Agricultural Subsidies in the form of Environmental Incentives

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Disclaimer:

This document represents part of the author's study programme while at the Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

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List of Acronyms

AEPs	Agri-Environment Payments
AES	Agrarian and Environmental Studies
AoA	Agreement on Agriculture
BPS	Basic Payment Scheme
CAP	Common Agricultural Policy of the European Union
CBD	United Nations Convention on Biodiversity
CO2	Carbon Dioxide
CONAFOR	Comisión Nacional Forestal, Mexico
DP	Direct Payment
DAC	Development Assistance Committee of OECD
EAFRD	European Agricultural Fund for Rural Development
EAGF	European Agricultural Guarantee Fund
EC	European Commission
ECA	European Court of Auditors
ES	Environmental Service
EU	European Union
FAO	Food and Agriculture Organization
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GAEC	Good Agricultural and Environmental Conditions
GNI	Gross National Income
LFA	Less-Favoured Areas
MEA	Millennium Ecosystem Assessment
MT	Metric Tonnes
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
PES	Payment for Environmental Services
Q&A	Questions and Answers
RD	Rural Development
REDD	Reducing Emissions from Forests Degradation and Deforestation
RP	Research Paper
SAPS	Single Area Payment Scheme

SPS	Single Payment Scheme
TRIPS	Trade Related- Aspects of Intellectual Property Rights
UNEP	United Nations Environment Programme
USA	United States of America
WTO	World Trade Organization

Abstract

Agricultural subsidies have been a subject of great tension and divide within the international trading system. This dates from the beginning of the General Agreement on Tariffs and Trade (GATT), short after World War II and continues under the current World Trade Organization (WTO) framework. The existing WTO provisions allow for several exceptions from the commitment to reduce subsidies. These are categorized under the Green Box (this means, they are non-or minimal trade distorting). Subsidies provided by developed countries to their farmers, have undergone in the last 10 years an important shift from Amber Box subsidies (highly distorting subsidies) to the Green Box. The latter are conditioned in some countries, to the compliance with certain standards, such as environmental, animal health and food safety. Green Box subsidies criteria also permits the inclusion of environmental programmes, such as the Agri-Environment Payments (AEPs) financed under the Common Agricultural Policy (CAP) of the EU. AEPs are a form of Payment for Environmental Services (PES), as they are supposed to recognize the positive externalities that agriculture can generate and minimize the negative ones. This research indicates that these environmental incentives have trade distorting effects, as they have an impact on production, wealth, quality of products and decisions made by farmers. They are also part of a more comprehensive basket of subsidies, which accumulate and allow farmers to continue to produce and make investments that they wouldn't be able to make without the subsidies. Besides these economic effects and their impact on other countries, important deficiencies in the implementation of the AEPs cannot be overlooked. These include poor targeting, lack of clear objectives, payment calculation, etc. All of which raise important questions about the effectiveness of the system to really pursue environmental benefits.

Relevance to Development Studies

States have the right to establish the policies that best fit their development and environmental needs. However, as part of the more and more globalized world, States also agree to abide by certain international common rules, which might to some extent, limit that sovereignty. To add more complexity to this already contentious issue, there are occasions when different international regimes overlap or conflict with each other. As recognized by several critics, there is some tension between the international trade and environment regimes. Eckersley (2004: 25, 29) argues that "global trading rules systematically undermine efforts towards international and national environmental regulation" and that "trade rules appear to have the upper hand". So what is interesting about this research paper is to analyse how so called environmental considerations in the North are mainstreamed into agricultural policy and have become an extension of these subsidies. Agricultural subsidies as a whole in developed countries are 2 or 3 fold the amount of Official Development Assistance (ODA) to developing countries, so the amount is significant.

There is a tension between the multilateral trading system, national development goals, and the need to identify incentives for the conservation and sustainable use of natural resources in both, developed and developing countries.

Keywords

Subsidies, Agri-Environment Payments, CAP, Green Box, Environmental Services, trade distortion

Introduction

Throughout different international policy instruments and assessments, including the Millennium Ecosystem Assessment (MEA), there are several references to the need to develop incentives for the conservation and sustainable use of natural resources. Some of these include payments to local landowners for the services rendered by the ecosystems they own (Millennium Ecosystem Assessment. 2005: 95).

Payment for Environmental Services (PES) has become an important strategy in many countries, developing and developed, for the sustainable management of natural resources and its respective financial sustainability. For those developing countries that are very rich in natural resources, their biggest challenge is to maintain and conserve those resources in a way that does not prevent their development, but enhances it and also secures those benefits for present and future generations. However, it is further recognized that globally there are still many debates and differences on what PES means, its effectiveness, limitations and how it is being utilized (Muradian et al. 2013).

The use of such an incentive in developed countries has had a different nuance. In the case of the EU, for example, it includes subsidies to farmers that "protect and enhance the environment on their farmland by paying them for the provision of environmental services" (European Commission. 2013d). In this regard, farmers that adopt environmentally-friendly techniques (beyond legal obligations), may receive a "compensation for additional costs and income foregone resulting from applying those environmentally friendly practices" (European Commission. 2013d). This is the case of the agri-environment measures, which are financed under the CAP (Common Agricultural Policy). The EU justifies some of these payments, among other factors, in the recognition of the potential of the farm sector in enhancing public goods, or reducing the negative externalities of agriculture, for example, lesser use of agrochemicals. Incentives also include the preservation of "traditional agricultural landscapes" (European Commission. 2013b). This compensation is complementary to the direct income support of the CAP. Similar approaches by other developed countries are currently being used.

While recognizing the environmental benefits of providing incentives at the national or regional level for the conservation and sustainable use of natural resources, the matter becomes very sensitive in terms of the international trading system, and also in relation to the WTO' rules when these incentives are part of the agricultural subsidies. Agricultural subsidies are one of the most contentious issues between developed and developing countries. It is argued that they have resulted in a distortion of world agricultural prices and the reduction of profitability in developing countries, having serious effects on poverty, as farmers in these countries are not able to compete with subsidized crops (La Vina et al. 2006: 8). Subsidies in their traditional sense are recognized for exacerbating biodiversity loss, enhancing overproduction and promoting unsustainable agricultural practices (including the overuse of fertilizers and pesticides which have serious effects on the environment/ecosystems) (Millennium Ecosystem Assessment. 2005: 21, 95, La Vina et al. 2006: 9, UNEP 2013: 61).

The Uruguay Round of Trade negotiations which gave birth to the WTO in 1995, addressed the need to reduce the trade distorting domestic subsidies. Subsidies were classified in three categories, or boxes, according to their impact on international trade. They are: Amber Box (highly trade distorting subsidies), Blue Box (subsidies that cause some distortion), and Green Box (those that cause no or minimal distortion)(Bhaskar and Beghin 2009: 1). The idea was to shift from coupled payments to decoupled ones (from Amber to Green Box). Decoupled payments (non- or minimal trade distorting) "are those that are not related to current production, factor use, or prices, and for which eligibility criteria are defined by a fixed, historical base period" (Bhaskar and Beghin 2009: 1). The Agreement on Agriculture under WTO sets several criteria to allocate payments on the Green Box. They are exempted from reduction commitments, and can even be increased without any limits under WTO (WTO. 2013c).

According to J. Berthelot (2005), developed countries have been since then "playing around" with the coloured boxes, transferring their subsidies from the Amber to the Blue or Green Box. As an example, CAP reforms that took place in 2003, shifted most of its subsidies to the Green Box, including agri-environment measures.

The reformed CAP also considered some minimum environmental standards and schemes to be followed by farmers, as well as optional measures such as the Agri-Environment Payments (AEPs). There is a concern that these subsidies really do have trade-distorting effects – even though they are labelled under the Green Box.

Based on this, the research question of this paper is:

Are environmental incentives in the European Union functioning as a continuation of subsidized agriculture and evasion of WTO provisions?

The main objective of this Research Paper (RP) is:

To analyse to what extent environmental incentives utilized in the EU within their Common Agricultural Policy (CAP) function as a continuation of conventional subsidies and are contravening WTO provisions on domestic support in the agricultural sector.

This RP has three main chapters: Chapter 1 will address the main theoretical building blocks: Payment for Environmental Services and Agricultural Subsidies, through a literature review and current discussions. Chapter 2 will address the Common Agricultural Policy of the European Union, its origins and scope to have a clear understanding of how the EU is subsidizing its farmers. Finally, Chapter 3 will gather theoretical and empirical information and evidence to answer the main question of this research.

Methodology

This RP has two main building blocks as key theoretical clusters: Agricultural Subsidies and Payment for Environmental Services (PES). An extensive literature review was done on both subjects. The RP also introduces the European Common Agricultural Policy (CAP) and relate it to both building blocks.

The analysis focuses on the intersection of the two blocks, which will be the value added by this work, as AEPs under the CAP are a form of payment for environmental services (PES).

This RP is mainly a desk study, which analyses available literature (secondary data) on the key subjects mentioned above, in order to be able to link these concepts and make the necessary conclusions. A detailed information examination from different sources was completed. This included in some cases the identification of critics that were in favour or against a certain topic to be able to present a comprehensive view. As for some sensitive issues an effort was made to identify more than one source.

To understand how the CAP works and has evolved throughout the years, documentation from four EU institutions was reviewed: the European Parliament, the European Council, the European Commission and the European Court of Auditors. This documentation included relevant performance reports, legislation from 1999 to date, EU notifications to WTO (from 1995 to date), factsheets, financial reports, budget allocations, as well as simplified documentation addressed to civil society, among others.

An analysis of how the subsidies' box system at the WTO came into existence and is operating was necessary. The Agreement on Agriculture (AoA) was also reviewed, as it contains the main provisions regarding what type of subsidies can be considered under each box. Green Box subsidies were of special interest for this research, as the criteria for the inclusion of agricultural subsidies for environmental programmes are part of it. Then the analysis focused on how the CAP, in particular its environmental components, intersect with WTO provisions. This involved a detailed literature review of critiques and analysis, as well as the use of databases (Eurostat, FAOs, etc.) to confirm or analyse several facts.

This work is complemented by personal communication or written questions which aimed to confirm what the literature was revealing or to fill in some information gaps. This included questions to EU and non-EU government representatives, European Commission, academia, and civil society. Some of their insights were included and others led additional documentary sources.

Scope and limitations

Due to length limitations, this paper will only focus on the EU agricultural subsidy policy. It would be recommendable for future work to assess the subsidy policies, as they relate to the environment, in other Northern countries which are also recognized for having highly subsidized crops.

Regarding limitations faced in doing this research, it was noted that since decoupling of subsidies within the EU is supposed to delink payments from products, it was not possible to identify registers or information (or at least not available to the public), on which crops are benefiting from the different subsidies in order to analyze the extent to which that a crop is subsidized.

Since this research's findings address sensitive issues within the European political context, names of the respondents will remain confidential. Nonetheless, they are available to the members of the examine committee.

Chapter 1 **Theoretical Framework**

This first Chapter will address the main building blocks of this research. It will begin by introducing the concept of Payment for Environmental Services (PES), its definition, application and limitations. It will be followed by the introduction of the concept of agricultural subsidies, their purpose, effects on economic and environmental grounds, their context within the WTO, the box classification system and current debates, including the Doha Development Round.

1.1. Payment for Environmental Services (PES)

1.1.1 Background

As clearly indicated in the MEA, human kind and life on Earth is fully dependent on the ecosystems and the services they generate. Examples are the provision of fresh water, food, climate regulation, etc. However, these ecosystems have undergone significant transformations, in particular during the last 50 years, in order to satisfy "growing demands for food, fresh water, timber, fiber and fuel" (Millennium Ecosystem Assessment 2005: 1). As a result, ecosystem services are being lost or suffering from some degree of degradation (Millennium Ecosystem Assessment 2005: 6, Wunder et al. 2008: 834). In this regard, there has been a need to develop policy instruments or solutions that adequately address these challenges, while at the same time, respond to new conservation paradigms (Wunder 2005: 1).

PES comes out as an economic instrument or incentive that links environmental services' users with those who are provisioning those services (for example, landowners), through payments, in cash or in kind, as long as the providers commit themselves to conserve, restore or adopt certain behaviors that will enhance or maintain the provision of those services (Wunder 2005: 1).

Wunder (2005: 3) defines PES as:

> "1. a voluntary transaction where
> 2. a well-defined Environmental Service- ES- (or a land-use likely to secure that service)
> 3. is being 'bought' by a (minimum one) ES buyer
> 4. from a (minimum one) ES provider
> 5. if and only if the ES provider secures ES provision (conditionality)."

While PES is not the solution to all environmental problems, and the scheme to be adopted is very context dependent (Muradian et al. 2010: 1207), some of its supporters consider that it is a good tool when "ecosystems are mismanaged because many of their benefits are externalities from the perspective of the ecosystem managers" (Engel et al. 2008: 1). So, conserving forests for example, might not be an interesting option for farmers or land owners, compared to turning that land into agricultural uses and receiving an income

stream for the products generated; PES turns conservation into a feasible option for those service suppliers, who now have a new income alternative. In cases when poor landowners or communities are the ones supplying the service, PES support becomes an attractive option for its effect also on reducing poverty (Pagiola et al. as cited in Muradian et al. (2013: 2).

Pagiola and Platais (as cited in Engel et al. 2008: 665) indicate that PES is a tool through which externalities are then internalized. Or as also defined by Engel, Pagiola et al (2008: 663) PES is a "mechanism to translate external, non-market values of the environment into real financial incentives for local actors to provide environmental services (ES)".

PES applies the precautionary principle[1], comparing the potential costs of the loss or irreversible damage of a critical ecosystem service, for example, water provision, with the costs of paying for its preservation.

1.1.2 PES beyond forests

PES is commonly used for conserving forest or forest related uses, especially in developing countries. However it is also applied "to preserve, restore, or establish any land use that generates external benefits, including many agricultural uses" (Engel et al. 2008: 664-667). So for example, the protection of biodiversity, carbon sequestration, pollination and pest control, as environmental services, are also considered to be enhanced through agricultural landscapes, silvopastoral activities, etc. (Pagiola 2004: ix, 1, 11, Omer et al. as cited in Lockie 2013: 92). Other critics indicate that Agri-environment policies in the United States and the EU are considered PES mechanisms "that pay farmers to reduce the negative externalities of agricultural production, while serving as a means to transfer public funds to farmers"(Baylis et al. 2008: 753). Scenic/landscape beauty is also considered by some as an environmental service worth maintaining.

1.1.3 Ecosystem or Environmental Services

This wider use of the term "environmental services" leads to the discussion of whether or not ecosystem and environmental services are the same. According to the MEA:

[1] Rio Principle number 15: 'In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. ...' (United Nations Conference on Environment and Development 1993)

> "Ecosystems services are the benefits provided by ecosystems. These include provisioning services such as food, water, timber, fiber, and genetic resources; regulating services such as the regulation of climate, floods, disease, and water quality as well as waste treatment; cultural services such as recreation, aesthetic enjoyment, and spiritual fulfillment; and supporting services such as soil formation, pollination, and nutrient cycling." (Millennium Ecosystem Assessment 2005: 39)

As Muradian et al (2010: 1202) indicate, it is very common to see those two terms used interchangeably in the literature, even though both concepts have different meanings. The authors consider ecosystem services as a subcategory of environmental services, as they entail only the human benefits generated from so called "natural" ecosystems, while environmental services "also comprise benefits associated with the different types of actively managed ecosystems, such as sustainable agricultural practices and rural landscapes" (Ibid). Wunder (2013: 3) also recognizes that both concepts are often used as synonyms.

It is also worth noting, that WTO's definition of environmental services is different from the ones indicated above. The use of the term can include "sewage services, refuse disposal, sanitation and similar services, reducing vehicle emissions, noise abatement services, nature and landscape protection services and other environmental services" (WTO. 2013b).

1.1.4. PES as a market mechanism

Muradian et al. (2010: 1203) and Lokie (2013: 91) highlight that for some analysts, environmental degradation is the result of market failures, which fail to include the environmental costs (conservation, regeneration, etc. of natural resource base) within the cost structures. Market failures can take place due to lack of information, weak property rights, or valuation of natural resources "below their full economic and environmental cost" among other factors (Bardsely et al. as cited in Lockie 2013: 91). Tietenberg (as cited in Engel et al. 2008: 664) considers the public good condition of some ES as also a reason for market failure. According to the mainstream position, if market failure is in great part the cause of environmental degradation, then undersupply of ES should be solved through the market as well (Muradian et al. 2010: 1203). Since current and future provision of environmental services is being affected by several human induced factors, the notion of "scarcity makes them potentially subject to trade" (Wunder 2005: 1). This has turned ES into a tradable commodity.

According to Muradian et al (2013: 3) in very few cases PES can be considered to take place in a genuine market. Wunder (2013: 5), agrees that "only in exceptional cases do PES operates through markets with competitive forces". Actually, different scholars recognize that beyond the idea of PES as a market instrument, PES has become part of rural development programmes, with broader goals and criteria beyond efficiency (Muradian et al. 2010: 1207) or achievement of environmental goals (Wunder et al. 2008: 850).

Internationally, the most similar use of the instrument in a market can be found in the Kyoto Protocol provisions. The Protocol enabled carbon markets, recognizing carbon as a commodity that can be traded among Parties(UNFCCC. 2013). There are several critics on how effective this mechanism has been in reducing greenhouse gas emissions or in achieving the necessary structural changes, and to what extend the system has actually redistributed pollution and sold "polluter rights" (Lohmann 2008: 6-7).

1.1.5 PES schemes

Wunder (2005: 7) distinguishes 3 types of schemes, which are very useful when analyzing PES or determining its design:

- Area vrs. Product based schemes: In the case of area schemes, land space and its use is agreed previously, for example, the use of a territory for forests conservation purposes. In the case of product-based schemes, the payment relates more to the production or delivery process that is environmentally sustainable, for example, eco-tourism.

- Public vrs private schemes: Depending on who the buyer is, the scheme can have different interests and outcomes. In the case of government programmes for example, the resources obtained from ES users through taxes, or grants, etc., are channeled through the government to the ES providers. The advantage in this case is that the State provides some sense of legitimacy and has nationwide jurisdiction. The downside of these schemes, according to Wunder et. al. (2008: 249), is that in many cases, governments might have additional or side objectives, beyond the provision of the ES (for example, poverty reduction, employment creation). As indicated by him (Ibid.: 850): "When the criteria for spatial targeting or for enrolling applicants is something other than capacity to deliver ES, the program´s effectiveness is likely to decline". In public schemes, there are usually multiple ES being tackled, while private ones are most of the time focused on just one ES (Wunder et al. 2008: 839).

- Use-restricting vrs asset-building schemes: Under use-restricting schemes, those ES suppliers that engage into conservation activities, setting aside areas, and also actively maintaining land free from external threats, are compensated for their opportunity costs. Asset-building schemes usually address the restoration of an area (such as reforestation efforts), in order to be able to provide or enhance an ES (Wunder 2005: 14).

Engles et al (as cited in Muradian et al. 2010: 1203) identify 3 characteristics a PES scheme should entail to be 'genuine':

> "a- Relationship between the type of land use being promoted and the provision of the ecosystem service must be clear;

b) Stakeholders must have the possibility to terminate the contractual relationship (it is a voluntary transaction); and
c) A monitoring system must accompany the intervention, in order to ensure that the provision of services is taking place (additionality and conditionality of payments)".

It is important to note, that in very few occasions PES tend to fulfill the three conditions stated previously (Muradian et al. 2010: 1203). In the case of point a), for example, there are several views that highlight the fact that while payments should ideally be linked to the actual ES provision (carbon absorption, etc.), the reality is that "payments cannot be based on variables that ES providers cannot observe" (Pagiola and Platais as cited in Wunder et al. 2008: 843) and that on the ground, ES provision is difficult to measure or monitor (Porras et al. 2013: 32). PES faces most of the time uncertainty due to lack of scientific or technical knowledge when calculating the provision of the ES (Muradian et al. 2010: 1204). Additionally, payment calculation is usually based on income forgone or additional cost in implementing a policy (Baylis et al. 2008: 758), adoption of particular land-use (Engel et al. 2008: 668), opportunity costs or willingness to pay (Wunder 2005: 11, 18).

