is published on the website and made publically available. This could

⁴³ <http://www.irishgrainassurance.ie/docs/Production%20Assessment%20Check-list%202013.pdf>

⁴⁴ <http://www.mps-food.com/en-us/home.aspx>

therefore be regarded as ‘naming and shaming’ as a method for enforcing compliance: see this brochure for how it is carried out in practice⁴⁵.

Milieukeur was established in 1992 with government support. The scheme aims to moderate the environmental impact of agricultural production in terms of raw materials used, energy use, water use, pollution and waste. It also ensures a minimum compliance with standards for working and animal welfare. It covers all sectors and all stages of the production chain and offers certificates for 43 different types of products, covering a total of 73 products with 737 members (includes processors as well as producers)⁴⁶.

There is a one off joining fee that varies from €100 to €1,000 according to the produce and an annual charge that also varies according to the produce (from €5/ha to 60 €/ha or a one off annual charge of €500 pa)⁴⁷.

Control: An audit is carried out every two years by a board of experts in a public hearing. Participants must reapply for certification every year⁴⁸: although no information was found on penalties for failure to comply, this is presumably not relevant as the certificate is awarded on an annual basis.

Spain

Naturane is a system of quality to guarantee that Anecoop products are high in quality and environmentally friendly produced. Anecoop was founded in 1975 and spans across 11 regions in Spain. It is recognised as the leading fruit and vegetable producer in the Mediterranean. It exports to 60 different countries and has 76 cooperative members with thousands of farmers⁴⁹.

Naturane is the first system to be approved by the Global Partnership for Good Agricultural Practice (GLOBAL GAP)⁵⁰

Control: Although no information on audits/penalties/compliance was found, the Corporate Social Responsibility reports offer an indication of mitigated environmental impact with progress reported against a suite of environmental indicators. These indicators monitor from 2009-2010-2011-2012 and report on water consumption, paper consumption, energy management, waste management.

Integrated production - Producción integrada - in Galicia. Integrated production is considered to be a medium between organic and conventional agriculture whereby farmers

⁴⁵ http://www.mps-food.com/Portals/1/MPS_fruit_vegetable_folder_ENG-2.pdf

⁴⁶ <http://www.smk.nl/nl/s357/SMK/Programma-s/Milieukeur/c324-Milieukeur>

⁴⁷ <http://www.smk.nl/images/files/Tarievenblad%20Milieukeur%20en%20Barometers%202013-3.pdf>

⁴⁸ <http://www.smk.nl/nl/s357/SMK/Programma-s/Milieukeur/c325-Certificeren>

⁴⁹ <http://www.anecoop.com/en>

⁵⁰ **GLOBALGAP**, the *Global Partnership for Good Agricultural Practice*, is an international private sector body that sets voluntary standards for the certification of agricultural products around the globe. The Globalgap standard is primarily designed to reassure consumers about how food is produced on the farm by minimising the detrimental environmental impacts of farming operations, reducing the use of chemicals and ensuring a responsible approach to worker health and safety.’

must use a controlled and justified amount of inputs. It is a well-recognised system of farming in Spain by both producers and consumers. It was first regulated in Galicia in 2004. There are four sets of regulation, for horticulture, kiwi, potatoes and vines⁵¹; however, the principal form of integrated production in Galicia is carried out on vines. Since 2002 there is also a national framework for integrated production (1201/2002)⁵². In 2007, there were 138 integrated producers recorded in Galicia covering 534 ha. Of note, this was the smallest area of integrated production in Spain at the time of recording.

Control: No information found.

Integrated production - Producción integrada - in La Rioja. Integrated production is considered to be a medium between organic and conventional agriculture whereby farmers must use a controlled and justified amount of inputs. It was first regulated in La Rioja in 2001. The scheme is regulated by one overarching regulation (53/2001) but there are also specific regulations for certain products (mushrooms, fruits, artichokes, potatoes, sugar beet, green beans etc)⁵³. Since 2002 there is also a national framework for integrated production (1201/2002)⁵⁴. It is a well-recognised system of farming in Spain by both producers and consumers. In 2012, approximately 500 producers were certified as integrated producers in La Rioja, covering 3,246 ha and accounting for 1,921 holdings (see website for breakdown by product)⁵⁵.