1.1.6 Critiques and limitations

While PES is highly valued by some as an effective tool for achieving environmental and wider objectives, such as rural development, PES is not exempted from critiques and limitations. Some of them have already been mentioned above (uncertainty, valuation, lack of a clear relationship between the land-use and the ES, lack of scientific knowledge, etc.)

One critique that is commonly highlighted by several analysts, is the "reduction of complex ecosystems into tradable commodities" (Burkett, McAfee, Milne and Adams, as cited in Arsel and Büscher 2012: 59), or as a "single exchange-value" (Cosoy and Cobera as cited in Muradian et al. 2013: 2), ignoring or oversimplifying complex and long existing interactions between humans and the environment (Van Hecken and Bastiaensen 2010: 787), including the "historic-ecological processes that gave rise to them" (Fairhead et al. 2012: 244). The ecosystem is segregated into parts, and these parts are sold as any other commodity, however, the reality is that the ecosystem exists in its integrity, by the interaction of its parts, and they cannot exist in isolation. Some scholars call this phenomenon the neoliberal environmentalism, and describe it as a process that "begins from the conceptual separation of nature and society and then reconnects them by reductively constructing 'nature' so that it can be encompassed within 'economy'" (McAfee and Shapiro 2010: 581). For instance, forests have an important role in absorbing CO2 emissions, but for the carbon markets, it is not relevant if this is done by a primary biodiversity rich forest, source of livelihood for local populations, or by a forest plantation (monoculture). Büscher (as cited in Arsel and Büscher 2012: 67) indicates that for those supporters of market instruments within environmental policy setting, the only way to save nature, is "through its submission to capital and its subsequent revaluation in capitalist terms". In other words "the supremacy of the logic of

capital accumulation over society´s relationship with nature" prevails (Arsel and Büscher 2012: 58).

According to some scholars, one of the main problems of PES is that it does not address the root causes of environmental degradation, its drivers (Van Hecken and Bastiaensen 2010: 787). PES as the solution or win-win scheme, for both, conservation and reducing poverty (Muradian et al. 2010: 1203) is framed within the same business as usual provisions of capitalism and its so called appetite for accumulation. Equally important, other authors highlight that there is "the illusion that biological diversity can be saved without fundamental changes in the present distributions of political power" (McAfee as cited in Van Hecken and Bastiaensen 2010: 787).

Another concern or critique expressed by some scholars is how the sense of crisis has led to "accumulation by dispossession" and justified "green grabs" (Fairhead et al. 2012: 245). The goal of protecting nature and the potential income stream that can be generated has encouraged some governments, in particular from developing countries, to promote all types of investments in their territories. Rural people are then expelled from their land, livelihoods, etc., on environmental grounds (Ibid. p. 249). In some cases, even people who are not participating in the PES scheme, can be affected as resources to which they used to have open access, are now restricted (Tacconi 2012: 34).

Other critical arguments state that PES can also be conceived as a "right to pollute" (Tacconi 2012: 34). The carbon markets, through its cap and trade or offset mechanisms can be an example.

As can be observed from the previous paragraphs on PES' attributes, limitations and critiques, there are still many unresolved issues. Further discussion, evidence and analysis are necessary between theorists and practitioners. To start with, there is not even a clear definition of what PES entails.

As mentioned earlier, PES is highly valued by some individuals or governments, as a tool for internalizing the cost of conservation into the economy. The fact that some ecosystem services have been provided without any costs to those benefiting from them, does not necessarily mean that their conservation or enhancement have no cost. In several occasions, many are enjoying the benefits, while the cost of conservation of certain key habitats lays on the shoulders of a few. But these are not easy matters to resolve, as the equity question arises among and within countries. On the other hand, some critiques put forward deserve a sincere and careful consideration when deciding if PES schemes can or should be applied. As some analysts argue, PES is not the "stand-alone solution", but "an integral part of a broader policy approach that comprises a diversity of market and non-market interventions". (Engel et al., Muradian et al. as cited in Van Hecken and Bastiaensen 2010: 787)

1.2. Agricultural subsidies

1.2.1 Background

The General Agreement on Tariffs and Trade (GATT) came into force some years after the Second World War. Concerns related to protectionist and trade distorting measures in the field of agriculture were a subject of discussion and concern since the first years of the agreement (Stancanelli 2009: 23). However, agriculture was not part of GATT (or was only marginally addressed). This was because of the opposition of developed countries (Khor 2009: 30). They were aware that in this field they could not cope with the liberalization requirements under GATT and that developing countries had a comparative advantage (Ibid: 29).

During the 1980s, after several decades of strong domestic support by developed countries, these subsidies were creating a surplus, which was allocated in world markets, supported by export subsidies. Subsidies were tied to production, so the more a farmer produced, the higher the subsidy was. This led to an increase in the use of chemicals and fertilizers to enhance production, and as a result, negatively affected the environment (La Vina et al. 2006: 8). Many developing countries' domestic markets were affected as their farmers could not compete with the subsidized prices from Northern farmers. As a result, their dependence on imports increased and foreign exchange reserves were reduced. The maintenance of the subsidy system was demanding more resources in the Northern countries, as world prices were shrinking and maintaining the high prices to farmers back home was becoming more expensive. At the same time, income from import duties in developed countries were decreasing and their financial burden to sustain the subsidy system was getting bigger (Stancanelli 2009: 20).

It was until the Uruguay Round of Trade Negotiations (1986-1994), that gave rise to the World Trade Organization (WTO), that agriculture, together with textiles and clothing, was finally included as part of the disciplines of WTO. Developing countries were demanding its inclusion, and developed countries were aware that this was the only way that the former were going to engage in further international trade negotiations (Anton 2009: 2). The discussion was not exempted from pressures and opposition on behalf of farmers from developed countries, who had enjoyed subsidies and protective measures for many years, and were against any agreement that would compromise these benefits (Bellmann and Hepburn 2009: 2). As Stancanelli (2009: 26) indicates: "The purpose was to neutralize their opposition to the change in policies by guaranteeing their historical amount of receipts. The MacSharry Reform in the EU, approved late in the round, was a clear demonstration of this". At the same time, as a concession for including agriculture as part of the package, and also for "committing to future reduction of trade-distorting support, developed countries would be allowed to retain subsidies that caused not more than minimal trade distortion, on the basis that these could deliver various kinds of public policy objectives". (Anton 2009: 2).

It is important to note that while at the beginning subsidies were aimed to support small farmers and enhance national food security, according to Cline

(as cited in La Vina 2006: 7) "the distribution of support is uneven and is significantly skewed in favour of larger farmers and agribusiness with capital-intensive, highly mechanized operations on vast commercial estates rather than small farmers considered poor by developed country standards". The impacts of subsidies were also being felt worldwide, on economic and environmental grounds, more on this ahead.

1.2.2 Agreement on Agriculture (AoA)

As a result of the Uruguay Round of trade negotiations, the principles for trade in goods, services and intellectual property, were stated on the following agreements, respectively: GATT (General Agreement on Tariffs and Trade), GATS (General Agreement on Trade in Services), TRIPS (Trade Related- Aspects of Intellectual Property Rights) (WTO. 2013e). The Agreement on Agriculture was developed within the GATT. Some critics consider that results obtained during the Uruguay Round regarding the reduction of trade-distorting subsidies on agriculture was not the expected by developing countries (Anton 2009: 14). However, introducing the topic for consideration was at least a step in the right direction. On the other hand, the introduction of TRIPS into WTO was a major achievement on behalf of developed countries (Zerbe 2002: 302).

The objective of the AoA is to "reform trade in the sector and to make polices more market-oriented" (WTO. 2013e). The areas covered include: market access, domestic support and export subsidies. The following section will tackle domestic support, as the concept addresses the main provisions for agricultural subsidies under WTO.

1.2.2.1 Domestic support

WTO aims to reduce domestic support that has trade-distorting effects, but tries to leave some level of flexibility to its members in order to determine the domestic agricultural policies, according to their needs and national circumstances (WTO. 2013a).

The Agreement on Agriculture includes the following types of domestic support (due to the relevance for this research, Green Box will be addressed in more depth):

Table 1. Agricultural subsidies and WTO box system

Domestic Support		
	Amber	Trade distorting domestic support. Known as 'Aggregate Measure of Support' (AMS). Members have to reduce Amber box subsidies. More details on Part IV, Article 6.1 of Agreement on Agriculture (AoA)
	Blue	Trade-distorting domestic support, but to a lesser degree than the Amber Box. Known as 'production limiting' programmes. Production is necessary to benefit from payments, but payment is not linked to quantity. There are no reduction commitments. More details on Part IV, Article 6.5 of AoA
	Green	Non- or minimal distorting domestic support. Direct (decoupled) and other payments to farmers, including those related to the protection of the environment, government service programmes, and other 'indirect' subsidies. Type of payments exempted from reduction commitments (green box) are categorized under Annex 2 of AoA.
	De minimis	Support that is permitted as long as it does not exceed 5% of Member's total value of the product or of total agricultural production. 10% in the case of developing countries. More details on Part IV, Article 6.4 of AoA.

Source: Self, based on (Khor 2009: 29-30, WTO. 2013a, WTO 1994)

Green box subsidies, in order to be considered as such and consequently be exempted from reduction commitments, should comply with the following criteria (WTO 1994: Annex 2.1):

> "(a) the support in question shall be provided through a publicly-funded government programme (including government revenue foregone) not involving transfers from consumers; and,
>
> (b) the support in question shall not have the effect of providing price support to producers;" [2]

Additionally, there are some "policy specific criteria" that are exempted from reduction commitments and are part of the Green Box. This includes, among others (WTO 1994: Annex 2):

- Direct payments to producers/ Decoupled income support, including income forgone: under predetermined criteria, not "related to, or

[2] In accordance with Wiggerthale (2004: 23) 'A transfer from the consumers would be given, if the costs of financing the programme were funded by higher market prices. However, financing by public authorities means that tax payers bear the costs, not consumers'.

based on the type or volume or factors of production", no production is necessary, etc.

- Relief from natural disasters, from income forgone or loss of factors of production due to a natural disaster
- Payments under environmental programmes: as long as they are part of a "government environmental or conservation programme", and fulfill certain criteria as required in the programme. Payment is limited to additional costs or income forgone related to the implementation of the programme.

It is important to note that Green box subsidies are not subject to any reduction commitment, nor are they subject to any financial limitation under WTO. As mentioned earlier, members should reduce their Amber Box domestic support, however, there is enough flexibility for transferring payments from this box to the green one, as long as they fulfil with Green Box criteria (Anton 2009:139). Some developing countries have serious concerns regarding this flexibility. More on this in Chapter 3 (Cuba et al. 2000: 3).

1.2.3 Current debates and Doha Development Round

The "Doha Development Round" of trade negotiations was launched on 2001, at the Fourth Ministerial Conference in Doha, Qatar. It stated that "the needs and interests of developing countries are at the heart of the Doha Work Programme" (WTO 2001: paragraph 4). Developing countries were of the view that "many of the existing WTO agreements are biased against their interests, and that this situation must be rectified in order to attain a more balanced multilateral trading system" (Khor 2006: 4659). An example of this was the TRIPS agreement, which they considered to be costly and affected technology development (Ibid). As for agriculture, they argued that the "Agriculture Agreement has allowed the developed countries to maintain their high protection in this sector (through high domestic support and tariffs) while requiring the developing countries to liberalise their food imports, at the expense of food security and farmers' livelihoods" (Khor 2006: 4659).

The Doha Development Round has not been able to conclude, since there are major areas of disagreement and conflict, being agriculture the most contentious (Brunner and Huyton 2009: 468, Wise 2005: 2). According to La Vina (2006: 1, 2), in order to move the trade negotiations forward, some progress needs to be made on agriculture, in particular, reforming the subsidies in the Northern countries.

The situation is highly conflictive as agricultural subsidies "have remained high and have not been substantially modified for the past two decades" (Anderson and Martin as cited in La Vina et al. 2006: 7), despite the fact that in developed countries agriculture's share of GDP is small, as well as the amount of people earning a living as farmers. According to an OECD report on Agricultural Policies in OECD countries (2009: 5), during 2008, these countries paid approximately US$265 billion to farmers as "producer support". It was noted in the same report that "once world prices begin to decline from extremely high levels, border protection and price-related domestic support

measures once again become active" (Ibid). This implies that any reduction in domestic support is only circumstantial and not structural in essence.

Amounts paid on subsidies are striking if also compared to those disbursed as ODA (Official Development Assistance) to developing countries. During 2008, according to OECD data (OECD. 2013b), US$95 billion was paid by OECD countries as ODA (US$102 billion during 2011)[3]. These amounts are below the long lasting international aid commitment of developed countries to contribute with 0.7% of their GNI (Gross National Income) as ODA to developing countries (OECD. 2013c). As can be observed, ODA disbursements are almost tripled by those paid in subsidies. Actually, one claim has been that while almost 3 billion people live with less than US$2 a day, European cows are subsidized with much more than that per day (Wise 2005: 3).

In the past 10-12 years, there has been a shift in the way developed countries provide their domestic support. For example, it is less tight to output or production. At the same time, according to OECD, "Support is becoming increasingly conditioned by requirements on producers to follow certain practices in pursuit of broader objectives, such as preservation of the environment, animal welfare or food safety" (OECD 2009: 10-11).

The reduction of trade-distorting subsidies after the Uruguay Round concluded can be qualified as a positive step, however, some critics consider that these results lack the ambition as desired by developing countries (Bellmann and Hepburn 2009: 2). Actually, according to OECD, most distorting trade policies prevail in many OECD countries, and some payments remain highly linked ("coupled") to the specific commodity (such as rice and sugar) (OECD 2009: 10, 12). According to Khor (2009: 29), as a total, domestic support has actually remained high, and even more than before the creation of WTO. This due to the fact that during the years, the amount of allowed subsidies (under Green Box criteria) has increased. As a result, countries are transferring subsidies "from amber box to blue box, and from amber and blue box to green box" (Bellmann and Hepburn 2009: 3). There has been an increase in the amounts reported under the Green Box since the creation of the box system during the Uruguay Round (Bellmann and Hepburn 2009: 3, Khor 2009: 29). This is also called box shifting and is defined by Nassar et al. as when "countries shift programmes from the blue box or the amber box to the green box, without fully complying with the concept of no or minimally trade-distorting effects" (Nassar et al. 2009: 331). One example was the case of the USA and cotton, which was part of a dispute settlement case. The USA was accused by Brazil of classifying some subsidies under the Green Box, which were actually trade-distorting (Amber) (Khor 2009: 30). Subsidized cotton had an important effect on reducing world cotton prices, and negatively affected developing countries´ incomes (La Vina et al. 2006: 8).

[3] The year 2008 was selected in order to compare data with subsidies paid during 2008 (US$265 billion), as discussed in the preceding paragraph. ODA amounts include those reported by DAC-Members and non-Members. DAC stands for: Development Assistance Committee of OECD, integrated by 26 of the 34 members of OECD. The amounts do not include Multilateral Agencies, which are reported to have disbursed US$32.7 billion in 2008, and 39.1 billion in 2011 (OECD. 2013b)

The topic of box-shifting remains highly controversial. The question of whether Green Box subsidies are in reality non-trade distorting is highly relevant, not only in technical terms (fulfilment of criteria), but also considering that in the end, farmers continue to obtain an income, which is now justified on different grounds and sources, which allows them to continue producing (Khor 2009: 30). This payment is an important component of their income support (Bhaskar and Beghin 2009: 1).

The following section will briefly address what the impacts of agricultural subsidies are, not only on the economy, but also on the environment.

1.2.4 Effects or impacts of agricultural subsidies

The use of subsidies in agriculture has been highly questioned due to its effects on both, the economy and the environment. According to Mayrand et al (2003: 6) "Economic theory predicts that agricultural subsidies will increase output, depress world prices, disrupt international markets, and reduce economic efficiency".

In many cases, agricultural subsidies represent an important part of farmers' incomes. As such, they have greatly influenced land-use decisions; this has been most evident in the EU and the USA (Bellmann and Hepburn 2009: 8).

La Vina et al. (2006) summarize the impacts of subsidies in developed and developing countries, and its effects on the environment and poverty/ livelihoods as follows:

Table 2. Effects of subsidies on the environment and poverty/livelihoods in developed and developing countries

	Developed countries	Developing countries
Environment	• Land degradation • Water pollution • Decreased agro-diversity	• Expansion of area under production to marginal lands to compensate for low prices • Difficulty investing in sustainable practices • Poverty exacerbated by low producer prices driving exploitation of natural resources
Poverty/ Livelihoods	• Majority of government subsidies to biggest farms rather than small family farms • Higher consumer prices for 'protected' commodities • Government payments strain budget	• Low farmer incomes due to low world prices for agricultural goods • Reduced national export earnings • Minimal investment in rural infrastructure • Cheaper food for consumers due to subsidized imports

Source: LA Vina et al. (2006: 3)

Many scholars agree that subsidies in the Northern countries, contribute to exacerbate poverty in developing countries (WTO, Diao et al., Stuart and Fanjul, Vitalis, Cline, as cited in La Vina et al. 2006: 3). When agricultural products which are being subsidized in Northern countries are also farmed in developing countries, the effects on poverty are greater, since farmers of the

latter cannot compete with subsidized crops in foreign markets, and in some cases, even nationally, as cheaper crops are imported, sometimes even below production costs (La Vina et al. 2006: 8, Khor 2009: 30). This might seem very positive for consumers, since they are able to acquire cheaper products (La Vina et al. 2006: 8), but this price does not represent their real cost and have the potential to undermine national food security as dependence on foreign crops is increased.

As mentioned earlier, subsidies in the Northern countries have "artificially reduced global prices for agriculture products and led to overproduction, and thereby set back the development of agriculture in developing countries" (UNEP 2013: 61). In the long run, farmers in developing countries see their incomes shrink, poverty accentuates, and agriculture development is undermined (WTO as cited in La Vina et al. 2006: 8).

As for poverty and livelihood concerns in developed countries, as mentioned on section 1.2.1, most of subsidies are going to bigger farmers rather than to smaller ones (La Vina 2006: 7, Steenblik. 2013). This can also be observed in the current Common Agricultural Policy of the EU, in Chapter 2, section 2.4 of this research.

In some occasions, consumers in developed countries are also affected. In the case of market price support subsidies[4], they tend to pay a higher price for a certain commodity than world prices, due to internal protectionism measures to local farmers (Mayrand et al. 2003: 6).

Subsidies that are coupled to production can exacerbate environmental problems as farmers are paid for the quantity they produce, regardless if they are able to sell that product in the markets. They make whatever is necessary to enhance production, even beyond ecosystems capacity, and increase the use of agrochemicals (Mayrand et al. as cited in La Vina 2006: 9), which leads to enhancing land degradation, water pollution, etc. Different international environmental agreements or assessments call for a reduction of agricultural subsidies. See for example Aichi Target 3, within the Convention on Biological Diversity (CBD. 2013: Target 3).

The MEA also calls for the: "Removal of production subsidies that have adverse economic, social, and environmental effects" (Millennium Ecosystem Assessment. 2005: 21). Overproduction of crops resulting from subsidies also enhances excessive use of water, fertilizers and pesticides (Millennium Ecosystem Assessment. 2005: 95), as well as land degradation and loss of biological diversity (Mayrand et al. 2003: 33).

Besides the impact on poverty, environmental effects can also be felt in developing countries, as subsidies in the North can influence farming practices. Farmers may tend to produce more "in the hopes that this will compensate, at least partially, for lower prices" (Audley as cited in La Vina et al. 2006: 9). As a consequence, they may intensify production and exploit natural resources beyond ecosystems capacity.

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[4] Market Price Support: 'Transfers of money to producers through the market as a result of policies that raise prices artificially […] may derive from a domestic price interventions (for example, a minimum-price policy), and is usually supported by foreign trade barriers such as a tariff or quantitative restriction on imports' (Steenblik. 2013).