Control: 100% of participants are subject to a start-up inspection at which the entire holding is reviewed and a technical management plan drawn up. Thereafter, 10% of producers are subject to annual inspections which include a residue analysis of the holding just before harvest and 20% of processors – in both cases, records are checked⁵⁶.

Integrated production - Producción integrada - in Andalucía. Integrated production is considered to be a medium between organic and conventional agriculture whereby farmers must use a controlled and justified amount of inputs. It was first regulated in Andalucía in 1995⁵⁷. Since 2002 there is also a national framework for integrated production (1201/2002)⁵⁸. It is a well-recognised system of farming by both producers and consumers in Spain and especially in Andalucía which has grown in the region from 81,322 ha in 2003 to 505,493 ha by 2012⁵⁹.

⁵¹

http://www.medioruralemar.xunta.es/es/areas/agricultura/huerto/produccion_integrada/reglamentos_tecnicos/

⁵² <http://www.boe.es/buscar/doc.php?id=BOE-A-2002-23340>

⁵³ <http://www.larioja.org/npRioja/default/defaultpage.jsp?idtab=438926>

⁵⁴ <http://www.boe.es/buscar/doc.php?id=BOE-A-2002-23340>

⁵⁵ <http://www.larioja.org/npRioja/default/defaultpage.jsp?idtab=438929>

⁵⁶ <http://www.larioja.org/npRioja/default/defaultpage.jsp?idtab=438927>

⁵⁷ <https://ws128.juntadeandalucia.es/agriculturaypesca/fit/normativas/listado.seccion.do?seccion=1>

⁵⁸ <http://www.boe.es/buscar/doc.php?id=BOE-A-2002-23340>

⁵⁹

http://www.juntadeandalucia.es/agriculturaypesca/portal/export/sites/default/comun/galerias/galeriaDescargas/cap/agricultura-ganaderia/agricultura/Sanidad-Vegetal/Produccion-Integrada-/Material-Divulgativo/Operadores_y_productores_PI_por_cultivo_2012.pdf

Of note, since 2008 integrated production in Andalucia is now approved by Anecoop and their certification, Naturane (Junta de Andalucia – IP in Andalucia in project folder).

Control: Compliance is regulated by three independent bodies. These are: a technical expert; an accredited certifier (ENAC); and the local government. The technical expert is contracted by the producer to assist in the application of the IP legislation in terms of best management practices and helps to draw up a management plan. The accredited certifier is a private body that carries out an audit to ensure that the regulations are being complied with. The local government ensures that training and advice are available to producers and technical experts and oversees the audits carried out by the accredited certifiers (Junta de Andalucia).

ANNEX 2 – DETAILED REQUIREMENTS OF CERTIFICATION SCHEMES

Scheme Requirements	Environmental objective	Relevant greening measure
Agriconfiance		
Soil management: soil aeration, relocation of predators, use resistant crop varieties	Soil management	
Integrated pest management to observe and trap pests	Nutrient management	
Animal welfare: homeopathic treatment of animals	n/a	
Species rich fallow areas for biodiversity	Biodiversity	EFA
Optimise waste management to reduce carbon footprint	Energy	
Carry out energy audits	Energy	
Certification environnementale des exploitations (CEE) – Level 2		
1. Record environmentally relevant areas, especially sensitive areas for water quality and N2K		
2. Identify agro-ecological areas, including those under CAP requirements. Prohibited fertiliser and PPP application. No storage of these products or waste	Biodiversity	EFA
3. Select and maintain vegetated species rich strips	Biodiversity	EFA
4. Wherever relevant, maintain areas of N2K	Biodiversity	EFA
5. Monitor crop health and receive advice for plant protection	Nutrient management	
6. Participate in collective plant protection actions	Nutrient management	
7. Store fertilisers and manure appropriately to avoid contamination, especially where close to water bodies	Fertiliser management	
8. Record fertiliser application	Fertiliser management	
9. Record manure application	Fertiliser management	
10. Establish a management plan for manure application every year - includes, all organic inputs, soil analysis, restrictions to application (eg not on frozen and waterlogged soils)	Fertiliser management	
11. Record fertiliser by crop	Fertiliser management	
12. Record input against original plan	Fertiliser management	
13. Monitor irrigation and respect limits	Water management	
14. Evaluate and record water used	Water management	
15. Monitor equipment used for irrigation and address leaks	Water management	
16. Participate in collective actions to protect water resources where they take place	Water management	
Haute Valeur Environnementale (HVE) – CEE Level 3		
Option A: 10 points to be achieved against the following indicators:		
- Fertiliser management: nitrogen balance between inputs and outputs – even balance = 10 points	Water, Soils	
- Crop protection strategy: French treatment frequency index (TFI) relating to the number of approved doses applied to a plot during a cropping season. 10 points = half the base level (specific to crop and region)	Water, Soils	
- Water use: composite indicators made up of a range of different	Water management	