1.3. Concluding remarks on PES and agricultural subsidies

PES and agriculture subsidies have been addressed in this chapter. While both of them seem to be addressing different policy instruments, they are highly related, as the merging of the two, among other topics, is creating some degree of controversy in the international trading system. Developed countries have been increasingly reporting to WTO a series of subsidies under the Green Box (non-trade distorting), and decreasing the amounts reported under the Amber Box (trade-distorting). In compliance with WTO rules, they are introducing several reforms to "decouple" payments, such as agri-environment payments. These payments recognize that agriculture can enhance positive externalities for the environment and human well-being. However, the amount of the payment, the link between the payment and the provision of ES and public goods, and finally, its inclusion in the Green Box as non-trade distorting, can become highly questionable. In order to assess this in more depth, the following Chapter will focus on the EU's Common Agricultural Policy, its background and provisions.

Chapter 2 **Common Agricultural Policy of the European Union**

2.1 Background

The Common Agricultural Policy (CAP) of the EU was introduced in 1957, through the Treaty of Rome, which founded the European Economic Community, and took effect in 1958. It has undergone several amendments throughout the years. The primary aim was to increase agricultural production, in order to ensure food security and food supply at an affordable price (Gay and et al. 2005: 4). Others like Moussis (2007: 435) argues that self-sufficiency in basic agricultural products "is vital, not only for the wellbeing of its citizens, but also for the political independence of its Member States." In this regard, according to him, for the EU the relevance of agriculture to social, political and economic objectives goes beyond its limited share of GDP. Article 39 of the Treaty states that CAP specific objectives were:

> "(a) to increase agricultural productivity by promoting technical progress and ensuring the optimum use of the factors of production, in particular labour;
>
> (b) to ensure a fair standard of living for farmers;
>
> (c) to stabilise markets;
>
> (d) to assure the availability of supplies;
>
> (e) to ensure reasonable prices for consumers." (European Parliament. 2013b, European Economic Community 1957: art. 39)

This was implemented through subsidies and secured pricing to farmers (minimum market prices for certain commodities), all of which increased production (Gay, et al. 2005: 4).

2.2. Evolution and reform of the CAP

During the 1980s, as a consequence of this policy, the EU was facing constant surpluses of its main farm commodities. This surplus was allocated in world markets assisted through export subsidies, stored or thrown away. Besides having a high financial cost, these subsidies were impacting other countries by distorting world markets, and they were considered to have negative impacts on the environment (Gay and et al. 2005: 4).

In 1992, the CAP was subject to the MacSharry Reforms (former European Commissioner for Agriculture). The main changes pertained to the introduction of "payments on land sown to cereals and set aside under the scheme, and a complex array of headage payments on the number of beef cattle kept" (Swinbank 2009: 71). This was a politically acceptable way to reduce interven-

tion prices for cereals and beef, while continuing to compensate farmers, in this case, for the income forgone. (Swinbank 2009: 71).

Later, the Agenda 2000 reforms designated rural development as the second pillar of the CAP (while Pillar 1 was: price and income support) (Swinbank and Daugbjerg 2006: 52). In doing so, it recognized the multifunctional role of agriculture[5] (Swinbank 2009: 71).

The 2003 CAP reform represents a major step in the attempt to move the European agriculture toward a greater "market orientation", and also to strengthen environmental protection. Its main measures were: decoupling, mandatory cross-compliance and modulation (Commission of the European Communities., 2006: 4). It introduced a major shift from production support to decoupled support (delinking production from payments), turning these payments into Green Box subsidies (non-trade distorting, according to WTO definition) (Brunner and Huyton 2009: 468).

Direct payments under Pillar 1 included the Single Payment Scheme and the Single Areas Payment Scheme (SAPS)[6]. The reform also included mandatory compliance with certain environmental, animal welfare, food safety and occupational standards. Farmers were also expected to maintain their farmland in Good Agricultural and Environmental Conditions (GAEC). These standards are known as the "compulsory cross compliance" requirements (Gay and et al. 2005: 4, 22). It also introduced measures for modulation, that is, the possibility to transfer resources from Pillar 1- direct payments- to Pillar 2- rural development- (Gay and et al. 2005: 38).

On 2007, the European Agricultural Guidance and Guarantee Fund (EAGGF), which was the financial fund for the CAP, was replaced by the following two funds (WTO 2013d: 114):

1- European Agricultural Guarantee Fund (EAGF), which addresses with Pillar 1 (market measures, direct payments, including SPS and SAPS mentioned above)

[5] Role of agriculture in enhancing food security, cultural and historic heritage values, environmental quality, etc. (Cahill 2001: 36)

[6] For the Single Payment Scheme, direct payments to farmers have been calculated based on a reference period (usually payments received during 2000-2002). This calculation can be done on an individual reference amount, or a regional reference amount or a combination of the two (hybrid). The regional reference model is calculated based on payments average received by a state or region (this implies that some farmers can benefit from more resources than they were receiving in a previous period). In Member States that became part of the EU in 2004 and 2007 (Bulgaria and Romania), the Single Area Payment Scheme -SAPS -, except for Malta and Slovenia, was applied as a transitional model, in order to materialize the direct payments. In this case, eligible hectares received a flat rate area payment. (WTO 2013d: 114, Commission of the European Communities 2007: 3, European Commission 2012b: 2-3)

2- European Agricultural Fund for Rural Development (EAFRD), which funds Pillar 2 of the CAP (rural development, environmental programmes, etc.)

During the 2003 CAP reform, some matters were left out for future assessment or discussion. It was agreed that they would be reviewed in 2007-08. This was known as the Health Check 2008. Main changes included a simplification of the SPS, further decoupling and modulation, and the inclusion within the rural development pillar of programmes addressing climate change, water and biodiversity protection (Swinbank 2009:73, Commission of the European Communities 2007: 3).

On 2010, the EC launched a Communication (The CAP towards 2020) with a list of ideas for the future of the CAP after 2013, when the current financial cycle will end. On June 2013, an agreement was reached within the Parliament, the Council and the Commission. However, there are some pending issues that will need to be further agreed by the end of 2013 (OECD 2013a: 137). Main considerations include (European Commission. 2013g):

- Fairer distribution of direct payments among Member States, regions and farmers, where "historical reference" levels are no longer the criteria for payments.
- Increase support to farmers in order to be more competitive, while enhancing the market approach.
- Enhancing a greener CAP, where all rural areas and farmers will have to promote sustainability and assist in addressing climate change. Around 100 billion Euros will be allocated for this in next CAP cycle.
- Increasing the efficiency and transparency of the CAP, while considering the diversity of its Members, including the doubling of resources earmarked for research, innovation and knowledge sharing.

In relation to the third point (greener CAP), the main changes include:

For Pillar 1: Direct payments will have now two components: Basic Payment Scheme-BPS- (70% of Pillar 1 resources, subject to cross-compliance) and Greening payments (30% of Pillar 1 resources, subject to cross-compliance and greening requirements). Farmers will receive, besides the BPS, "a payment per hectare for respecting certain agricultural practices beneficial for the climate and the environment…" (European Commission. 2013e). Farmers payments will be subject to the following measures (European Commission. 2013e, European Parliament. 2013a):

1) maintenance of permanent pasture, on grassland;

2) crop diversification, at least 2 crops for farms larger than 10 hectares, and 3 crops for farms larger than 30 hectares; and

3) ecological focus area, on arable land, for farms larger than 15 hectares, Member States can choose among a set of options (terraces, buffer strips, afforested areas, etc.).

It is important to note that there are several exceptions for complying with the above regarding farm size or geographical conditions.

For Pillar 2: The distribution of measures under each axis and minimum payment requirements for each is eliminated (axis will be explained on next section). Member States are free to choose the measures that best suit them to address the following 6 priorities:

- "Fostering knowledge transfer and innovation;
- Enhancing competitiveness of all types of agriculture and the sustainable management of forests;
- Promoting food chain organisation, including processing and marketing, & risk management;
- Restoring, preserving & enhancing ecosystems;
- Promoting resource efficiency & the transition to a low-carbon economy; and
- Promoting social inclusion, poverty reduction and economic development in rural areas." (European Commission. 2013e)

Under the new CAP, 30% of Pillar 2 resources will have to address measures that tackle land management and climate change. There are several critiques regarding how green the new CAP really is (EEB. 2013).

2.3 Current structure

To date, the CAP consists of two Pillars (Matthews 2010: 1-2):

Pillar 1, payments for market and income support. Basically it includes direct payments to farmers (Single Payment Scheme), decoupled from prices and production, or partially decoupled, conditioned to mandatory cross-compliance requirements. It also encompasses "market measures", such as export subsidies, aid for storage and intervention buying in agricultural markets[7] (Gay and et al. 2005: 6, Brunner and Huyton 2009: 474), and other payments related to article 68 of Council Regulation (EC) No. 73/2009. It is fully financed by the EU budget through the European Agricultural Guarantee Fund (EAGF). Pillar 1 considerations apply across the EU. Payments are made annually.

[7] Intervention buying: 'When market prices for certain agricultural products fall below a predetermined level, the public authorities of the member states intervene to stabilize the market by purchasing surplus supplies, which may then be stored until the market price increases and then returned to the market for sale, exported to a third country or disposed of in an alternative way'. (European Commission. 2013c)

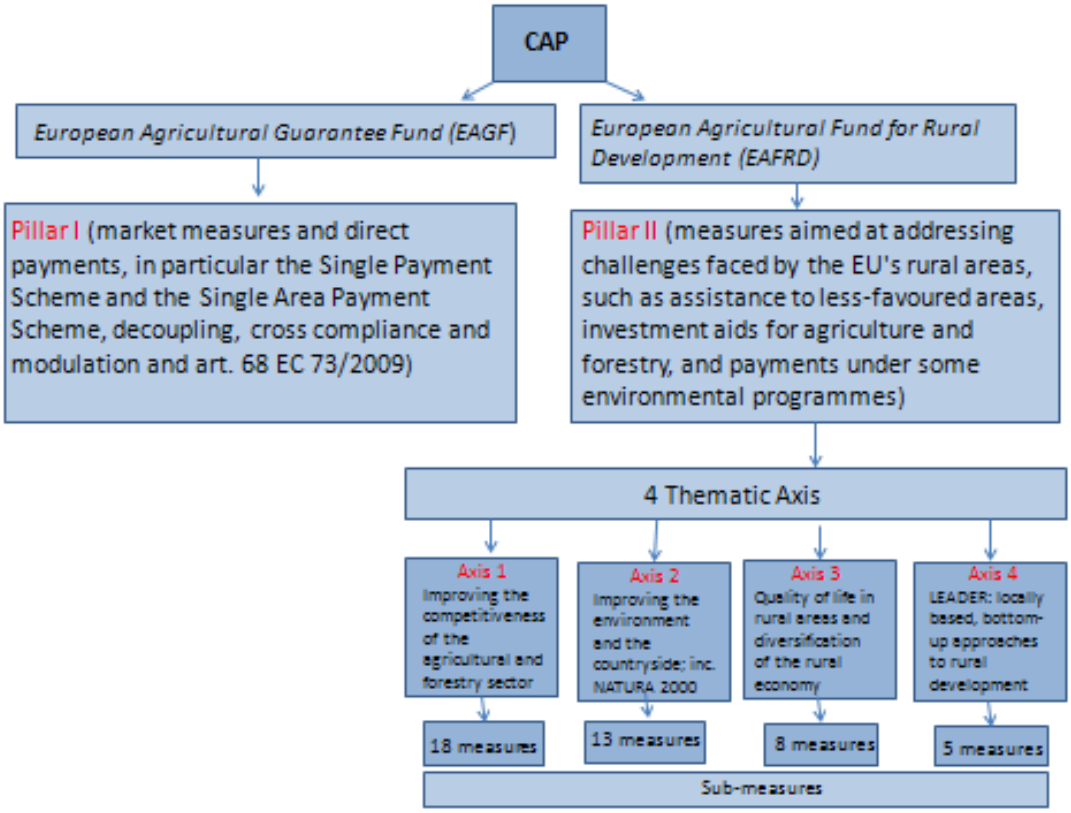
Pillar 2, deals with the promotion of local and rural development, and enhancement of the structural and environmental management of agricultural activities. It is co-financed by Member States and the European Agricultural Fund for Rural Development (EAFRD). It entails multi-annual commitments. There is a set of measures (44) where Member States have the flexibility to choose what best suits them, and incorporate them into their Rural Development Plans (except for the agri-environment measures, since all Plans have to include at least some) (Gay and et al. 2005: 11). However, each Member State determines its own sub-measures, and participation by farmers is on a voluntary basis. See also Council Regulation (EC) No. 1698/2005.

According to the Community Strategic Guidelines for Rural Development (applicable between 2007-2013), Pillar 2 of the CAP is implemented through a set of measures that fall within 4 axes (European Council 2006: 22). In brackets the minimum mandatory spending:

- axis 1, on "improving the competitiveness of the agricultural and forestry sector" (10%);
- axis 2, on "improving the environment and the countryside" (25%);
- axis 3, on the "quality of life in rural areas and diversification of the rural economy" (10%);
- axis 4, on "Leader" experience, that is, the inclusion of innovative governance through locally based, bottom up approaches to rural development (5%).

Based on the above, the CAP can currently be visualized as follows:

Figure 1. EU CAP structure, 2013



Source: Self, based on relevant legislation

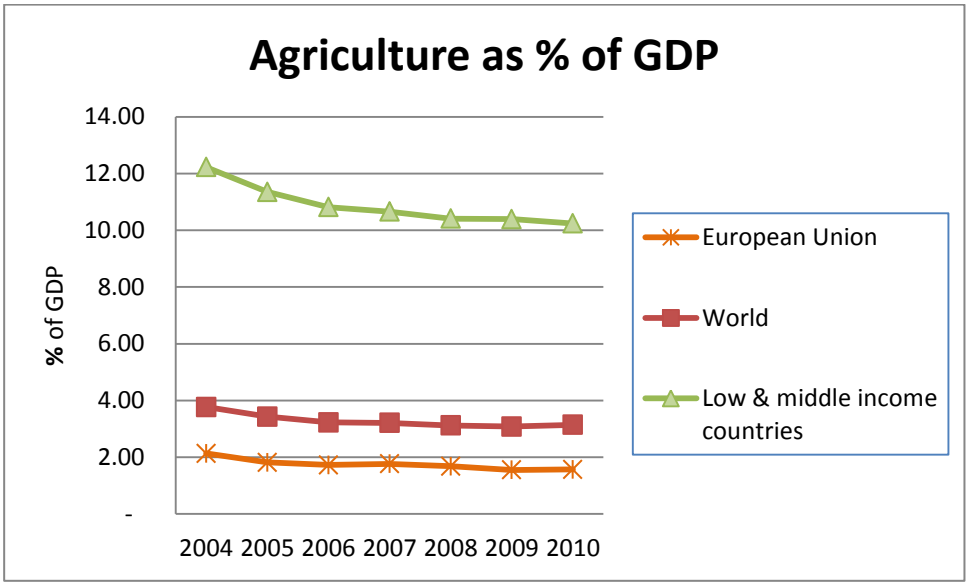
2.4 CAP in figures

In this subsection, some figures will be presented. They are key for understanding the composition and distribution of the CAP within the EU, as well as in relation to the WTO's reporting of domestic support, which will entail a combination of Pillar 1 and 2 payments.

Generalities of Agriculture

According to data obtained from World Bank Development indicators (World Bank. 2013) in the case of the EU, agriculture as a share of GDP represents less than 2%. As can be observed from Figure 2, it is below the world average, and much farther from low and middle income countries:

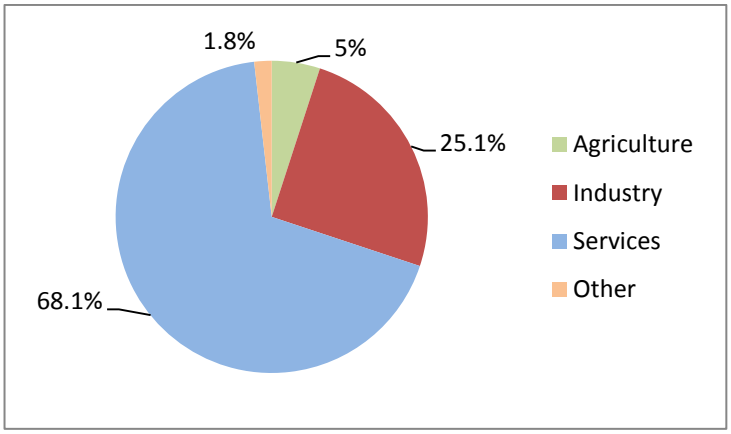
Figure 2. Agriculture as a percentage of GDP



Source: Self, based on World DataBank, World Development Indicators (Agriculture, value added (% of GDP))

Approximately 5% of EU total employed population worked on agriculture during 2011 (approximately 11 million people) (Commission Directorate-General for Agriculture and Rural Development 2012: 132-133).

Figure 3. Sectors as % of total employment in the EU



Source: Self, based on Statistical data prepared by the Commission Directorate-General for Agriculture and Rural Development (2012: 133-134).

The CAP

From the total 2011 EU budget (138 billion Euros), approximately 41% (57 billion Euros) was allocated to the agriculture and rural development component (European Parliament 2011: II 231), from which, 75% and 25% approximately are allocated to Pillar 1 and 2, respectively.

Table 3. CAP expenditure 2011

	Measures	2011 1000 EUR	As % of CAP
Pillar 1	**Direct Payments**	**40,178,029.6**	75%
	Decoupled direct aids	36,830,388.0	
	Other direct aids	3,347,044.4	
	Additional amounts of aid	597.2	
	Market measures *(fruit and vegetables, wine sector, food programmes, etc)*	**3,532,059.5**	
Pillar 2	**Rural development**	**14,436,116.5**	25%
	TOTAL	**58,146,205.6**	

Source: Adapted from on EU's statistical data and factsheets (European Commission. 2013a: 6)

During 2011, according to the European Commission (2013a: 7), from the total expenditure indicated on Table 3, the three main recipients of CAP resources were: France (with almost €10 billion, or 17.1% of the total), Spain (€7 billion, or 12.3%), followed by Germany (€6.9 billion, or 12%). A detailed distribution by Member State and measure can be observed on Appendix 1. According to an interview held with a representative from the Dutch Ministry of Economic Affairs (respondent 1, personal communication, September 4th, 2013.) the allocation of resources among countries is the result of intense negotiations and concessions that go beyond the CAP budget. As can also be observed on Appendix 1, countries such as Poland or Romania, which became part of the EU in more recent years, receive important amounts under Rural Development. According to the same source, this responds to a strategic decision to develop their agricultural sectors, which lag behind other EU countries, but also, in order to avoid abandonment of their lands and migration to the Western Europe.

Some unequal distribution of CAP payments can be observed among farmers. For example, during 2011, in the case of direct payments, 37.4% of beneficiaries received 1.8% of the value of payments (ranging between 0 and 500 Euros per beneficiary), while 4.8% of beneficiaries received 27.9% of the value of payments (ranging between 20,000-50,000 Euros per beneficiary) (European Commission 2013a: 8). See Appendix 2 for a detailed table indicating the ranges, number of beneficiaries and payments.

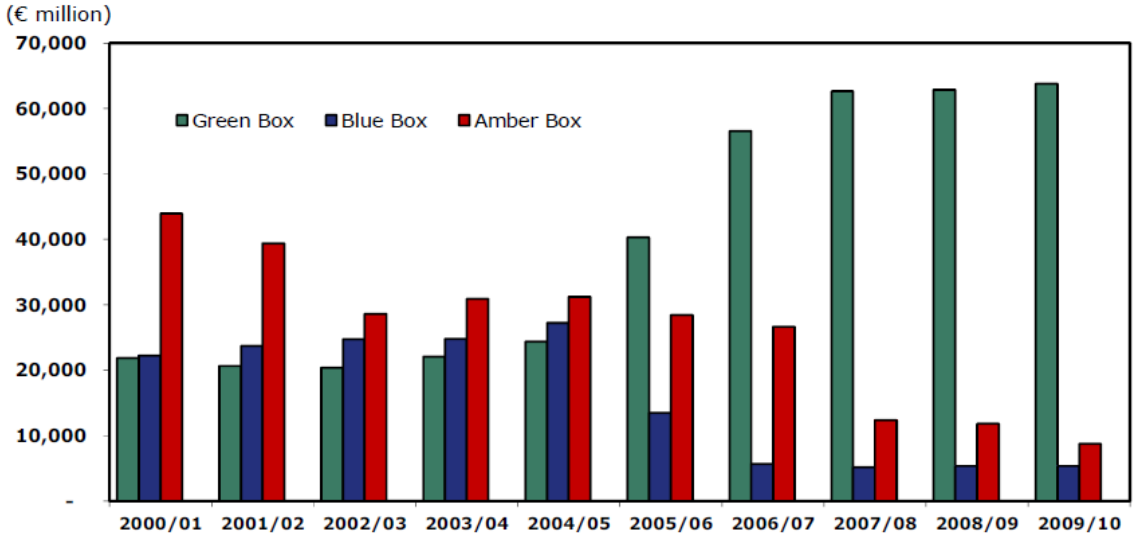
As for EAFRD or Pillar 2 allocations, as can be observed on Appendix 3, most resources are allocated under Axis 2 (Improving the environment and the countryside), with 44.6% of resources available during 2007-2013 period under the EAFRD fund. Within Axis 2, 22,5 billion Euros (or 52% of Axis 2 resources) are expected to be spent on Agri-environment payments (measure 214) during that same period (European Commission. 2012a: 13).

Domestic support and WTO

After analysing the CAP, its generalities and different components and distribution, this subsection will now present European subsidies composition from a WTO perspective. It is important to note that domestic support under WTO does not include what is paid through the EAFRD and EAGF only (European Union 2011: 3-5). For rural development (Pillar 2), in addition to the EAFRD, Member States may allocate additional resources (WTO 2013d: 115).

According to reports prepared by WTO Secretariat, based on notifications provided by the EC, the distribution and tendency of the EU's reported domestic support during 2000-2010 can be visualized as follows:

Figure 4. Domestic support in the EU, 2000/01-2009/10



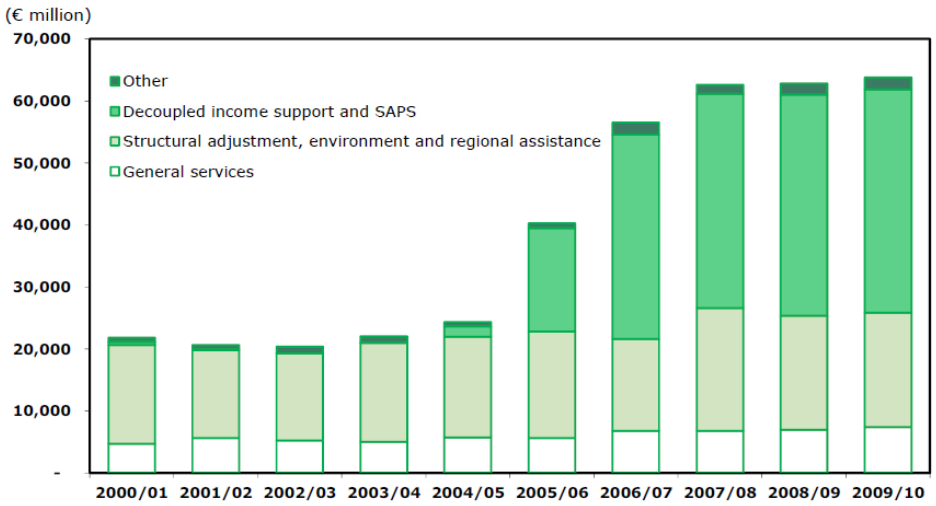
Note: The chart does not include *de minimis* support.

Source: WTO (2013d: 120)

As can be observed from the above chart, Green Box subsidies are by far the largest amount reported by the EU as regards to domestic support. From 2000 till 2010, Green Box subsidies have increased substantially, while Amber and Blue Box subsidies have diminished in important quantities. This has been an attempt on behalf of the EU to try to comply with WTO's rules on domestic support through the several reforms that the CAP underwent.

Within the Green Box support, the share of payments are distributed as follows:

Figure 5. Green Box support reported by the EU, 2000/01-2009/10



Source: WTO (2013d: 120)

While decoupled income support and SAPS represent the largest amount, structural adjustment[8], environment[9] and regional assistance[10] programmes have an important role within the total component.

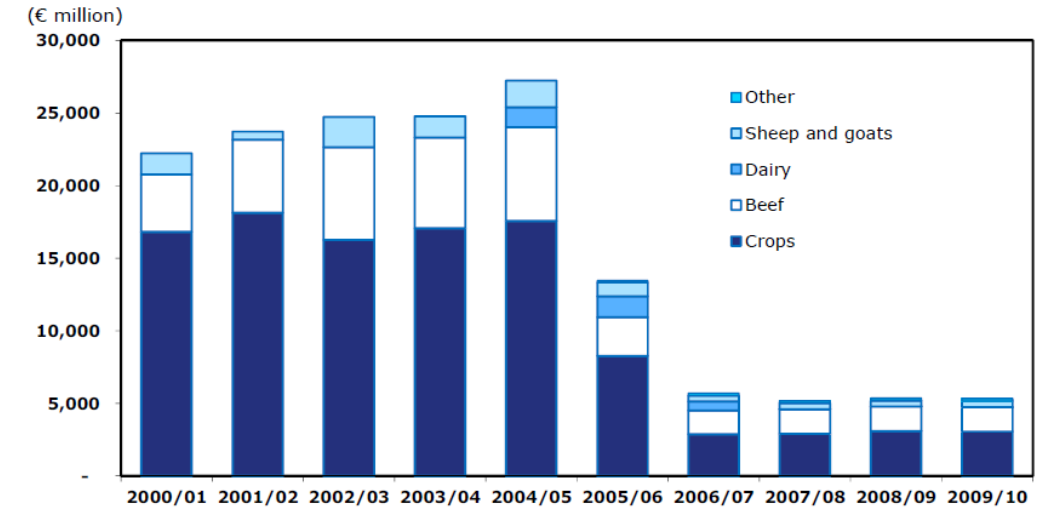
As for Blue Box subsidies, an important reduction can be observed after 2004. Most of the payments in recent years relate firstly to crops, and secondly, to beef cattle (European Union 2011: 6, WTO 2013d: 120).

[8] Structural Adjustment: retirement programmes and "Aid for farm modernisation; purchase of machinery, equipment, animals, buildings and plantations; aid for young farmers" (European Union 2011: 4-5), among other items.

[9] Environment programmes: "Protection of the environment and preservation of the countryside, aid for environmentally sensitive areas; support and protection of organic production by creating conditions of fair competition; aid for forestry measures in agriculture; conservation and improvement of rural heritage" (European Union 2011: 5)

[10] Regional programmes: "Specific measures for the benefit of certain disadvantaged areas (French overseas departments, Azores, Madeira, Canary Islands, Aegean Islands), other outermost regions, less-favoured areas (LFA) and mountainous areas" (European Union 2011: 5).

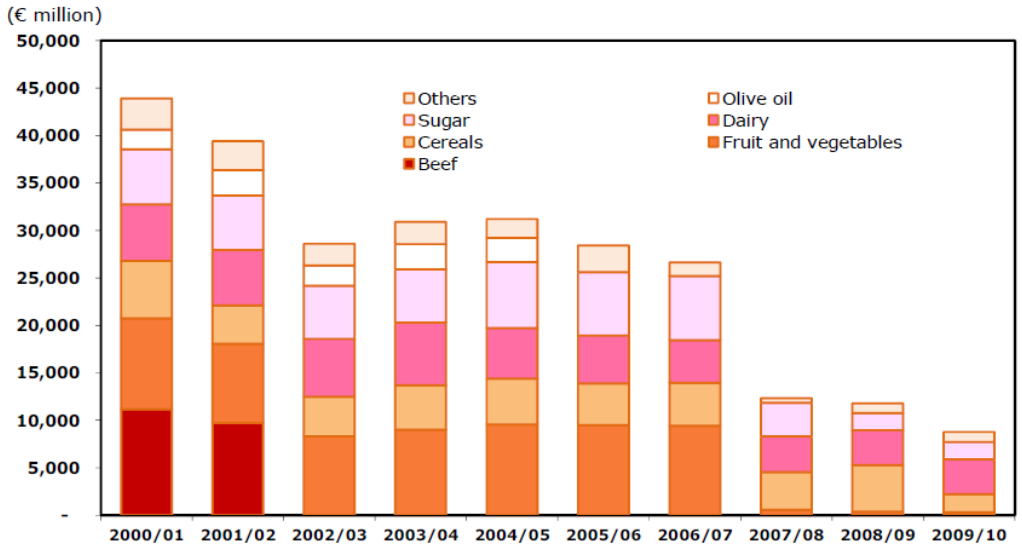
Figure 6. Blue Box support reported by the European Union, 2000/01-2009/10



Source: WTO (2013d: 121)

Finally, Amber Box subsidies are shown below. As seen in the Blue Box as well, the amount has decreased significantly in the last years. Most of its support goes to dairy and cereals.

Figure 7. Amber Box support reported by the European Union, 2000/01-2009/10



Note: The chart does not include *de minimis* support.

Source: WTO (2013d: 121)

2.5 Environmental considerations into the CAP

Taking into account that more than half of the EU's territory is farmed or covered by forest, agriculture is considered to have an important "role in the

territorial, economic and social cohesion of the European Union and in protecting the environment" (Massot. 2013: 1). Farming and nature have interacted with each other for centuries, creating different sets of landscapes and habitats, which have also incentivized the development of enterprises, tourism, etc. in those areas (European Commission. 2013b). The CAP should contribute then to maintain EU's rural heritage and its further development and also to protect the environment through the fulfilment of certain minimum requirements or the promotion of environmentally friendly agricultural practices (Ibid). In this regard, environment is considered within the CAP in both of its pillars, as will be explained in this section.

Within Pillar 1, in order to receive payments, farmers have to comply with minimum standards relating to the environment; public, animal and plant health; and animal welfare (European Council 2009a: art. 5). This is also known as cross-compliance and a specific list can be identified on Annex II of Council Regulation No 73/2009 ("Statutory management requirements referred to in Articles 4 and 5"). Under Pillar 1, in accordance with article 6, farmers have to maintain agricultural land in good agricultural and environmental condition (GAEC), including land which is no longer being used for planting. There is a framework in Annex III of said regulation, and Member States are expected to develop appropriate requirements (European Council 2009a: art. 6).

There is also a provision on article 68.1.a of Council Regulation (EC) No. 73/2009, which allows for certain payments for relevance to the environment and agriculture. See article 68.2.a.i.

Farmers that are also affected by an "environmental incident", but not related to global events such as climate change or acid rain can receive a compensation. See article 71.1-2 of Council Resolution 73/2009.

In summary, farmers that are to benefit from payments under Pillar 1 should be respectful of Annex II and III provisions of Council Resolution 73/2009, cross-compliance and GAEC, respectively. See Appendix 6.

As explained earlier, Pillar 2 aims to support and develop the rural sector, while enhancing the provision of public services, and the development of income and employment opportunities, in observance of culture, environment and rural heritage (Massot. 2013: 1). The need to "deliver win-win environmental services" is also recognized (European Council 2006: section 2.4).

Due to its direct environmental component, which is of key relevance to this research, Axis 2 (improving the environment and the countryside) will be considered in more depth.

Axis 2: Improving the environment and the country side

According to EC decisions, resources allocated to this Axis are expected to support the following EU priorities (European Council 2006: Annex. Section 3.2):

1. "Biodiversity and the preservation and development of high nature value farming and forestry systems and traditional agricultural landscapes
2. Water
3. Climate Change"

Some of the actions recommended in this Decision are (Ibid):

- The promotion of environmental services. Farmers can be compensated for going beyond the required standards, for example, providing environmental services that the market by itself will not be able to generate and of relevance to agriculture and forestry (water and soil, for example)
- Preservation of farmed landscape and forests.
- Addressing climate change. In its absorption role (agriculture and forestry), as well as a source of renewable energy.
- Organic farming
- Production of environmental goods

The precise measures under the four Axis can be found in Appendix 4.

Agri-environment payments

Agri-environment payments (measure 214 under Axis 2), which, according to financial plans 2007-2013, are expected to consume approximately 52% of Axis 2 resources, or 23.4% of total Pillar 2 expenses (European Commission. 2012a: 13), are by far the largest budget item under Axis 2, as well as under Pillar 2.

Farmers benefiting from this payment should comply with the same minimum environmental standards as Pillar 1 beneficiaries and GAEC cited previously (European Council 2009b: art. 50.a). According to Regulation (EC) No. 1698/2005, farmers can engage in agri-environment payments schemes on a voluntary basis, and for those commitments that are "going beyond the relevant mandatory standards". These voluntary commitments should be between five and seven years, and will be paid annually. The amount to be paid is determined by the additional costs and income foregone in undertaking these commitments, and in some occasions, transaction costs will also be covered. Farmers should apply at the relevant office within their Member States, in accordance with each country's specific selection criteria. Regulation (EC) 1698/2005, in its preamble paragraph No. 35 states (my emphasis):

> "Agri-environmental payments should continue to play a prominent role in supporting the sustainable development of rural areas and in responding to society's **increasing demand for environmental services**. They should further encourage farmers and other land managers to serve society as a whole by introducing or continuing to apply agricultural production methods compatible with the protection and improvement of the environment, the landscape and its features, natural resources, the soil and genetic diversity. In this context the con-

servation of genetic resources in agriculture should be given specific attention. In accordance with the polluter-pays principle these payments should cover only those commitments going beyond the relevant mandatory standards."

After a careful analysis of the CAP, in particular its environmental component, the following Chapter will address its implications for trade, environment and development.

Chapter 3 **Assessment and Analysis**

This research paper started by providing the necessary theoretical background on subsidies and payment for environmental services. Afterwards, it showed how both of them merge as we analyze the environmental component of the CAP of the EU. Chapter 3 will address the main question of this research paper and address to what extent the environmental incentives within the CAP are functioning as a continuation of subsidized agriculture and evasion of WTO provisions.

This chapter will briefly analyze the effects of the reforms of the CAP and the consequent shift of subsidies from Amber to the Green Box in WTO. While this research paper is not attempting to analyze the Green Box subsidies as a whole, it is important to understand the global context in which the environmental incentives are operating. Afterwards, it will assess the implications on trade of cross-compliance and the Agri-Environment Payments (AEPs), the latter as one of the main measures under Pillar 2 of the CAP. In doing this, the vagueness of the definitions of the Green Box and the power and capacity differentials between countries will be addressed, as this is key in answering the research question.

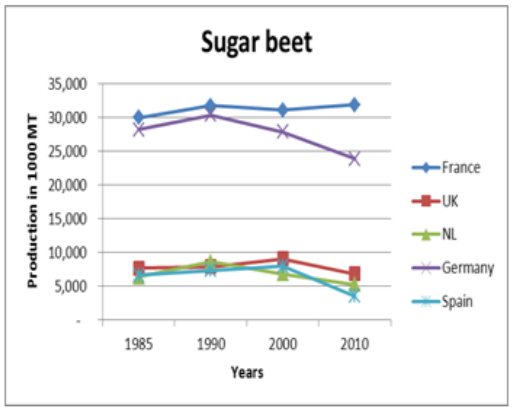
3.1. Analysis of CAP reforms and its impacts on subsidy composition

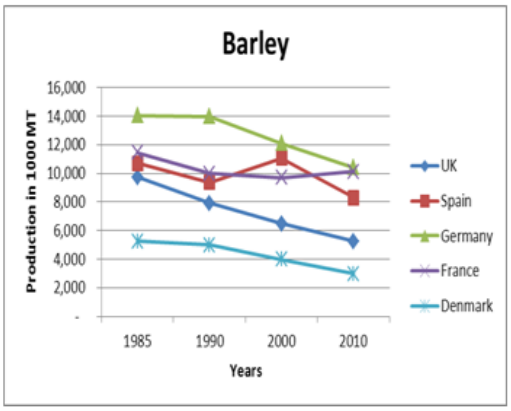
The numerous reforms undergone by the CAP since 1993 have intended to reshape production patterns to a more environmentally sustainable-, socially inclusive- (with its rural development dimension), and economically sufficient way, as it tries to adhere to WTO provisions, which in principle have been agreed by WTO's members. Their effects on the distribution of subsidies within the boxes can be observed in Figure 4, Chapter 2.

In accordance with an exchange maintained with Wageningen University (respondent 2, personal communication, 21 October 2013.) and Dutch Ministry of Economic Affairs (respondent 1, personal communication, 24 October 2013.), the CAP reforms have been effective in reducing agricultural surpluses that characterized production during the 1980s, as highlighted on Chapter 1. According to the representative from the Ministry, this can be observed in the "substantial decrease in the agricultural products that are or can be taken into intervention or in private storage". There are only strategic reserves and the possibility to intervene if market conditions are very severe. He also argued that EU agricultural prices reflect more and more the world's prices. The fact that most subsidies were not linked to production or price support anymore have been in part responsible for this, as the incentive to overproduce and the consequent environmental affectation was not present (Brunner and Huyton 2009: 471). EC Regulation 1782-2003 actually states that the introduction in 2003 of decoupled income support was a "shift from production support to producer support" (European Council 2009a: preamble 24). It is also considered a transition from "environmentally harmful subsidies to greater use of environmental payments" (Brunner and Huyton 2009: 472).

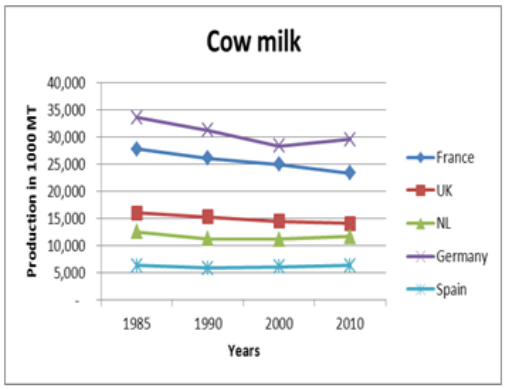
The decrease in surplus is supposed to be accompanied with the correlated reduction in production levels. Based on FAO and Eurostat data, some important agricultural products for the EU were selected to analyze the impact of the subsidy reforms on production levels. Since the EU as a whole has increased its membership since 1990, the production of new Member States can influence total quantities over the years, so to overcome this potential bias, individual country producers of that commodity were selected for this assessment. There are some limitations in this analysis, as there can be other factors/variables influencing production levels besides the change in the subsidy policy (for example, food, economic crisis, variation of world prices, etc).