means of minimising water use		
- Biodiversity: percentage area devoted to agro-ecological infrastructure (AEI), using weighted areas to take account of their respective values for biodiversity – 2 points awarded for each % above the base level (specified as GAEC standards)	Biodiversity	EFA
Option B: global approach with 2 indicators		
i) The proportion of input costs in total turnover (excluding public subsidies) must be lower than 30%	Water, Soils	
ii) More than 10% of UAA must be devoted to agro-ecological infrastructures	Biodiversity	EFA
iii) Permanent grassland on the farm must be kept as such for five years.	Biodiversity	PG
L'agriculture raisonnée		
Receive training and advice for technical management: Subscribe to technical updates; Draw up a holding plan with locations of buildings and plots; Know minimum requirements (legal requirement); Training at least once every 5 years		
Record land management with in 8 days of action. Keep records for 5 years		
Health and safety for workers: maintain a safe working environment	n/a	
Soil management: carry out soil analysis every 6 years	Soil management	
Soil management: min 5 metre buffer strips along riparian edges (no inputs in these areas), farmers growing perennial crops can be exempt but small farmers are not (legal requirement)	Soil management	EFA
Soil management: no burning (legal requirement)	Soil management	
Soil management: ensure crop diversity (legal requirement R615-12 code rural)	Soil management	CD
Fertiliser management: Manage manure to minimise environmental impact and store liquid manure appropriately	Fertiliser management	
Fertiliser management: Soil analysis and recording nitrate leaching	Fertiliser management	
Fertiliser management: Limit nitrate, phosphorus and potassium application. Limit by crop type	Fertiliser management	
Fertiliser management: In certain areas keep autumn and winter cover (legal requirement)	Fertiliser management	
Crop protection: Keep records about plant health and application of inputs	Nutrient management	
Crop protection: Maintain ditches for the protection of wildlife	Nutrient management	EFA
Crop protection: Know restrictions for inputs (legal requirement)	Nutrient management	
Crop protection: Subscribe to a technical advisory service	Nutrient management	
Crop protection: Ensure equipment is working properly - carry out checks every 3 years	Nutrient management	
Crop protection: Have a water reserve for cleaning fertiliser equipment	Nutrient management	
Crop protection: Protect water source from pollution (legal requirement)	Nutrient management	
Irrigation: Record water extraction; Record irrigation practices (sensors, weather data, water balance, wilting); participate in collective water management for more efficient irrigation practices	Water management	
Ensure traceability of animals and crops	n/a	

Animal welfare	n/a	
Hygiene	n/a	
Waste management	n/a	
Protect landscape and biodiversity: Ensure clean pathways	Biodiversity	
Protect landscape and biodiversity: Ensure livestock have stable access and that manure is cleared away	Biodiversity	
Protect landscape and biodiversity: Ensure permits are received for any new buildings (legal requirement)	Biodiversity	
Protect landscape and biodiversity: If N2K designated, know all N2K businesses in the area, identify and protect landscape elements	Biodiversity	EFA
Protect landscape and biodiversity: Comply with Directives Nos. 79/409 (called "Birds") and 92/43 (the "Habitats") in terms of: Non-destruction of plant and animal species protected; Non-destruction of the habitats of these species; Non-destruction of a species of animal or plant not native. (legal requirement)	Biodiversity	
AREA - Agriculture respectueuse de l'environnement en Aquitaine		
All: 1. Reduce diffuse pollution. Receive training and advice	Fertiliser management	
All: 2. Ensure all inputs are properly stored to remove sources of pollution	Fertiliser management	
All: 5. Reasonable application of PPP according to the crop. Record all application. Receive advice/training on PPP application. Participate in collective action where possible	Nutrient management	
All: 7. Avoid pollution from processing plants	n/a	
All: 8. Carry out biodiversity friendly practices: Have a management plan, identify water and biodiversity priorities	Biodiversity	
All: 8. Carry out biodiversity friendly practices: Record where N2K sites are	Biodiversity	
All: 8. Carry out biodiversity friendly practices: Introduce vegetated strips at least 5m wide along riparian and non-riparian edges. For specialised perennial crops within 10 m of a water body, ensure inter rows have grass cover or install a 5m riparian buffer strip. All chemical treatments and fertiliser application is forbidden in this area (as defined by GAEC)	Biodiversity	EFA
All: 8. Carry out biodiversity friendly practices: Introduce grass cover between all rows in perennial crops	Biodiversity	EFA
All: 8. Carry out biodiversity friendly practices: Introduce grass cover for autumn and winter	Biodiversity	
All: 8. Carry out biodiversity friendly practices: Carry out apiculture on fallow areas	Biodiversity	EFA
All: 8. Carry out biodiversity friendly practices: Introduce and maintain hedges, groves etc	Biodiversity	EFA
All: 9. Complete an energy audit for the holding. Implement the recommendations of the diagnosis to allow a reduction in consumption and use of renewable energy	Energy	
Above threshold: 3. Ensure adequate storage for manure	Fertiliser management	
Above threshold: 4. poultry welfare	n/a	
Above threshold: 6. Avoid diffuse pollution linked to PPP. Ensure equipment is well maintained and cleaned. Ensure appropriate equipment is used to avoid PPP application on unfarmed areas such as hedges and grass strips	Nutrient management	

Above threshold: 10. Reasonable use of water for irrigation. Includes: receiving technical advice, keeping records, ensure irrigation equipment is approved, maintain irrigation equipment and prevent leaks	Water management	
Bord Bia Quality Assurance Scheme-Beef		
All records must be retained for a minimum of 3 years, however prescriptions and animal remedy records (both purchase and usage) must be retained for 5 years.		
NB This scheme requires a significant number of animal welfare actions that have not been included here	N/A	
Raw or treated sewage sludges are prohibited from being used on Bord Bia certified farms	Nutrient management	
Adequate facilities for collecting and storing of all manures and effluents (including farmyard manure, slurries and effluents arising from silage storage and dirty water / yard run-off) must be in place in order to prevent pollution and disease (Category 1)	Nutrient management	
Where stock is outwintered, the Producer must avoid placing livestock on poorly drained land and steps must be taken to prevent excessive poaching particularly near watercourses. Producers must also comply with the regulatory requirements / restrictions relating to areas of special conservation under their control.	Nutrient management	
Producers must be aware of the restrictions applying to manure and fertiliser spreading on the farm.	Nutrient management	
Fuel / oil storage and dispensing facilities must be managed in a manner that minimises risk of spillage and / or contamination during fuelling.	N/A	
Waste oils and lubricants must be collected and controlled pending disposal through a specially provided Local Authority approved facility.	N/A	
Farmyards must be maintained in a tidy, ordered fashion.	N/A	
All waste plastic sheeting and bags must be collected and controlled pending disposal.	N/A	
Farm machinery must be maintained in good condition and stored in a manner that minimises both the biosecurity risk and the risk of injury to animals.	N/A	
Bord Bia Horticulture Quality Assurance Scheme		
Keep records of seed variety and supplier and any treatments		
Use resistant plants to reduce need for PPP		
There must be documented records that reference each area covered by a crop with all the agronomic activities related to Bord Bia documentation requirements of this area.		
The participant must know the history of the land use prior to use. The land must be considered in relation to its suitability for purpose, and any risks assessed, for example erosion, contamination, etc.		
Crop rotation must be carried out and documented. (where appropriate). There must be a documented record of the rotation of annual crops.	Crop management	CD
The type of soil is identified for each site, based on a soil profile or soil analysis or local (regional) cartographic soil-type map.	Soil management	
Mechanical cultivation should be used where proven to improve or maintain soil structure, and to avoid soil compaction. Techniques applied should be suitable for use on the land.	Soil management	
Where chemical fumigation has been used the farmer should be able to demonstrate assessment of alternatives to chemical soil fumigation through technical knowledge, written evidence or accepted local practice	Soil management	