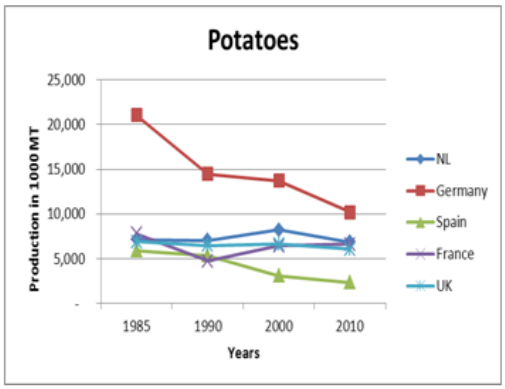
Figure 8. Production levels of selected commodities in EU countries (1985-2010)[11]





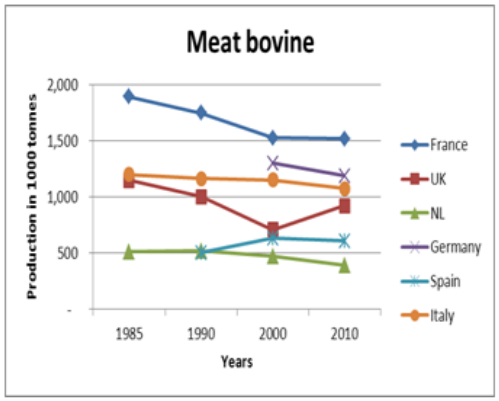
Source: Self, based on FAO data (FAO. 2013) *Source: Self, based on FAO data (FAO. 2013)*



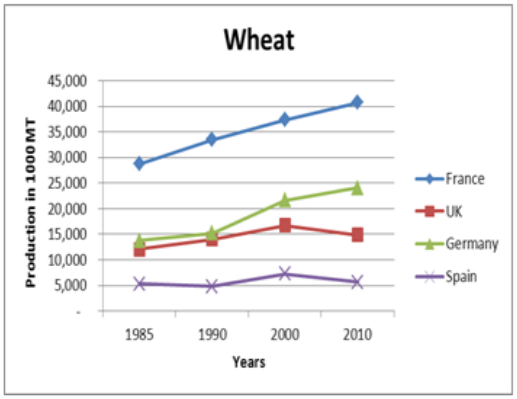


Source: Self, based on FAO data (FAO. 2013) *Source: Self, based on FAO data (FAO. 2013)*

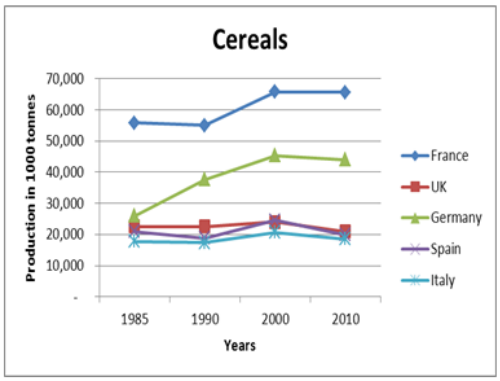
[11] MT in the figures stands for Metric Tones



Source: Self, based on Eurostat data (European Commission. 2013f)



Source: Self, based on FAO data (FAO. 2013)



Source: Self, based on Eurostat data (European Commission. 2013f)

Tables with the specific amounts can be found in Appendix 5. As can be observed from the graphs above, in general terms, quantity produced decreased (or slightly decreased) in 2010 compared to 1990[12] levels, except for cereals, including wheat, which actually increased in all countries. However, at the country specific level, it is interesting to note that for example, France, which is the largest recipient of CAP subsidies, did not decrease production levels, except for meat and cow milk. At the national level countries have the flexibility to decide how best to target their subsidies, and some crops are politically more sensitive than others.

Major changes of the CAP took place on 2003, and entered into force in 2005. Its most important change was the transition from coupled payments to decoupled ones, and the introduction of cross-compliance and Good Agricultural and Environmental Conditions (GAEC) as mandatory within the CAP. As seen in the graphs, their effects on production levels have been in some cases slow. Maybe more time will be necessary to see the final effect. However,

[12] 1990 was selected since at that time subsidies were highly coupled and generated important surpluses in the 1980s. The year 2010 was selected in order to have a 20 year time frame and see its evolution.

it is important to highlight that the Single Payment Schemes (SPS), under the direct payments, were calculated in most EU Member States in relation to historical levels (2000-2001-2002) (Gay and et al. 2005: 31, European Commission 2008: 9). This means that new payments were calculated based on levels of production, which were considered trade-distorting. The implication on the ground was that subsidies continued to be linked or coupled to production[13] (European Commission 2008: 15). The European Council clearly recognizes in its Regulation 1782/2003, preamble 24, that decoupling "will leave the actual amounts paid to farmers **unchanged**, it will significantly increase the effectiveness of the income aid" (my emphasis). To improve this effectiveness, the introduction of the conditionality of the payment to the cross-compliance and GAEC was justified.

The table below (arrows are my emphasis) reflects the change in the distribution of subsidies due to the introduction of the new policy in 2003, which as mentioned entered into force in 2005. It demonstrates the effects of the subsidy distribution at the farm level. This is also coherent with Figure 4 at the EU level. Direct coupled payments which were the majority of subsidies before 2003, shifted to direct decoupled payments in 2006. Rural Development (RD), introduced as the Second Pillar of the CAP in 2000, had an important increase (27%), complementing the subsidies package as a whole. RD also entails the environmental programmes. The table also shows important differences in the amounts paid in the E15 (old Member States) and E10 (new Member States). These differences will also be reduced according to the reforms agreed to in June 2013.

[13] Payments based on historical levels will no longer be used, as was agreed in recent CAP reform process (June 2013).

Table 4. Description of the average subsidies received per farm in the EU[14]

	EU-25			EU-15			EU-10		
	2004	2006	change	2004	2006	change	2004	2006	change
Average subsidies per farm									
Total EU DP	**7 500**	**8 780**	**1 270**	**9 460**	**10 850**	**1 390**	**1 270**	**2 010**	**750**
Coupled	*7 210*	*1 500*	*-5 710*	*9 460*	*1 950*	*-7 520*	*30*	*50*	*20*
Decoupled	*300*	*7 280*	*6 980*	*0*	*8 910*	*8 910*	*1 240*	*1 970*	*730*
National DP	1 130	1 330	200	830	720	-110	2 090	3 320	1 230
RD measures	1 550	1 970	420	1 890	2 120	240	460	1 470	1 000
Other	110	120	10	130	120	-10	20	120	100
Total Subsidies	**10 290**	**12 200**	**1 910**	**12 310**	**13 820**	**1 510**	**3 830**	**6 920**	**3 090**
Share by type of subsidies									
Total EU DP	**73%**	**72%**	**-1%**	**77%**	**79%**	**2%**	**33%**	**29%**	**-4%**
Coupled	*70%*	*12%*	*-58%*	*77%*	*14%*	*-63%*	*1%*	*1%*	*0%*
Decoupled	*3%*	*60%*	*57%*	*0%*	*64%*	*64%*	*32%*	*28%*	*-4%*
National DP	11%	11%	0%	7%	5%	-2%	54%	48%	-6%
RD measures	15%	16%	1%	15%	15%	0%	12%	21%	9%
Other	1%	1%	0%	1%	1%	0%	0%	2%	1%
Total Subsidies	**100%**	**100%**	**0%**	**100%**	**100%**	**0%**	**100%**	**100%**	**0%**

Source: European Commission (2008: 17)

3.2. The environment and the need to legitimize the CAP

First of all, it is important to stress that nowadays there are several critiques that consider the CAP spending as "being unfocused, untargeted and hard to justify on any rational criteria" (Matthews 2010: 6). See also Baylis (2008: 753). There is a need to legitimize this high agricultural spending and to continue to obtain an important share of EU's budget against other priorities.

In this attempt for making the CAP more legitimate and justifying its continuation, the EC stresses that due to the world's increasing population[15] and the need to feed people, "The EU, **through the CAP**, plays a significant role in meeting this challenge. This is why it needs **to continue investing** in its farming sector" (European Commission 2012c: 15) (my emphasis). This argument for the continuation of the CAP, does not address only the EU's food security concerns, but also the world's food security. Some EU farmers also consider that they have a role to play, as was expressed during a consultation on "greening the CAP" held at the European Parliament in 2010: "…a representative of COPA-COGECA, himself an arable farmer, argued that ecological

[14] Data is calculated based on a sample of the FADN: Farm Accountancy Data Network. In this case: 'In terms of direct payments, FADN data represents more than 95% of the EU-25 expenditure[...] as for the holdings, the FADN coverage in terms of beneficiaries is lower (around 50%)' (European Commission 2008: 3)

DP: Direct Payment. RD: Rural Development. E15: EU's old Member States. E10: EU's new Member States. E25: E15+E10.

[15] In accordance with some estimates, the world will have 9.6 billion people by 2050, most of whom will live in developing countries (United Nations. 2013)

focus areas[16] would prevent European farmers from meeting their moral duty to 'feed the world'. They would rather leave the direct payments budget as it is, with few environmental strings attached" (Thurston. 2011). However, making the CAP more green is today a core concern in the reform and legitimation efforts because, as indicated by OECD(2010: 7)"income payments to farmers may appear **more acceptable** to society when they must meet environmental requirements" (my emphasis), and of course, if those payments are conditioned to complying with certain environmental regulations or standards, they will be more effective in generating the desired sustainability behavior.

In the 2003 policy reform, which is supposed to be more strict on environmental grounds, farmers' payments were conditioned to fulfilling the cross-compliance requirements and keeping the farm in good agricultural and environmental conditions (GAEC). As for the cross-compliance standards, there is a list of 18 Statutory Management Requirements (see Appendix 6 for list of Directives). As can be observed from the dates in which they were adopted, all of them existed before 2003, so they did not establish new legal obligations (OECD 2010: 18). In the case of the GAEC, those have to be determined at the national or regional level, taking into account Annex IV of Council Regulation (EC) No. 1782/2003[17]. In accordance with OECD, in practical terms, they were as well, "based or adapted from previously existing standards of 'good farming practice'" (Ibid). This means that farmers did not need to undergo substantial changes to comply with the "new" conditions, unless of course they wanted to engage in more demanding voluntary mechanisms under the AEPs.

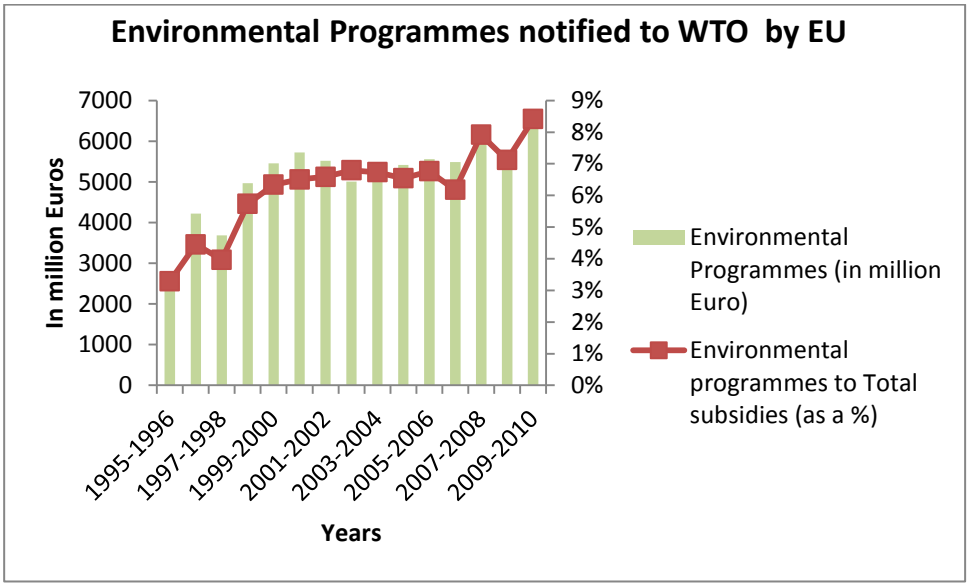
3.3. Agri-environment payments (AEPs)

Within the EU, the environmental programmes, as reported to the WTO, are increasing on a yearly basis and are gaining more importance as a share of total subsidies. AEPs play an important role within them. After the latest CAP reform in June 2013, around 100 billion Euros are expected to further support soil, water quality, biodiversity and climate change considerations for the period 2014-2020 (European Commission. 2013g). Below a graph that illustrates how these programmes have increased since 1995:

[16] See reference to ecological focus areas on Chapter 2, section 2.2.

[17] In 2009, Council Regulation (EC) No. 73/2009 substituted Regulation No. 1782/2003.

Figure 9. Environmental Programmes reported to WTO by the EU, as a percentage of total domestic support



Source: Self, based on EU notifications to the WTO (European Union. 2013)

AEPs have allowed (and incentivized) farmers to exceed current legal obligations and be compensated for this. So, this leads us to the question of whether AEPs can be considered trade-distorting or not.

3.3.1. AEPs' effects on Trade

It is relevant to differentiate between subsidies that have an impact on trade and affect the environment from subsidies that can be more beneficial for the environment but can have an impact on trade. OECD developed a table regarding what type of subsidies are potentially harmful for the environment (see Appendix 7). Nonetheless, this does not mean that their effect on trade can be underestimated, as they can also influence production levels (Diakosavvas 2003: 3).

A great concern then is to what extent agri-environment payments are really "production neutral" (Diakosavvas 2003: 12). So for example, a landscape with cattle, which is supported through AEPs for its cultural value or historic tradition, most likely will influence milk and/or meat production (Glebe 2007: 88-89). Another example is organic farming.

Organic farming was introduced into the CAP since the 1992 reform, and has been gaining more importance (European Commission 2008: ii). AEPs recognize the conversion costs from traditional to organic farming, as well as the maintenance cost of this practice, compensating the additional costs and income foregone for applying organic farming rules. Farmers should commit for at least 5 years, and will receive an annual payment. Member States calculate the rates comparing them to conventional farming methods. This calculation should be certified by an independent body. When the EC reviews the Member State' Rural Development Programmes for approval, it also verifies the existence of this certification. (respondent 3, personal communication, 29 October 2013). See Appendix 8 for an example of amounts paid, per hectare,

per type of product. However, supporting organic farming, while positive for the environment, can affect trade, as it influences the quantities that will be offered in the organic products market (Diakosavvas 2003: 21). If another country outside the EU would like to sell their organic products in the EU, it would be confronted with a subsidized structure. Or if the EU sells its products in foreign markets, they would have an advantage over national ones. EU organic products have a cost structure advantage compared to those of other non-subsidized products from other countries.

As stated in Annex 2 of the AoA, the payment should not exceed extra costs or income forgone in engaging in the environmental activity. This calculation in the EU is based on an average cost (at country level or by region) taking into account also the type of activity. Doing this calculation at an individual level would of course increase transaction cost, so this is why countries opt for the average costs. This implies that farmers who have a lower cost than average are more inclined to consider engaging in certain agri-environment measures, than others whose costs are not covered by the AEPs. This extra income could have an effect on the production levels (Glebe 2007: 97).

Most likely, decoupled payments, including AEPs, can impact directly or indirectly the quantities produced and trade, as farmers will enjoy more income and wealth, which might influence their investment decisions, and the risk concern is highly minimized (Diakosavvas 2003: 20).

AEPs payments scheme allows for a combination of measures on the same land to the extent that they are "complementary and compatible"[18]. So, farmers who have engaged in organic farming have reported to also engage with water or soil protection measures, traditional crop varieties, etc. (Sanders et al. 2011: 30). This combination does not need to be limited to the AEPs sub-measures only, but with other sources such as SPS or coupled income support. Each Member State will determine the different combinations possible and avoid paying for the same thing twice. In WTO's terms, this means that Green Box payments are being combined with Amber or Blue Box payments. A Green Box payment together with a trade distorting payment (qualified as amber), most probably will contribute to the continuation of the trade distorting effect (Galperin and Doport Miguez 2009: 254). The effect of the accumulation of the different payments deserves serious attention as farmers continue to subsidies **from varied and new sources** (Khor 2009: 31).

Diakosavvas report (2003: 19) concludes that "agri-environmental payments in the green box for OECD countries exert a statistically influential effect on production and trade". The effects might start to be higher as the importance of Agri-Environment Payments and countries implementing them is growing. Incentives for environmentally sustainable farming practices, which were applied previously in the EU, Norway, Switzerland and the US, have been introduced more recently by Canada, Japan and Korea, as well (Vojtech 2010: 19). See Appendix 9 for general measures addressing environmental issues in agriculture in OECD countries and Appendix 10 for a list of types of AEPs applied by OECD member countries in 2008.

[18] For more details see Regulation (EC) No. 1974/2006

3.3.2 Effectiveness of AEPs in addressing environmental priorities

Beyond what the existing EU legislation established, the implementation on the ground of the different environmental measures, including AEPs, has sometimes been far from what the "black and white" paper says, as they lack clear objectives, measurable outcomes and targets (Wiggerthale 2004: 15, Baylis et al. 2008: 757). This generates doubts and skepticism to taxpayers and to trade partners. Environmental considerations have not been the main concern of the CAP. They are a side objective, together with other goals such as rural development, employment creation, etc., something typical from government financed programmes, as explained on Chapter 1. These are not necessarily focused on the capacity to deliver an environmental service, and in many occasions respond to political pressures (Wunder et al. 2008: 850). In such cases, evidence indicates that the scheme is less likely to be effective in achieving its environmental goals (Wunder et al. 2008: 17). Wunder also recognized that "… government-financed programs that often have broader and less well-defined objectives […] can sometimes be hard to distinguish from more traditional subsidy programs…" (Wunder et al. 2008: 843). EU programmes focus more on supporting a farming process than on decreasing the negative externality, assuming that a certain practice will lead to a reduction of negative externalities (Baylis et al. 2008: 754). In this regard, the lack of a scientific or technical base highlighted on the first Chapter as key for PES programmes have also affected the effectiveness of the AEPs schemes.

The statements above can be confirmed with a 2011 Report from the European Court of Auditors, titled "Is agri-environment support well designed and managed?"[19]. It recognizes an improvement and increase in sustainable farming practices in approximately 20 years since the agri-environmental policies were brought in, as well as a number of good practices. Nonetheless, it highlights serious deficiencies that have prevented AEPs from achieving its goals related to enhancing the environment and the country side (ECA 2011: 50). Some of them include:

- Objectives are too vague: they are not specific, measurable or time bound. In some cases they cannot be verifiable or indicate any baselines. An example of a vague objective can be observed in a Polish rural development programme, as it states: "adequate soil use and water protection" (ECA 2011: 80). This of course hinders the possibility to assess if an objective was achieved or not. The Court concludes that "the policy [AEPs scheme] was not designed and monitored as to deliver tangible environmental benefits" (ECA 2011: 47).
- Questionable aid amounts, and lack of differentiation according to local specific circumstances. There are several examples provided. These include: paying 1770 Euros to a farmer for keeping a farm register of the "movement of beehives", which is considered a farming practice subject to be subsidized (Andalucia, Spain, ECA (2011: 33)); paying farmers for reducing nitrate fertilizers' levels from 180 kg per hectare

[19] The report of the Court was based on a sample of 48 rural development programmes, from 21 Member States (ECA 2011: 15).

to 125 kg per hectare[20], while the average is actually 65kg (France, ECA (2011: 34). This means that: farmers are being paid for something they were already doing, and actually surpassing; and calculation of the threshold (125 kg per hectare) is not related to actual levels of consumption. In this last example, 770 million Euros are planned to be paid in France for this sub-measure between 2007-2013. Another concern is that the use of averages (of costs, of incomes) to determine subsidy amounts, has led to overcompensation or undercompensation.

- Payments are not channeled to address clear environmental pressures. The Court recognizes that EU allocation of resources does not "depend on environment or other factors relevant for agri-environment, such as improved targeting or better focusing on EU priorities" (ECA 2011: 43). Added to this fact, budgets for AEPs are based on historical spending amounts and not on specific environmental outcomes to be achieved. As the mechanism is voluntary, this has resulted in submeasures being financed in areas where there are no environmental threats, or in excessive participation of farmers in submeasures which are less demanding or provide fewer environmental benefits (ECA 2011: 44-45).
- Deficiencies in linking the farming practice to the expected environmental outcomes. According to Primdahl et al. (as cited in ECA 2011: 44), in many cases the sub-measures were based on "common sense impact models and general beliefs" as to how farming practices can generate the desired environmental changes and not so much on "documented evidence".

Besides the concerns of how AEPs can influence trade and be a continuation of traditional subsidies, the scheme still needs some adjustments if it really wants to respond to major environmental concerns in the EU.

3.4 Is the EU evading WTO provisions?

Before answering this question, some matters which relate to the vagueness of the definitions within the Green Box need to be addressed.

Chapter 1 (section 1.2.2.1) shared the list of what can be reported as Green Box subsidy. This has allowed domestic support to be sustained or increased, while subsidies are moving from one box to the other: "box-shifting" (Nassar et al. 2009: 330-331). There are still many loopholes and gaps. Some countries insist that this needs to be addressed and others refuse to consider it, since it allows them enough flexibility to continue with their domestic subsidy system (Wiggerthale 2007: 6-7). Some developing countries have insisted on more transparency and clearer criteria for classifying certain domestic support as Green Box (Cuba et al. 2000: 3). They argue that "What is considered 'no or at most minimal, trade-distorting effects' remains a value judgment on the part of the government providing the subsidy. Nowhere in Annex 2 or the Agree-

[20] According to the relevant French representatives, 125kg is a reference level is 'a reference practice considered good for the environment' (ECA 2011: 34)

ment on Agriculture has it been defined." (Ibid). They challenge the fact that governments cannot ensure that resources received by farmers will not be used to buy more inputs and consequently, have an effect on production levels and distorting trade.

Another serious problem arises from the different understandings of what countries consider an "environmental programme", which as explained earlier on section 1.2.2.1, is one category exempted under the Green Box umbrella. It should fulfill general provisions -be part of a government environmental or conservation programme and "payment shall be limited to extra costs or loss of income involved in complying with the government programme" (WTO 1994: Annex 2). However, there is no definition of what environmental is (Glebe 2007: 88, Diakosavvas 2003: 21). The concept has different dimensions and meanings. It is a value of judgment of different cultures, societies, and even individuals. For example, while the EU considers payments to preserve the agricultural landscape as a legitimate environmental concern, the USA and the Cairns Group[21] have challenged this in the past. For them the environment is more associated with a state of wilderness, and due to their specific circumstances, "the importance of the contribution of agriculture to the cultural heritage is much less stressed than in Europe" (Glebe 2007: 89). In general, there is a common vision of what the negative externalities of agriculture are (i.e. pollution, biodiversity loss, etc.). However, the understanding of the role of agriculture in the provision of positive externalities varies significantly across countries. In the case of the USA, for example, AEPs are more focused on addressing the negative externalities posed by agriculture (Glebe 2007: 89, Baylis et al. 2008: 753). As for the EU, they have a wider view. For them, maintenance of traditional farming, use of stone fences, or in general, the "cultivated look of the European country side", are considered public goods that deserve an additional payment as the market in itself does not recognize its value (Baylis et al. 2008: 756). Due to these different conceptions of the environment, this research paper is not attempting to analyze the legitimacy of EU's inclusion of several environmental programmes under the Green Box, but it is important to highlight that this difference exists and creates some tension.

Going back to WTO provisions on the amounts to be paid to farmers engaging in environmental programmes, AoA limits them to "extra costs or loss of income involved in complying with the government programme" (my emphasis). It is also important to note, that under the environmental programmes, the AoA does not indicate how to calculate or assess the "extra costs or income forgone" in fulfilling the "government or conservation programme". Usually the existing agricultural practice can be considered as the baseline (Wiggerthale 2004: 17). However, Diakosavvas (2003: 22) interestingly stresses

[21] The Cairns Group is a coalition of 19 developed and developing agricultural exporting countries which promote free trade and fairer in agriculture. Its members are: Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Guatemala, Indonesia, Malaysia, New Zealand, Pakistan, Paraguay, Peru, the Philippines, South Africa, Thailand and Uruguay. (Cairns Group. 2012)

that "complying"[22] refers to mandatory programmes only. This would mean that AEPs, due to their voluntary nature (paid only if exceeding **mandatory** standards set by cross-compliance), should not be included as part of the Green Box exemptions, as farmers are not required to comply with a mandatory requirement.

This matter can of course have different interpretations, since the use of agri-environment programmes is mandatory at the EU Member State level, as part of their rural development plans, however, farmers engage on a voluntary basis (European Commission. 2013d). If voluntary or optional measures can be part of the Green Box has not been challenged so far in WTO.

Another question arises about whether the maintenance or preservation of a certain practice or landscape can be included for payments. The EU argues that in some cases, if it weren't because of the subsidies, farmers would just not continue maintaining a certain landscape or sustainable activity, and the territory runs the risk of being abandoned (European Council 2006: Section 3.2 (ii)). In other words, the EU is paying for the risk of losing a practice, but in financial terms, there is no income forgone or additional costs involved.

To clarify and agree on some of the exiting gaps, paragraph 16 of the WTO's General Council's decision on Doha Development Agenda work programme stated that (WTO. 2004):

> **"**Green Box criteria will be reviewed and clarified with a view to ensuring that Green Box measures have no, or at most minimal, trade-distorting effects or effects on production. Such a review and clarification will need to ensure that the basic concepts, principles and effectiveness of the Green Box remain and take due account of non-trade concerns…"

However, due to the impasse in the negotiations of the Doha Development Round, this matter is not being discussed, and it will not be even addressed during the next Ministerial Conference to be held in Bali in December 2013 (respondent 4, personal communication, 28 October 2013). In the meantime, Green Box subsidies represent a higher share from the total, and subsidies as a whole (Amber, Blue and Green Box together) have not diminished (OECD 2009: 14).

The use and reporting of Green Box subsidies would benefit from more transparency. Some critics have identified cases where amounts reported by a country to the EC for WTO reporting purposes, are lower than their actual national spending (as mentioned in Chapter 2, domestic support provided to EU farmers comes from the EU budget as well as from national budgets) (Chatellier 2009: 269). Since information submitted is very limited and not too detailed, it is hard to assess and conclude if they are in line with the criteria or not. Additionally, some countries undermine its importance, as Green Box subsidies are supposed to be non-trade-distorting, so it shouldn't generate any concern for WTO (Ibid). However, as previously explained, as Green Box spending has no limits and it is not subject to any reduction commitments, it

[22] Cambridge dictionaries online define the word 'comply' as: 'to act according to an order, set of rules or request'. http://dictionary.cambridge.org/dictionary/british/comply

could easily be misused, as it enables a very interesting option for channelling subsidies (Wiggerthale 2004: 12).

Countries should report yearly on the amounts paid under this concept, and when there are changes or a new programme is developed, then they have to report it. However, in many cases, there is not too much detail. See for example an extract of an EU notification to WTO regarding a new or modified domestic support policy, the part that relates to the environmental component:

> "…In addition to the above changes to the direct support schemes, Regulation (EC) No 74/2009 of 19 January 2009 dealt with the need to reinforce Rural Development (Pillar II of the CAP) with programmes in the areas of:
> - climate change,
> - renewable energies,
> - water management,
> - biodiversity,
> - innovation linked to the priorities above…" (European Union 2012: 2-3)

The existing monitoring mechanism under the Agriculture Committee is an open "Agriculture Information Management System"[23]. It enables an exchange of questions and answers regarding the notifications presented by WTO members. If the answer is not satisfactory, countries can take the case to the Dispute Settlement Body. Within the last ten years, all questions posed to the EU regarding its environmental programmes within the Green Box were made by Australia, Japan and the USA. Asked about the lack of participation of developing countries in this mechanism, a representative from a developing member state of the WTO (respondent 4, personal communication, 28 October 2013) indicated that developing countries usually do not have enough staff or capacities to go into the different notifications of other countries. Also, due to important power/economic differentials, if not affected directly, developing countries might avoid engaging in such a process with their main developed trade partners. On the other hand, Japan and USA have also undergone important shifting of subsidies from Amber to Green Box, so engaging in a dispute settlement process with the EU might trigger their Green Box subsidies being challenged by the EU. So, besides some exchange of Q&A, no case on environmental programmes has been taken to the Settlement Body.

Related to the above, Khor (2009: 33) states that "there are many imbalances in the exiting WTO rules on agriculture, as the markets of developed countries are still extremely protected, and the rules were crafted in such a way that enabled this continued protection, especially in domestic subsidies". During the Uruguay Round of Trade Negotiations in the early 1990s, discussions were stuck on several topics, including agriculture. The EU and the USA met privately to discuss the pending issues and bottlenecks, and ended up signing the Blair House Agreement, which weakened even more the agriculture considerations within the Uruguay Round of Trade Negotiations. They managed to introduce the subsidy box system, which would at the end, allow for the

[23] See https://agims-qna.wto.org/public/Pages/en/Search.aspx

continuation of their domestic subsidies' system (Will and Winters 1995: 21). Therefore, opposition on their behalf to changing, clarifying, etc., the current considerations within the WTO is expected. So, in principle, with the current rules and opportunities for different interpretations (some might call it flexibility, others would rather refer to them as gaps and loopholes), the EU seems to be complying with WTO provisions and has made efforts to adapt its legislation to them, which they, by the way, had a key role in formulating during the 90s. However, while in compliance with WTO rules, we cannot overlook that AEPs included in the Green Box, have the potential to "provide a significant incentive to produce" (Diakosavvas 2003: 21).

Conclusions

This research paper provided an overview of the theory and practice related to payment for environmental services (PES) as a compensation mechanism which is supposed to internalize some environmental externalities that the common market is unable to recognize in economic terms. The existence of such mechanisms, within their limitations, is considered valuable for reducing negative externalities, for example those generated by agriculture, as well as for provision of public goods and human wellbeing. The payment of some agricultural subsidies on environmental grounds is supposed to be justified by this "market imperfection". The EU's Common Agricultural Policy (CAP), analyzed in Chapter 2, in particular its environmental component, was an example of how PES and agricultural subsidies are merged in one system of incentives. The last Chapter analyzed this policy and its impacts in the context of a multilateral trading system whose rules are characterized for being very clear and strict for some topics (for example, Intellectual Property Rights), but very vague and flexible for some others (for instance, domestic support on agriculture).

From the analysis of this research paper, it can be concluded that in general terms, transforming the majority of the subsidies from coupled to decoupled support within the CAP has been a positive step in terms of both international trade and the environment. As indicated earlier, linking subsidies to quantities produced or providing price support to farmers are some of the most trade distorting and environmentally harmful agricultural policies a government can pursue. At the same time, the EU has taken the lead in mainstreaming environment into the CAP, not only as a mandatory measure, to which payments are conditioned, but also in using agriculture as a way to generate positive environmental outcomes. However, making the CAP less trade distorting and environmentally friendlier does not mean that it is not affecting trade or that it is "production neutral" as called by some (Diakosavvas 2003: 12).

At a first glance, the EU seems to be in compliance with current WTO provisions with regards to the inclusion of its environmental programmes, including Agri-Environment Payments (AEPs) under the Green Box, and as such, entitled to be exempted from reduction commitments. EU Legislation has been drafted carefully enough, and adjustments have been made throughout the years. Nonetheless, while complying with WTO rules, they can have the effect of functioning as conventional subsidies, as they can influence production or markets, which makes them, to some degree, trade-distorting. Besides this "economic" consideration, implementation on the ground of AEPs and other environment related measures has represented another challenge. The lack of clear and measurable objectives, of baselines, untargeted efforts, weak calculation of aid amounts, poor relationship between the payment and environmental services associated, as identified by the European Court of Auditors and raised by others, are of serious concern. They pose the question to what extent the policy is aiming to internalize those externalities not recognized by the market or it is enabling the continuation of conventional/ traditional subsidies.

The reality is that the CAP's *raison d'être* is to transfer income to farmers. Different CAP reforms have attempted to leave farmers' incomes unchanged,

while adjusting it to be more WTO "friendly". Nonetheless, WTO provisions and criteria regarding the different subsidies' boxes, in particular the Green Box, are somehow flexible and subject to interpretations. This of course has been highly appreciated by some countries that have subsidized their farmers for many decades now. On the other hand, it is a matter of serious concern by others who consider that the lack of definitions and loose criteria, added to the fact that Green Box has no limits and it's not subject to revisions, allows for the scheme to be abused.

Indeed, CAP reforms in 2003 went from supporting production to supporting producers (while keeping some level for coupled support). However, directly or indirectly, it has an effect on production, though not so strong and harmful as it did before. Sayan and Tin (as cited in Wiggerthale 2004: 25) indicate that "In the relevant literature, many experts hold the view that it is impossible to support agriculture without distorting effects and that any support will influence relative prices, even if the subsidies are not bound to product prices". Many farmers, if left alone to face the "forces of the market", will run out of business in no time. Subsidies are in many cases, a substantial part of their incomes.

The basis for the calculations of the new decoupled amounts (Single Payment Schemes under Pillar 1) was the historical levels. This amount constitutes the baseline. Pillar 2 comes to add additional subsidies, optional for farmers, increasing resources allocated on the subsidy basket. In other words, this income accumulates from a combination of sources, from direct payments (SPS), plus some additional aids given to farmers, for example, investment aids, AEPs, training, modernization of agricultural holdings, etc. The individual payments by themselves will have an effect on trade, as they influence the supply, the quality, etc., and gives the EU's farmers greater advantage against those from other countries, in particular developing countries, that do not have the resources to support farmers in the same way as the EU does (or other developed countries). And of course, the accumulation of the different payments, including the AEPs, will not likely be production neutral and can have an effect on trade.

Green Box criteria and procedures under the WTO, including those related to environmental programmes, will certainly need to undergo major surgery and increased transparency to have a clear set of rules by which countries have the same understanding and can abide by. Criteria should be clear enough to rule out those subsidies that have a thin layer of green on the outside, but when you dig into them, multiple shades of amber start to emerge.

More and more, Green Box subsidies are being increased, not only by the EU, but by other developed countries, such as USA, Switzerland and Japan. It would be naïve to think that billions of dollars/euros, etc. in subsidies labelled as green, would not be more than "non or minimal trade distorting". The amounts currently allocated for environmental programmes are not so large but their relevance is increasing. The close link between agriculture and the environment, current world challenges as climate change, water scarcity, and achieving sustainable development, among others, provide the necessary arguments for the continuation or extension of such programmes. However, as long as rules and limits are not set clearly, transparency is increased, and payments respond to clear environmental outcomes or benefits, "the tool will be

abused both accidentally and wilfully, as a means for disguising income or even production support" (Brunner and Huyton 2009: 479).

Of course, any country, developed and developing, can use the Green Box provisions in the same way as other developed countries are doing. But this raises the question of equity, as developing countries lack the financial resources to support such a subsidy structure.

The concerns raised in this research paper transcend those related to agriculture. The promise of the Northern countries to reform their trade distorting farm subsidies, that is, reduce Amber Box subsidies, is being used as a "bargaining chip to increase their exports of services and industrial goods" through more market access in developing countries (Berthelot. 2005), while the reality is that agriculture remains highly protected in the North.

WTO needs to act consistent with its principles of predictability, transparency, non-discrimination, etc. If it wants to really serve as a body for setting clear international trading rules and enable a level playing field for developed and developing countries, it should address, as a priority, the existing gaps and loopholes of domestic support subsidies criteria and provisions. The continuation of current subsidy levels, justified partially on environmental grounds and on the concern to feed the world in the face of increasing population levels, might only create more poverty and dependency, (for example, on aid, on foreign food), on the South, and threaten its food security. Because facing this seemingly noble cause at the expense of other farmers, in particular from developing countries, whose governments will not be able to cope with subsidy levels of the North, overshadows any potential benefit.

Areas for future work

Future work could assess the subsidy policies in other Northern countries, for example, the USA, Japan or Norway, which are recognized also for having highly subsidized crops.

As direct payments as well as those under Pillar 2 are supposed to be delinked from products, it is very difficult to track what products or type of crops are benefiting from determined payments. Crop/ sector specific information will allow an in-depth analysis of the effects on trade for that commodity.

Using subsidies to encourage a certain environmentally sustainable behaviour should demonstrate that this is the most effective and efficient policy tool for achieving a certain environmental goal or objective. An analysis of possible policies and their effects in achieving the desired environmental outcome and trade effect could be a subject of future analysis.

APPENDICES

Appendix 1. CAP expenditure in 2011 by EU Member State

CAP expenditure in 2011 by MS

EUR

EU Member States	Direct payments	Market measures	Rural development	Total
Belgium	575 665 188	69 150 260	73 167 519	**717 982 967**
Bulgaria	300 280 982	16 374 738	398 058 913	**714 714 634**
Czech Republic	656 992 212	12 480 488	406 640 636	**1 076 113 336**
Denmark	942 755 113	24 266 047	91 231 467	**1 058 252 627**
Germany	5 342 090 908	188 496 521	1 365 559 200	**6 896 146 630**
Estonia	71 715 024	2 998 100	104 639 066	**179 352 190**
Ireland	1 269 952 177	44 332 015	351 698 528	**1 665 982 721**
Greece	2 353 700 607	72 955 790	665 568 186	**3 092 224 582**
Spain	5 208 413 456	738 498 959	1 227 613 000	**7 174 525 415**
France	8 007 824 097	785 738 703	1 169 090 147	**9 962 652 947**
Italy	4 037 953 906	758 900 929	1 403 606 589	**6 200 461 425**
Cyprus	34 305 444	8 307 066	22 402 714	**65 015 224**
Latvia	105 182 685	7 371 113	148 781 700	**261 335 498**
Lithuania	271 378 601	8 434 270	248 002 433	**527 815 304**
Luxembourg	34 244 184	398 470	13 287 289	**47 929 943**
Hungary	953 703 893	108 919 562	547 603 625	**1 610 227 080**
Malta	3 748 948	613 647	10 347 884	**14 710 479**
Netherlands	817 433 090	129 187 094	90 406 648	**1 037 026 833**
Austria	713 653 302	33 665 704	556 070 574	**1 303 389 580**
Poland	2 177 012 788	317 892 931	1 860 573 543	**4 355 479 262**
Portugal	655 514 310	119 724 162	582 642 601	**1 357 881 073**
Romania	728 810 901	80 850 317	1 357 854 634	**2 167 515 852**
Slovenia	102 237 122	6 507 878	124 076 091	**232 821 091**
Slovakia	283 058 466	16 136 460	263 028 387	**562 223 312**
Finland	539 064 461	-39 590 412	298 490 092	**797 964 141**
Sweden	694 406 193	12 705 140	278 775 513	**985 886 847**
United Kingdom	3 296 931 577	5 745 494	748 994 332	**4 051 671 403**
CE	0	998 099	27 905 200	**28 903 299**
European Union	**40 178 029 637**	**3 532 059 546**	**14 436 116 511**	**58 146 205 694**

Note: Payments for direct payments and market measures; commitment payments for rural development.
Sources: European Commission, Directorate General for Agriculture and Rural Development (2011 EAGF Financial Report) and Commission Decision 2010/236/EU. Updated: November 2012.

Source: (European Commission. 2013a: 13)

Appendix 2. Distribution of Direct Aid to EU producers (2011 financial year)

Size-class of aid (all direct payments)	Financial year 2011			
	Beneficiaries		Payments in EUR	
	x 1 000	% of total	x 1 000	% of total
< 0 €	13.7	0.2%	- 11 293.0	0.0%
≥ 0 and < 500 €	2 847.7	37.4%	710 835.0	1.8%
≥ 500 and < 1 250 €	1 582.3	20.8%	1 277 702.0	3.2%
≥ 1 250 and < 2 000 €	671.7	8.8%	1 064 494.0	2.6%
≥ 2 000 and < 5 000 €	996.5	13.1%	3 176 046.0	7.9%
≥ 5 000 and < 10 000 €	577.9	7.6%	4 092 600.0	10.2%
≥ 10 000 and < 20 000 €	433.2	5.7%	6 156 789.0	15.3%
≥ 20 000 and < 50 000 €	364.6	4.8%	11 206 433.0	27.9%
≥ 50 000 and < 100 000 €	93.0	1.2%	6 226 768.0	15.5%
≥ 100 000 and < 150 000 €	16.7	0.2%	1 996 113.0	5.0%
≥ 150 000 and < 200 000 €	5.7	0.1%	977 374.0	2.4%
≥ 200 000 and < 250 000 €	2.9	0.0%	642 829.0	1.6%
≥ 250 000 and < 300 000 €	1.7	0.0%	470 144.0	1.2%
≥ 300 000 and < 500 000 €	2.6	0.0%	989 919.0	2.5%
≥ 500 000 €	1.5	0.0%	1 210 079.0	3.0%
Total	**7 611.5**	**100.0%**	**40 186 832.0**	**100.0%**

Source: European Commission, Directorate General for Agriculture and Rural Development, *Report on the distribution of direct aids to the producers (financial year 2011)*, March 2013.

Note: In order to protect the anonymity of the beneficiaries, numbers less than 10 have been made invisible in this table.

Source: (European Commission. 2013a: 8)

Appendix 3. EAFRD Axis- Financial Plans 2007-2013

	Financial Plans 2007-2013	
EAFRD Axis	Million €	%
Axis 1 Improving the competitiveness of the agricultural and forestry sector	32,162.10	33.4%
Axis 2 Improving the environment and the countryside	42,895.50	44.6%
Axis 3 Quality of life in rural areas and diversification of the rural economy	12,798.10	13.3%
Axis 4 LEADER: locally based, bottom-up approaches to rural development	5,838.30	6.1%
Technical Assistance	1,904.1	2.0%
Bulgaria + Romania Direct Payments	645.6	0.7%
Grand Total	96,244	100.0%

Source: Adapted from data provided by the European Commission (2012a: 13).