Where chemicals are used to sterilise substrates for reuse, the following information must be recorded: location of sterilisation, date, type of chemical used, method of sterilisation and operator performing sterilisation. Where substrates are reused, steaming should be chosen as the preferred option for sterilisation.	Soil management	
The application of fertilisers must be based on the nutrient requirements of the crop, appropriate routine analysis of nutrient levels in the soil or the nutrient solution, knowledge of the soil and/or on receipt of technical advice.	Fertiliser management	
Fertiliser application records must be available for inspection. Records that are required under the Nitrates directive can be used for compliance with his control point (quantity, location, date, type, method). Fertigation records are also required for protected crops	Fertiliser management	
Growers and/or their advisers must have knowledge regarding quantity & type of fertilisers used. (Category 2). Where an outside advisory service is used documentary evidence must be available to demonstrate the training/competence of the responsible person to determine quantity and type of fertilizer (organic and inorganic), for example a letter from Teagasc. Where the participant is relying on his/her own experience, records demonstrating 'best practice' must be available. This would include follow-up of recommendations on soil analysis	Fertiliser management	
Fertilisers in storage must be stored in a manner that poses no risk to the environment, (including water sources) and must be stored separate from fresh produce.	Fertiliser management	
Manure (if used) must be stored in an appropriate manner, which reduces the risk of contamination of the environment (i.e. away from water sources).	Fertiliser management	
Raw untreated or treated human sewage sludge must not be used on the cropping area	Fertiliser management	
Irrigation plan should be available for inspection. Calculations are available and are supported by data records, e.g. rain gauges, drainage trays for substrate, evaporation meters, water tension meters and soil maps.	Water management	
Untreated sewage water is not used for irrigation/fertigation. Where treated sewage water is used, water quality complies with the WHO published Guidelines for the Safe Use of Waste water and Excreta in Agriculture and Aquaculture 1989.	Water management	
Irrigation water has been abstracted from sustainable sources	Water management	
Area between crops must be kept clean and free from crop debris	Intercrop management	
Irish Grain Assurance Scheme		
Must keep record and keep for 5 years	N/A	
Limits to PPP. All inputs must be approved by the Pesticide Control Service (government agency). Includes limits to rate, application method, equipment used, storage of PPP, records must be made and kept (including for the use of water used for PPP)	Nutrient management/soil management	
Limits to fertiliser. Includes soil analysis, limits to crop nutrients, avoid applying to hedges and drains, keep records	Nutrient management/soil management	
Proper upkeep of machinery	N/A	
Graskeurmerk		

Basic rule: Livestock must regularly graze outdoors	N/A	
Basic rule: synthetic chemical fertilizers is permitted on grass pastures where animals graze	Nutrient management	
Basic rule: hemische-synthetic pesticides are not allowed on grass pastures where animals graze	Nutrient management	
Basic rule: on arable land, market gardens and greenhouses only fix nitrogen fertilization with natural as well as animal and vegetable fertilizers allowed	Nutrient management	
Basic rule: In fields, market gardens, pastures (= where no grass grazing animals) and in greenhouses are spraying with chemical-synthetic pesticides allowed.	Nutrient management	
Potatoes: Article 1. When growing Grassland Potatoes are only two sprays with synthetic chemical pesticides permitted per season, which is a preventive and brief activity against Phytophthora have.	Nutrient management	
Potatoes: Article 2. On farms where arable rotation was followed, 1 time per 6 years a crop of grass / clover (lupninen, alfalfa) throughout the growing season to be grown on the grounds and in long leased land. This grass / clover crop may not be combined with other crops on the same land.	Crop management	CD
Potatoes: Article 3. Spraying with synthetic chemical agents against weeds and aphids are not allowed. Weeds can be controlled by hoeing and ridging.	Nutrient management	
Potatoes: Article 4. Disinfect seed and seed treatment against rhizoctonia and scabies is allowed.	N/A	
Potatoes: Article 5. Death Spraying with chemical synthetic means of the potato crop at the end of the growth is not allowed. Permitted haulm topping and death fires.	Nutrient management	
Potatoes: Article 6. Washing Potatoes Grassland is not allowed. Well brushing.	N/A	
Potatoes: Item 7. Upon storage, use can be made of carvone and / or of cooling.	N/A	
Potatoes: Artkel 8. Gases with sprout inhibitors have no preference.	N/A	
Potatoes: Article 9. The potatoes may unsorted come from at least 40 mm.	N/A	
The Skylark Foundation		
Product value: The total financial yield of the crop rotation as a whole, is used as a parameter to measure Product Value. Farmers are challenged to use a model to compare several possible crop rotation systems for their farm. This enables them to estimate and interpret the longer term effect of soil improving measures and other sustainable improvements in euros.	N/A	
Soil Fertility: All farmers are invited to the Louis Bolk Institute course “Soil insight”. Using soil profile pits the condition of different soils is discussed and measures for improvement are suggested. Some specific elements of this course: soil properties and soil management, evaluate soil structure, soil life and food web, worms, root development, organic matter, fertiliser use, crop rotation, green manure and cultivation methods. Soil scans based on this course “Soil insight” are performed on every farm by the farmer himself under professional guidance. This soil scan gives a good insight in present soil quality which delivers a perfect “zero-measurement” and a practical basis for a soil improvement plan, if needed.	Soil management	CD