Appendix 4. Pillar 2 and specific measures under each Axis

EAFRD declared expenditure 2011 (Q4 2010-Q3 2011) & Total cumulative expenditure (Q4 2006 to Q3 2011) compared with Financial Plans*						
	Declared expenditure 2011 (Q4 2010 to Q3 2011)		Cumulative declared expenditure (Q4 2006 to Q3 2011)		Financial Plans 2007-2013	
EAFRD Axis / Measure	**(million €)**	**(%)**	**(million €)**	**(%)**	**(million €)**	**(%)**
111 Vocational training and information actions	105,3	0,9%	261,8	0,7%	1 023,3	1,1%
112 Setting up of young farmers	474,3	3,9%	1 312,4	3,3%	2 809,5	2,9%
113 Early retirement	331,6	2,7%	1 371,7	3,5%	2 600,7	2,7%
114 Use of advisory services	18,6	0,2%	38,3	0,1%	355,5	0,4%
115 Setting up of management, relief and	6,6	0,1%	10,6	0,0%	94,5	0,1%
121 Modernisation of agricultural holdings	1 502,4	12,3%	5 040,4	12,7%	11 117,4	11,6%
122 Improvement of the economic value of forest	41,2	0,3%	121,3	0,3%	596,7	0,6%
123 Adding value to agricultural and forestry...	634,0	5,2%	1 649,9	4,2%	5 634,5	5,9%
124 Cooperation for development of new products	21,7	0,2%	39,6	0,1%	333,5	0,3%
125 Infrastructure related to the development …	435,4	3,6%	1 189,3	3,0%	4 999,6	5,2%
126 Restoring agricultural production potential	79,1	0,6%	184,0	0,5%	477,6	0,5%
131 Meeting standards based on Community...	5,0	0,0%	49,9	0,1%	81,0	0,1%
132 Participation of farmers in food quality…	15,4	0,1%	31,9	0,1%	237,4	0,2%
133 Information and promotion activities	13,9	0,1%	26,9	0,1%	192,7	0,2%
141 Semi-subsistence farming	81,1	0,7%	472,0	1,2%	966,1	1,0%
142 Producer groups	25,1	0,2%	81,3	0,2%	323,5	0,3%
143 Direct Payment (BG + RO)	0,6	0,0%	2,3	0,0%	131,8	0,1%
144 Holdings undergoing restructuring	68,4	0,6%	68,4	0,2%	186,7	0,2%
Axis 1	**3 859,5**	**31,7%**	**11 952,1**	**30,2%**	**32 162,1**	**33,4%**
211 Natural handicap payments to farmers in ...	997,0	8,2%	4 160,9	10,5%	6 247,3	6,5%
212 Payments to farmers in areas with handicaps...	1 056,2	8,7%	4 325,5	10,9%	7 242,9	7,5%
213 Natura 2000 payments and payments linked ..	29,8	0,2%	85,5	0,2%	456,7	0,5%
214 Agri-environment payments	3 077,0	25,3%	12 030,1	30,4%	22 537,0	23,4%
215 Animal welfare payments	64,8	0,5%	207,9	0,5%	547,4	0,6%
216 Non-productive investments	69,3	0,6%	124,0	0,3%	576,1	0,6%
221 First afforestation of agricultural land	192,5	1,6%	829,1	2,1%	2 194,8	2,3%
222 First establishment of agroforestry systems...	0,0	0,0%	0,0	0,0%	18,7	0,0%
223 First afforestation of non-agricultural land	28,3	0,2%	65,5	0,2%	330,6	0,3%
224 Natura 2000 payments	4,9	0,0%	11,9	0,0%	98,4	0,1%
225 Forest-environment payments	7,3	0,1%	20,3	0,1%	227,0	0,2%
226 Restoring forestry potential and …	235,5	1,9%	559,1	1,4%	1 660,2	1,7%
227 Non-productive investments	72,0	0,6%	185,5	0,5%	758,4	0,8%
Axis 2	**5 834,5**	**47,9%**	**22 605,4**	**57,0%**	**42 895,5**	**44,6%**
311 Diversification into non-agricultural activities	173,8	1,4%	339,0	0,9%	1 388,5	1,4%
312 Business creation and development	223,9	1,8%	373,7	0,9%	2 070,1	2,2%
313 Encouragement of tourism activities	97,7	0,8%	225,3	0,6%	1 222,4	1,3%
321 Basic services for the economy and rural …	451,1	3,7%	771,5	1,9%	3 210,4	3,3%
322 Village renewal and development	661,6	5,4%	1 148,8	2,9%	3 252,1	3,4%
323 Conservation and upgrading of the rural....	144,9	1,2%	339,7	0,9%	1 375,4	1,4%
331 Training and information	13,0	0,1%	29,9	0,1%	131,7	0,1%
341 Skills acquisition, animation and implement...	16,4	0,1%	51,7	0,1%	147,5	0,2%
Axis 3	**1 782,4**	**14,6%**	**3 279,6**	**8,3%**	**12 798,1**	**13,3%**
411 Implementing local development strategies...	27,0	0,2%	53,4	0,1%	500,8	0,5%
412 Implementing local development strategies...	3,5	0,0%	5,8	0,0%	162,3	0,2%
413 Implementing local development strategies....	340,3	2,8%	552,8	1,4%	3 927,1	4,1%
421 Implementing cooperation projects	9,1	0,1%	12,4	0,0%	278,0	0,3%
431 Running the local action group, acquiring ...	143,9	1,2%	265,4	0,7%	970,2	1,0%
Axis 4	**523,8**	**4,3%**	**889,8**	**2,2%**	**5 838,3**	**6,1%**
511 Technical Assistance	**175,1**	**1,4%**	**463,0**	**1,2%**	**1 904,1**	**2,0%**
611 BG RO Direct Payments	**-0,3**	**0,0%**	**437,8**	**1,1%**	**645,6**	**0,7%**
Grand total	**12 175,0**	**100,0%**	**39 627,8**	**100,0%**	**96 243,8**	**100,0%**

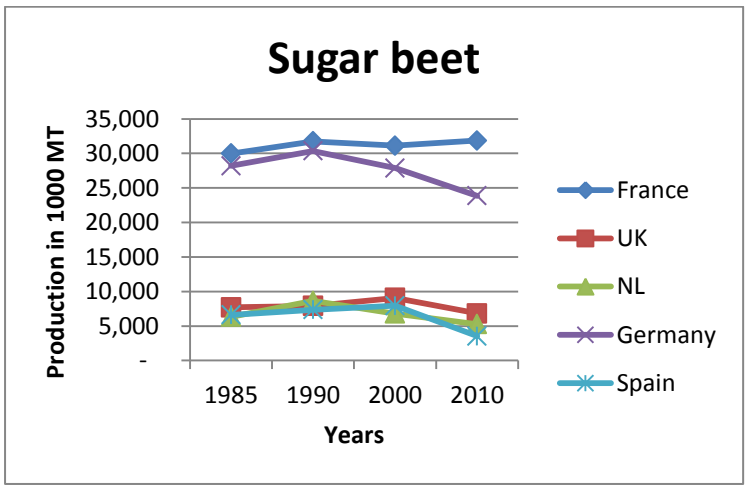
* Amount of 419 228,61 €was effectively decommitted for Portugal end of 2011 .

Source: (European Commission. 2012a: 13)

Appendix 5. Production levels of selected commodities and EU countries (1985-2010)[24]

Production sugar beet EU 1985-2010
(in 1000 MT)

Year/ Country	1985	1990	2000	2010	Variation (1990 and 2010)	Variation (2000 and 2010)
France	29,977	31,746	31,121	31,875	0.4%	2.4%
UK	7,715	7,902	9,079	6,827	-13.6%	-24.8%
NL	6,335	8,623	6,798	5,280	-38.8%	-22.3%
Germany	28,210	30,366	27,870	23,858	-21.4%	-14.4%
Spain	6,619	7,361	7,930	3,534	-52.0%	-55.4%

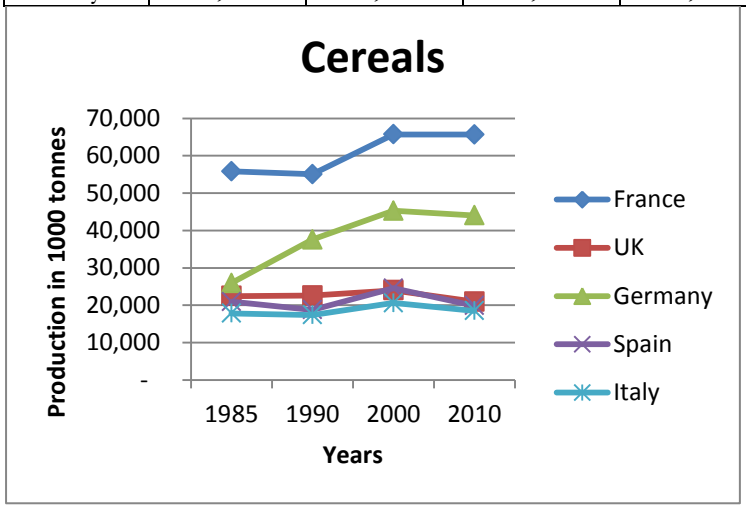


Source: Self, based on FAO data (FAO. 2013)

[24] MT in the figures stands for Metric Tones

Production Cereals, EU 1985-2010 (in 1000 in tonnes)

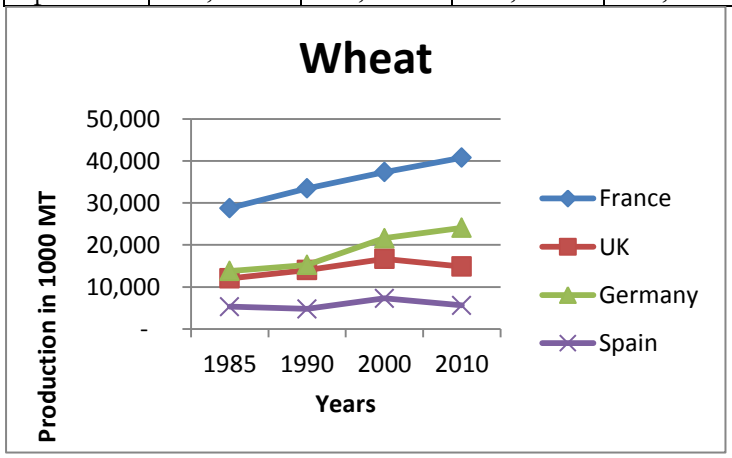
Year/ Country	1985	1990	2000	2010	Variation (1990 and 2010)	Variation (2000 and 2010)
France	55,812	55,060	65,698	65,669	19%	-0.04%
UK	22,467	22,583	23,985	20,946	-7%	-12.7%
Germany	25,914	37,580	45,271	44,039	17%	-2.7%
Spain	20,972	18,763	24,567	19,869	6%	-19.1%
Italy	17,823	17,394	20,622	18,518	6%	-10.2%



Source: Self, based on Eurostat data (EC. 2013f)

Production Wheat, EU 1985-2010 (in 1000 MT)

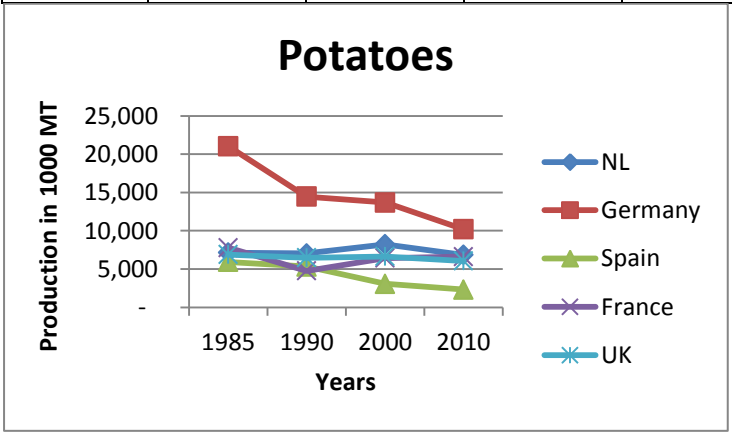
Year/ Country	1985	1990	2000	2010	Variation (1990 and 2010)	Variation (2000 and 2010)
France	28,784	33,445	37,353	40,760	21.9%	9.1%
UK	12,046	14,033	16,704	14,878	6.0%	-10.9%
Germany	13,801	15,242	21,621	24,107	58.2%	11.5%
Spain	5,329	4,773	7,294	5,610	17.5%	-23.1%



Source: Self, based on FAO data (FAO. 2013)

Production Potatoes, EU 1985-2010 (in 1000 MT)

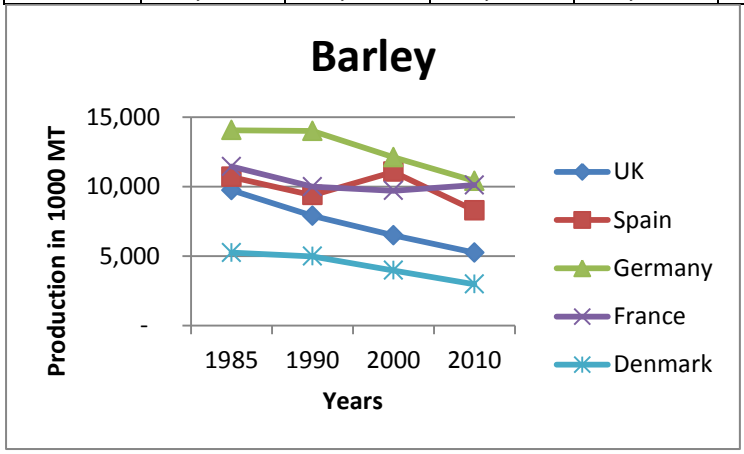
Year/ Country	1985	1990	2000	2010	Variation (1990 and 2010)	Variation (2000 and 2010)
NL	7,149	7,036	8,227	6,843	-2.7%	-16.8%
Germany	21,054	14,471	13,694	10,202	-29.5%	-25.5%
Spain	5,927	5,330	3,078	2,327	-56.3%	-24.4%
France	7,787	4,754	6,434	6,622	39.3%	2.9%
UK	6,892	6,467	6,636	6,056	-6.4%	-8.7%



Source: Self, based on FAO data (FAO. 2013)

Production Barley, EU 1985-2010 (in 1000 MT)

Year/ Country	1985	1990	2000	2010	Variation (1990 and 2010)	Variation (2000 and 2010)
UK	9,740	7,897	6,492	5,252	-33.5%	-19.1%
Spain	10,698	9,382	11,063	8,287[25]	-11.7%	-25.1%
Germany	14,057	13,992	12,106	10,412	-25.6%	-14.0%
France	11,442	9,996	9,709	10,102	1.1%	4.0%
Denmark	5,250	4,987	3,980	2,982	-40.2%	-25.1%

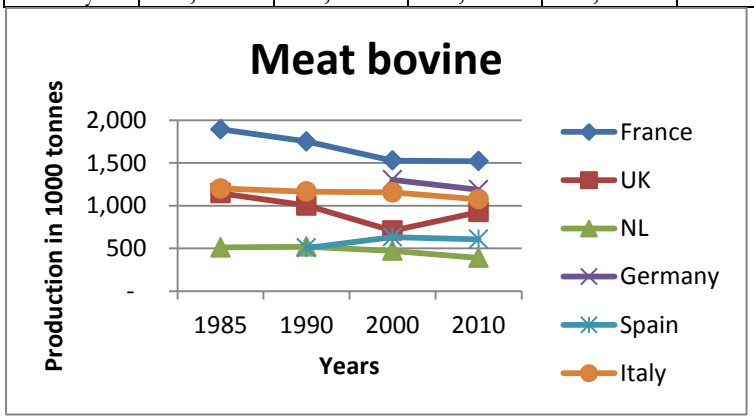


Source: Self, based on FAO data (FAO. 2013)

[25] 2011 data

Production Meat bovine, EU 1985-2010 (in 1000 tonnes)

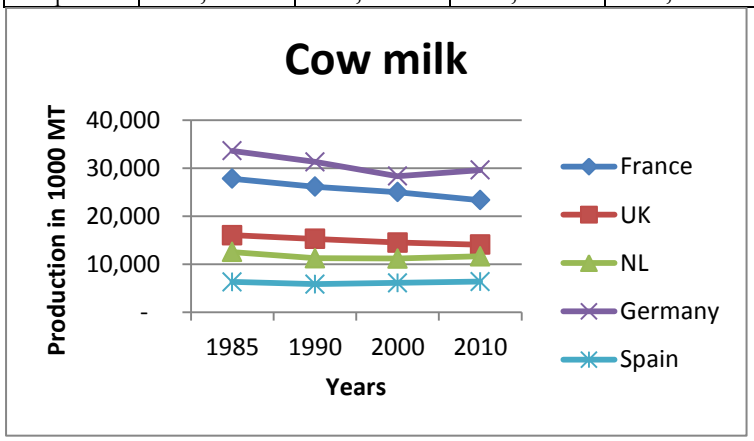
Year/ Country	1985	1990	2000	2010	Variation (1990 and 2010)	Variation (2000 and 2010)
France	1,893	1,750	1,527	1,521	-13%	-0.4%
UK	1,146	1,001	707	924	-8%	30.7%
NL	511	520	471	389	-25%	-17.4%
Germany			1,303	1,187		-8.9%
Spain		504	632	606	20%	-4.1%
Italy	1,200	1,165	1,154	1,075	-8%	-6.8%



Source: Self, based on Eurostat data (EC. 2013f)

Production Cow milk, EU 1985-2010 (in 1000 MT)

Year/ Country	1985	1990	2000	2010	Variation (1990 and 2010)	Variation (2000 and 2010)
France	27,808	26,135	24,998	23,332	-10.7%	-6.7%
UK	16,022	15,251	14,488	14,071	-7.7%	-2.9%
NL	12,525	11,226	11,155	11,626	3.6%	4.2%
Germany	33,588	31,307	28,331	29,594	-5.5%	4.5%
Spain	6,301	5,825	6,107	6,357	9.1%	4.1%



Source: Self, based on FAO data (FAO. 2013)

Appendix 6. List of Statutory Management Requirements for Cross-compliance and list of Good Agricultural and Environmental Conditions, Annexes II and III of European Council Regulation 73/2009

ANNEX II

Statutory management requirements referred to in Articles 4 and 5

Point A.

Environment

1.	Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ L 103, 25.4.1979, p. 1)	Article 3(1), Article 3(2)(b), Article 4(1), (2) and (4) and Article 5(a), (b) and (d)
2.	Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution caused by certain dangerous substances (OJ L 20, 26.1.1980, p. 43)	Articles 4 and 5
3.	Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture (OJ L 181, 4.7.1986, p. 6)	Article 3
4.	Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (OJ L 375, 31.12.1991, p. 1)	Articles 4 and 5
5.	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna (OJ L 206, 22.7.1992, p. 7)	Article 6 and Article 13(1)(a)

Public and animal health

Identification and registration of animals

6.	Council Directive 2008/71/EC of 15 July 2008 on identification and registration of pigs (OJ L 213, 8.8.2005, p. 31)	Articles 3, 4 and 5
7.	Regulation (EC) No 1760/2000 of the European Parliament and of the Council of 17 July 2000 establishing a system for the identification and registration of bovine animals and regarding the labelling of beef and beef products (OJ L 204, 11.8.2000, p. 1)	Articles 4 and 7
8.	Council Regulation (EC) No 21/2004 of 17 December 2003 establishing a system for the identification and registration of ovine and caprine animals (OJ L 5, 9.1.2004, p. 8)	Articles 3, 4 and 5

Point B.