<p>Soil loss: For the whole crop rotation a crop cover index is calculated and wind erosion occurrence is monitored to measure this indicator.</p> <p>Growing winter crops and applying green manure are recommended as having a positive effect. There is also a clear relationship between nutrient loss and the crop cover index. This crop cover index is easy to calculate and appears to be a useful way to measure the prevention of Soil Loss.</p>	Soil management	
<p>Nutrients: As part of the farms Sustainability Plan, a nitrogen (N) and a phosphate (P) balance on crop rotation level are calculated.</p> <p>Sustainable nutrient use aims at a nitrogen balance of 100%, whereby all fertilisers applied are used for crop growth and no leaching of nitrogen occurs.</p>	Nutrient management	
<p>Crop protection: Crop protection plans, spraying plans, spraying techniques, crop protection products and weed maps are reviewed.</p> <p>To measure the Crop Protection indicator, the environment yardstick (CLM) and the costs per crop per hectare are used. This yardstick measures the effect of crop protecting agents on water life, soil life, leaching of agents to the groundwater and the effect on natural enemies of crop diseases.</p>	Crop management	
<p>Water: The water indicator measures water use for irrigation at the farm level.</p>	Water management	
<p>Energy: The energy indicator measures the average overall use of diesel fuel on the farm and the average crop rotation's production of N₂O (greenhouse gas). The nitrogen balance used for the Nutrients indicator is used as the basis for the calculation of N₂O production.</p>	Energy	
<p>Biodiversity: The combination of crops multiplied by the varieties in a crop rotation is used as a measurement of arable flora biodiversity.</p> <p>Populations of the "arable bird-trio": Sky Lark (<i>Alauda arvensis</i>), Yellow Wagtail (<i>Motacilla flava</i>) and Meadow Pipit (<i>Anthus pratensis</i>) are chosen as measurement of fauna biodiversity. All three species are on the red list of most threatened birds in the Netherlands.</p> <p>The use of flower/herb strips along the fields on farms is promoted. The strip also functions as a buffer between the field and the ditch preventing leaching of chemicals and fertilisers into open water.</p>	Biodiversity	EFA
<p>Human capital: This indicator related to relations, networking, knowledge transfer, inspiration sources. Questionnaires are used to evaluate the opinion of the farmers on these matters on a regular basis.</p>	N/A	
<p>Local economy is about the importance of farming business as a family income but also about the economy of the region. A questionnaire is used to evaluate the situation.</p>	N/A	
MPS Fruit and Vegetables		
Energy audit	Energy	
Crop protection agent audit. Limits as per legal requirements	Nutrient management	

Fertiliser audit	Nutrient management	
Waste audit	N/A	
Water audit	Water management	
Water and CO2 footprint - additional requirements for the future	Water and climate	
Organic - additional requirements for the future	Organic	GBD
Milieukeur voor Akkerbouwgewassen en Vollegrondsgroenten (Arable and vegetables)		
1-2. Regular recording and audits	N/A	
3. Fertiliser requirements (pp4-6): Varies by crop, includes limits to rates and method of application and drawing up management plan	Nutrient management	
4. Crop protection requirements (pp7-11): Rates vary by crop but no more than 10%/ha and drawing up management plan	Nutrient management	
5. Water requirements (pp11-12): Irrigation requirements not quality	Water management	
6. Growing free zone (p12): For all crops, a growing free zone held alongside watercourses and water bearing locks, except ditches and dry ditches during the cultivation in this field do not contain water (ie no more than 1 or 2 days in the period between 1 March and 31 October). The cultivation-free zone is not fertilized and sprayed. This growing free zone is: - For potatoes, asparagus, carrots, leeks, salsify, lettuce / iceberg lettuce, onions: 150cm - For barley, grass, oats, rye, wheat: 25 cm - For endive, beetroot and celery: 50 cm - For other arable crops: 50 cm - For all other vegetable: 75 cm. A smaller crop free zone can only be held after written approval of the water.	Biodiversity/Water/ Soil	EFA
7. Cleaning	N/A	
8. Waste	N/A	
9. Packaging	N/A	
10. Climate (p13): Energy audit	Energy	
11. Working conditions	N/A	
12. Additional	N/A	
Naturane		
<u>Crops base:</u> Ensure traceability of crops	N/A	
<u>Crops base:</u> Ensure certificate/record of the seed quality is available		
<u>Crops base:</u> Keep record of all PPP applied		
<u>Crops base:</u> Keep record of any GMO cultivar and plan of how they have been stored and managed		
<u>Crops base:</u> Keep record of sowing and planting and of crop rotations		
<u>Crops base:</u> Take account of nutritional needs of the crop and soil fertility. If advice is sought, must ensure advisor is properly qualified. Keep records of all fertiliser applications		
<u>Crops base:</u> Ensure fertiliser is appropriately stored (separately, covered, clean, dry area)		
<u>Crops base:</u> No sewage sludge can be applied. Must record all organic fertiliser applied		
<u>Crops base:</u> Irrigation must not waste water. Must write up a management plan and keep record of water use. Carry out an annual risk assessment to identify water courses, irrigation methods, types of crop and water analysis		
<u>Crops base:</u> Integrated pest management: ensure technical advice has been sought. Ensure at least one of the recommended activities to reduce pests has been adopted		

<u>All farm base requirement:</u> Written action plan to enhance habitats and maintain farm biodiversity. Plan to include integrated production practices, nutrient management, conservation sites, water supplies and impact on other users. Tangible actions and initiatives - There are no specific details	N/A	
<u>All farm base requirement:</u> Unproductive sites: plan to convert unproductive sites and identified areas that give priority to ecology into conservation areas where viable. EG maintenance of low lying wet areas, woodlands, headland strips to enhance natural flora and fauna - There are no specific details	Biodiversity	EFA
<u>All farm base requirement:</u> Energy efficiency. Keep energy efficiency records. Select appropriate farm equipment - There are no specific details	Energy	
PRODUCCIÓN INTEGRADA (GALICIA) (Horticulture)		
General requirements: Must keep records of all practices and controls. Must be updated the same week that the actions are carried out.	N/A	
Planting: The timing and intensity of cultivating practices should bear minimum environmental impact. Wherever possible introduce 3 crop rotation, if this is not possible, must ensure practices that conserve soil fertility are adopted.	Crop rotation	CD
Soil preparation: Maintain and improve soil fertility: incorporate organic matter, prevent compaction and minimum soil disturbance (structural and chemical). Requirements include: <ul style="list-style-type: none"> • Where organic matter is incorporated, must be between 1-5kg/m²/year and tillage cannot exceed first 20cm. Must avoid soil compaction and changing the chemical balance of the soil. • Weeds and plant debris must be removed in a proper manner and in good time to avoid transmission of any pests/diseases. • Respect soil structure and preserve terraces to avoid soil erosion. 	Soil management	
Sowing and planting: Requirements include: <ul style="list-style-type: none"> • Ensure plants are approved and certified. Keep records for at least two years. • Remove any signs of pests/diseases before planting. • Ensure plant type, density, plant cycle, rotation is in keeping with local conditions. • If a period of rest is required, see Annex for period specific to each variety. 	Crop management	
Fertiliser use: requirements include: <ul style="list-style-type: none"> • Application must be via soil or substrate; any foliar application must be technically approved. • Must carry out an analysis at least once every 5 years. • Implement a macronutrient fertiliser management plan for each crop within the rotation. • Application must be designed to minimise soil erosion risk and risk of nitrate leaching. • Ensure pH levels are properly maintained. 	Fertiliser management	
Pruning: Requirements include: <ul style="list-style-type: none"> • Introduce a management plan for pruning. • Ensure equipment is sharp to maximise efficiency. • Disinfect/change gloves daily to avoid any pest/disease contamination. • Remove cuttings to avoid spread of pest/disease unless weather prevents it. 	Crop management	
Pollination requirements	Nutrient	

	management	
Irrigation: Requirements include: <ul style="list-style-type: none"> • Annual analysis of water quality to inform irrigation practices. • Must not exceed maximum levels of irrigation which are determined according to the annual analysis. 	Water management	
PRODUCCIÓN INTEGRADA DE LA RIOJA		
Minimum soil disturbance to protect soils from soil erosion. Must not used prohibited chemicals or plastics	Soil management	
Sowing requirements: Specified seed varieties adapted to local conditions. Where woody crops are grown, the planting, planting density, and seeding time, rotations, planting frame and possible association with other crops must be adapted to local conditions.	Crop management	
Fertiliser requirements: Soil analysis and groundwater analysis. Fertiliser application must take into account the crop, the age of the crop, times of application. Limited rates. Must be in keeping with GAEC	Nutrient management	
PPP: Limits to application according to crop, product and time	Nutrient management	
Tillage regime according to the gradient of the slope; soil cover; tillage requirements and restrictions on machinery used	Soil management	
Pruning regime: limits to methods used, no uncontrolled burning	Crop management	
Water management: irrigation limits to protect water quantity	Water management	
Integrated pest management	Nutrient management	
Periodic review of machinery used to apply inputs to ensure it is efficient		
Harvest: Specified harvest dates to avoid rotting and pathogens		
Once collected, must use clean water to clean crops and not store beyond limited period	N/A	
PRODUCCIÓN INTEGRADA EN ANDALUCÍA (Olive groves)		
General requirement: Training	N/A	
General requirement: Facilities, equipment and personnel. Requirements include periodic reviews of machinery that are recorded, appropriate storage of all inputs, compliance with safety for personnel (for example, appropriate warning signs and alarms in place), records of any accidents and emergencies.	N/A	
Land management requirement: Soils, land preparation and green cover management. Tillage and management of land cover. Requirements include: <ul style="list-style-type: none"> • Carry out soil conservation practices to reduce soil erosion and energy consumption according to the slope of the plot. Respect soil structure to prevent runoff and waterlogging. • Do not carry out practices on slopes with a >10% incline. Where terraces exist, avoid any practices that will affect structure. • Reduced tillage that doesn't exceed 20cm where soils are loamy, cracked, high compaction. Tillage is also permitted in between to support green cover between rows. • Gullies must be maintained • Agro-biodiversity features must be maintained such as natural vegetation boundaries, hedges, trees, isolated forest edges. • Herbicides may be used to manage weeds but must be regulated and within restrictions. 	Soil management	
Land management requirement: Planting: Requirements include: <ul style="list-style-type: none"> • Choice of plant must be certified and approved 	Crop management	

<ul style="list-style-type: none"> • Soil analysis must be carried out first • Rows must be placed in such a way that minimises risk of soil erosion. 		
Land management requirement: Fertiliser use: A fertiliser plan must be drawn up that takes into account plant type, soil fertility and nutritional status of the plant etc.	Fertiliser management	
Land management requirement: Pruning: Requirements include: <ul style="list-style-type: none"> • Keep to specified leaf to wood ratio to ensure appropriate level of leaves to available water. • Remove cuttings before adult beetles emerge. 	Crop management	
Land management requirement: Irrigation: Requirements include: <ul style="list-style-type: none"> • Water analysis to ensure quality and risk to quality is taken into account. This analysis must be carried out every two years. • Analysis to ensure correct quantity of water is used according to plant and soil types. • Methods of drip irrigation to be adopted. • All water used must be registered. • Ensure appropriate drainage is in place to avoid any periods of prolonged flooding and minimise risk of nitrate leaching. 	Water management	
Land management requirement: Integrated Control: Wherever possible use biological/biotechnological methods; minimum intervention with the least risk to surrounding wildlife and humans	Crop management	
Land management requirement: Harvest: Ensure fruit is fully protected and properly transported to avoid infection		
Identification and traceability		
Waste Management and Control	N/A	