Public, animal and plant health

9.	Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market (OJ L 230, 19.8.1991, p. 1)	Article 3
10.	Council Directive 96/22/EC of 29 April 1996 concerning the prohibition on the use in stockfarming of certain substances having a hormonal or thyrostatic action and of beta-agonists (OJ L 125, 23.5.1996, p. 3)	Article 3(a), (b), (d) and (e) and Articles 4, 5 and 7
11.	Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (OJ L 31, 1.2.2002, p. 1)	Articles 14 and 15, Article 17(1) [1] and Articles 18, 19 and 20
12.	Regulation (EC) No 999/2001 of the European Parliament and of the Council of 22 May 2001 laying down rules for the prevention, control and eradication of certain transmissible spongiform encephalopathies (OJ L 147, 31.5.2001, p. 1)	Articles 7, 11, 12, 13 and 15

Notification of diseases		
13.	Council Directive 85/511/EEC of 18 November 1985 introducing Community measures for the control of foot-and-mouth disease (OJ L 315, 26.11.1985, p. 11)	Article 3
14.	Council Directive 92/119/EEC of 17 December 1992 introducing general Community measures for the control of certain animal diseases and specific measures relating to swine vesicular disease (OJ L 62, 15.3.1993, p. 69)	Article 3
15.	Council Directive 2000/75/EC of 20 November 2000 laying down specific provisions for the control and eradication of blue-tongue (OJ L 327, 22.12.2000, p. 74)	Article 3
Point C. Animal welfare		
16.	Council Directive 91/629/EEC of 19 November 1991 laying down minimum standards for the protection of calves (OJ L 340, 11.12.1991, p. 28)	Articles 3 and 4
17.	Council Directive 91/630/EEC of 19 November 1991 laying down minimum standards for the protection of pigs (OJ L 340, 11.12.1991, p. 33)	Article 3 and Article 4(1)
18.	Council Directive 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes (OJ L 221, 8.8.1998, p. 23)	Article 4

(1) As implemented in particular by:
— Regulation (EEC) No 2377/90: Articles 2, 4 and 5,
— Regulation (EC) No 852/2004: Article 4(1) and Annex I part A (II 4 (g, h, j), 5 (f, h), 6; III 8 (a, b, d, e), 9 (a, c)),
— Regulation (EC) No 853/2004: Article 3(1) and Annex III Section IX Chapter 1 (I-1 b, c, d, e; I-2 a (i, ii, iii), b (i, ii), c; I-3; I-4; I-5; II-A 1, 2, 3, 4; II-B 1(a, d), 2, 4 (a, b)), Annex III Section X Chapter 1(1),
— Regulation (EC) No 183/2005: Article 5(1) and Annex I, part A (I-4 e, g; II-2 a, b, e), Article 5(5) and Annex III (1, 2), Article 5(6), and
— Regulation (EC) No 396/2005: Article 18.

ANNEX III

Good agricultural and environmental condition referred to in Article 6

Issue	Compulsory standards	Optional standards
Soil erosion: Protect soil through appropriate measures	— Minimum soil cover	— Retain terraces
	— Minimum land management reflecting site-specific conditions	
Soil organic matter: Maintain soil organic matter levels through appropriate practices	— Arable stubble management	— Standards for crop rotations
Soil structure: Maintain soil structure through appropriate measures		— Appropriate machinery use
Minimum level of maintenance: Ensure a minimum level of maintenance and avoid the deterioration of habitats	— Retention of landscape features, including, where appropriate, hedges, ponds, ditches trees in line, in group or isolated and field margins	— Minimum livestock stocking rates or/and appropriate regimes
		— Establishment and/or retention of habitats
	— Avoiding the encroachment of unwanted vegetation on agricultural land	— Prohibition of the grubbing up of olive trees
	— Protection of permanent pasture	— Maintenance of olive groves and vines in good vegetative condition
Protection and management of water: Protect water against pollution and run-off, and manage the use of water	— Establishment of buffer strips along water courses (1)	
	— Where use of water for irrigation is subject to authorisation, compliance with authorisation procedures	

(1) Note: The GAEC buffer strips must respect, both within and outside vulnerable zones designated pursuant to Article 3(2) of Directive 91/676/EEC, at least the requirements relating to the conditions for land application of fertiliser near water courses, referred to in point A.4 of Annex II to Directive 91/676/EEC to be applied in accordance with the action programmes of Member States established under Article 5(4) of Directive 91/676/EEC.

Source: European Council (2009a: Annex II and III)

Appendix 7. Potential environmental impact of different types of support measure

(partial extraction of original table)

Potential environmental impact	Type of support measure
Potentially most harmful	Market price support
	Payments based on commodity output, without imposing environmental constraints on farming practices
	Payments based on variable input use, without imposing environmental constraints on farming practices
	Total
Potentially less harmful	Payments based on current cropped area/number of animals/receipts or income, without imposing environmental constraints on farming practices
	Payments based on historical entitlements/receipts or income, without imposing environmental constraints on farming practices
	Payments based on fixed capital formation, without imposing environmental constraints on farming practices
	Payments based on on-farm services, without imposing environmental constraints on farming practices
	Total
Potentially more beneficial	Payments subject to environmental cross-compliance[1]
Potentially most beneficial	Payments based on non-commodity criteria that impose environmental constraints on farming practices
	Payments based on fixed capital formation that impose environmental constraints on farming practices
	Payments based on on-farm services that impose environmental constraints on farming practices
	Payments based on variable input use that impose environmental constraints on farming practices
	Payments based on current cropped area/number of animals/receipts or income that impose environmental constraints on farming practices
	Payments based on historical entitlements/receipts or income that impose environmental constraints on farming practices
	Payments based on commodity output that impose environmental constraints on farming practices
	Total

1. Includes payments from various PSE categories which are subject to environmental cross-compliance.

Source: OECD (2013d: 67)

Appendix 8. Conversion and Maintenance payments per hectare for organic farming, under AEPs, EU, 2011

Conversion payments in EU Member States provided under RDP measure 214 in 2011 (average payments over the first five years)[1]

Country	Euro per ha							Comments
	Grass-land	Arable land	Annual vegetables/ herbs	Green-house crops	Perennials, orchards, fruits	Vine-yards	Olive trees	
Austria [2]	110-240	285	450-600	2,900-4,200	450-750	750	0	In addition, payment for medicinal crops and spices of 450 EUR/ha, 750 EUR/ha for tree and hop nurseries and 25 EUR per beehive. Specific payment degression for arable fodder crops and soil recovery areas: first 25% of arable land = 285 EUR/ha; above 25% of arable land with ≥ 0.5 LU/ha = 240 EUR/ha, above 25% of arable land with < 0.5 LU/ha = 110 EUR/ha. General payment degression: until 100 ha = 100%; 100-300 ha = 92.5%; 300-1000 ha = 85%; > 1000 ha = 75%. Grassland payments are differentiated by livestock density and cutting frequency
Belgium [3]	270-335	456-510	810-880	1,254 [7]	788-810	0	0	Flanders: Payment degression for annual vegetable crops: conversion area: ≤ 2.5 ha = 880 EUR/ha; > 2.5 ha = 820 EUR/ha Wallonia: In addition, payment for fallow land; Payment degression: Grassland and fallow land: ≤ 32 ha = 335 EUR/ha; > 32-64 ha = 210 EUR/ha; > 64 ha = 135 EUR/ha Arable land: ≤ 32 ha = 510 EUR/ha; > 32-64 ha = 385 EUR/ha; > 64 ha = 310 EUR/ha Arboriculture and horticulture: ≤ 14 ha = 810 EUR/ha; > 14 ha = 510 EUR/ha (av.)
Bulgaria	82	165	407	407	470	470	0	In addition, payment for oil and medicinal crops of 296 EUR/ha (av.), essential oil roses of 470 EUR/ha (av.) and for bee families (BF) of 12 EUR/BF (av.)
Cyprus	450	380-750 [2]	750	0	1,000	1,000	0	Grassland payments just if used for stock farming
Czech Republic [13]	71-89 [4]	155	564	0	510-849	849	0	Permanent culture (vineyards, orchards, hops): 849 EUR/ha, 510 EUR/ha for extensive orchards
Denmark [9]	165	165	165	0	165	0	0	Payment includes 101 EUR/ha maintenance support from the Environmental Farming Support scheme during the conversion period
Spain [5]	57-207	77-480	238-640	285-658	94-1,075 [6]	210-1,239 [6]	248-472	In addition, livestock payments, payments for bee-keeping and payment degression in relation to size and over time are implemented in some regions. Arable land excludes payments for rice, lucerne and intensive herbaceous crops; Horticultural land excludes payments for mushrooms
Estonia	77	119	350	0	350	0	0	Grassland: Additional livestock payment of EUR 32 per unit of grazing livestock; Other livestock payments: sows with piglets = 211 EUR/sow resp. young pigs = 128 EUR/pig, poultry = 6.4 EUR/bird, rabbits = 6.4 EUR/rabbit, bee families 32 EUR/BF

Conversion payments in EU Member States provided under RDP measure 214 in 2011 ***(continued)***

Country	Euro per ha							Comments
	Grass-land	Arable land	Annual vegetables/ herbs	Green-house crops	Perennials, orchards, fruits	Vine-yards	Olive trees	
Finland	39-267	234-383	579-900	0	591-900	0	0	Payments include payment for mandatory basic AEM (Mainland: 93 EUR/ha arable land, 438 EUR/ha horticultural land, 450 EUR/ha fruits and berries; Åland: 145 EUR/ha arable land, 415 EUR/ha horticultural land, 554 EUR/ha fruits and berries - due to EC Reg. 1698/2005 payment limit of 900 EUR/ha for horticulture and fruit+berries, resp. Mainland: upper payment rate range includes livestock payment of 126 EUR/ha, maximum per hectare payment: EUR 267 (without basic AEM)
France	-	-	-	-	-	-	-	Since 2011, conversion payments are paid via Article 68 of EC Reg. No. 73/2009
Germany [3]	150-252	150-252	300-576	4,900 [7]	308-1,080	430-1,080	0	Bavaria and Baden-Wurttemberg: max. EUR 40,000 per farm and year
Greece	166-339 [2]	320-600 [2]	320	0	0	900	756	Grassland payments just if used for stock farming; In addition, payments for saffron = 900 EUR/ha
Hungary [2, 8, 13]	48-116	181-251	265-358	0	600-829	706-738	0	
Ireland	148	148	198	0	148	148	0	In addition, payments for other land of 12 EUR/ha; Payment degression: Horticultural land: ≤ 6 ha = 198 EUR/ha, 6 - 55 ha = 148 EUR/ha, > 55 ha = 21 EUR/ha; Farmland: 3 - 55 ha = 148 EUR/ha, > 55 ha = 21 EUR/ha
Italy [5]	13-418	88-600	166-921	495-600 [7]	307-900	470-900	335-680	In addition, payments for medical/officinal plants, floriculture and ash tree; Bolzano: max. EUR 20,000 per farm; Payment degression in some regions Grassland payments in some regions just if used for stock farming
Lithuania [13]	127	215	440-489 [2]	516	516	0	0	Maximum: EUR 115,848 per farm and year Arable land: only grains; pulses, oilcrops, sugar beets are not supported
Luxembourg	180	180	570	840	570-840 [2]	570-840 [2]	0	
Latvia [13]	108-138 [2]	108	318-357 [2]	0	419	0	0	In addition, payments for fallow land of 108 EUR/ha and payments for nectar plants of 138 EUR/ha
Malta	0	613	1.379	0	996	996	0	

Conversion payments in EU Member States provided under RDP measure 214 in 2011 ***(continued)***

Country	Euro per ha							Comments
	Grass-land	Arable land	Annual vegetables/ herbs	Green-house crops	Perennials, orchards, fruits	Vine-yards	Olive trees	
Netherlands	-	-	-	-	-	-	-	No specific support for organic farming since 2005
Poland [10]	69	195	263-337 [2]	0	178-408 [2]	0	0	Payment degression: 0.1 - 100 ha = 100%; > 100 - 200 ha = 50%; > 200 ha = 10% Payments exclude fruitless walnut plantation
Portugal [2]	186-227	82-384	542-648	648	180-972	529	255-551	Payment degression for fresh fruits, vegetables and vineyards: < 5 ha = 100%, 5-10 ha = 80%, 10-25 ha = 50%; > 25 ha = 20%, for for olive trees and dry fruits (irrigated) < 10 ha = 100%, 10-20 ha = 80%, 20-50 ha = 50%; > 50 ha = 20%, for olive trees and dry fruits (non-irrigated), annual crops (irrigated) < 20 ha = 100%, 20-40 ha = 80%; 40-100 = 50%; > 100 ha = 20%; for annual crops (non-irrigated), permanent and biodiversity pasture < 30 ha = 100%, 30-60 ha = 80%, 60-150 = 50%, > 150 ha = 20%; In addition, payments for tea of 900 EUR/ha
Romania	-	-	-	-	-	-	-	Conversion payments are paid via Art. 68 of Council Regulation (EC) No. 73/2009
Sweden [11]	39	161-553 [2]	553	0	830	0	0	Grassland: payment only if organic certification; all other land use types: just half of the payment if no organic certification or not in conversion
Slovakia	112	179	421	0	808	808	0	
Slovenia	213-238 [2]	298	551	488	555	579	555	In addition, payments for hops and tree nurseries of 579 EUR/ha
United Kingdom [3, 12]	5-108 [14]	84-171	79-180	0	102-484	150 [7]	0	In England, the organic support must be undertaken in combination with the Entry Level agri-environment Scheme, which is included in the payment rates

1) In some countries conversion payments are provided for the first two or three years only. In such cases maintenance payments for the years 4 and 5 are included in the calculation of averages.

2) Payment rate differs between further differentiation categories such as type of crops and livestock, management practices or land characteristics. 3) Payment rate differs between regions.

4) Higher payment rate applies if the whole farm is in conversion or converted. 5) Payment rate differs between regions and further differentiation categories. Payment categories are not implemented in every region

6) Highest payment rate of 1,075 EUR/ha for fruits respectively of 1,239 EUR/ha for wine in País Vasco. 7) Payment only exists in some regions.

8) Grassland only receives a maintenance payment. Since this is also paid in the conversion period, it has been included in the table.

9) Exchange rate: EUR 1 = DKK 7.4497; 10) EUR 1 = PLZ 4.1551; 11) EUR 1 = SEK 9.0359; 12) EUR 1 = GBP 0.8668 (average 2011); 13) all other monetary data were supplied in EUR.

14) Very low payment rate is paid for ELS land within moorland line in England.

Source: Own illustration based on data supplied by national experts

Maintenance payment rates in EU Member States provided under RDP measure 214 in 2011

Country	Euro per ha							Comments
	Grass-land	Arable land	Annual vegetables/ herbs	Green-house crops	Perennials, orchards, fruits	Vine-yards	Olive trees	
Austria [1]	110-240	285	450-600	2,900-4,200	450-750	750	0	In addition, payment for medicinal crops and spices of 450 EUR/ha, 750 EUR/ha for tree and hop nurseries and 25 EUR per beehives (BH); Specific payment degression for arable fodder crops and soil recovery areas: first 25% of arable land = 285 EUR/ha; above 25% of arable land with ≥ 0.5 LU/ha = 240 EUR/ha; above 25% of arable land with < 0.5 LU/ha = 110 EUR/ha; General payment degression: until 100 ha = 100%; 100-300 ha = 92.5%; 300-1000 ha = 85%; > 1000 ha = 75%. Grassland payments are differentiated by livestock density and cutting frequency
Belgium [2]	120-275	240-450	495-750	790 [3]	555-750	0	0	Flanders: Payment degression for annual vegetable crops: organic area: ≤ 2.5 ha = 495 EUR/ha; > 2.5 ha = 380 EUR/ha Wallonia: In addition, payment for fallow land; Payment degression: Grassland and fallow land: ≤ 32 ha = 275 EUR/ha; 32-64 ha = 150 EUR/ha; > 64 ha = 75 EUR/ha Arable land: ≤ 32 ha = 450 EUR/ha; 32-64 ha = 325 EUR/ha; > 64 ha = 250 EUR/ha Arboriculture and horticulture: ≤ 14 ha = 750 EUR/ha; > 14 ha = 450 EUR/ha
Bulgaria	82	155	357	357	418	418	0	In addition, payment for oil and medicinal crops of 267 EUR/ha essential oil roses of 418 EUR/ha and for bee families (BF) of 12 EUR/BF
Cyprus	450	380-750 [1]	750	0	1,000	1,000	0	Grassland payments just if used for stock farming
Czech Republic [10]	71-89 [4]	155	564	0	510-849	849	0	Permanent culture (vineyards, orchards, hops): 849 EUR/ha, 510 EUR/ha for extensive orchards
Denmark	101	101	101	0	101	0	0	Maintenance support is provided under the general extensification scheme or under Article 68 of Council Regulation (EC) No. 73/2009
Spain [5]	57-185	71-436	198-540	259-600	85-977 [6]	191-1,126	216-429	In addition, livestock payments, payments for bee-keeping and payment degression in relation to the size of the organic area and over time are implemented in some regions. Arable land excludes payments for rice, lucerne and intensive herbaceous crops; Horticultural land excludes payments for mushrooms
Estonia	77	119	350	0	350	0	0	Grassland: Additional livestock payment of EUR 32 per unit of grazing livestock; Other livestock payments: sows with piglets = 211 EUR/sow resp. young pigs = 128 EUR/pig, poultry = 6.4 EUR/bird, rabbits = 6.4 EUR/rabbit, bee families 32 EUR/BF

Maintenance payment rates in EU Member States provided under RDP measure 214 in 2011 ***(continued)***

Country	Euro per ha							Comments
	Grass-land	Arable land	Annual vegetables/ herbs	Green-house crops	Perennials, orchards, fruits	Vine-yards	Olive trees	
Finland	39-267	234-383	579-900	0	591-900	0	0	Payments include payment for mandatory basic AEM (Mainland: 93 EUR/ha arable land, 438 EUR/ha horticultural land, 450 EUR/ha fruits and berries; Åland: 145 EUR/ha arable land, 415 EUR/ha horticultural land, 554 EUR/ha fruits and berries - due to EC Reg. 1698/2005 payment limit of 900 EUR/ha for horticulture and fruit+berries, resp. Mainland: upper payment rate range includes livestock payment of 126 EUR/ha, maximum per hectare payment: EUR 267 (without basic AEM)
France	-	-	-	-	-	-	-	Since 2010, maintenance payments are paid via Article 68 of EC Reg. 73/2209
Germany [2]	131-204	137-200	255-550	3,500 [3]	308-864	400-864	0	Bavaria and Baden-Wurttemberg: max. EUR 40,000 per farm and year
Greece	151-273	247-600 [1]	247	0	0	900	415	Grassland payments just if used for stock farming; payments for saffron = 900 EUR/ha
Hungary [1, 10]	48-116	161-217	203-274	0	365-722	525-557	0	
Ireland	106	106	142	0	106	106	0	In addition, payments for other land of 15 EUR/ha; Payment degression: Horticultural land: ≤ 6 ha = 142 EUR/ha, 7-55 ha = 106 EUR/ha, > 55 ha = 15 EUR/ha; Farmland: 3-55 ha = 106 EUR/ha, > 55 ha = 15 EUR/ha
Italy [5]	12-385	80-600	144-737	445-600 [3]	290-900	419-900	270-609	In addition, payments for medical/officinal plants, floriculture and ash tree; Bolzano: max. EUR 20,000 per farm; Payment degression in some regions Grassland payments in some regions just if used for stock farming
Lithuania [10]	127	215	440-489 [1]	516	516	0	0	Maximum: EUR 115,848 per farm and year Arable land: only grains; pulses, oilcrops, sugar beets are not supported
Luxembourg	150	150	450	600	450-600 [1]	450-600 [1]	0	
Latvia [10]	108-138 [1]	108	318-357 [1]	0	419	0	0	In addition, payments for fallow land of 108 EUR/ha and payments for nectar plants of 138 EUR/ha
Malta	0	490	1.103	0	797	797	0	
Netherlands	-	-	-	-	-	-	-	No specific support for organic farming since 2005

Maintenance payment rates in EU Member States provided under RDP measure 214 in 2011 (continued)

Country	Euro per ha							Comments
	Grass-land	Arable land	Annual vegetables/ herbs	Green-house crops	Perennials, orchards, fruits	Vine-yards	Olive trees	
Poland [7]	63	190	253-313 [1]	0	156-371 [1]	0	0	Payment degression: 0.1 - 100 ha = 100%; > 100-200 ha = 50%; > 200 ha = 10% Payments exclude fruitless walnut plantation
Portugal [1]	172-450	76-900	502-900	600	180-900	490-900	236-510	Payment degression for fresh fruits, vegetables and vineyards: < 5 ha = 100%, 5-10 ha = 80%, 10-25 ha = 50%, > 25 ha = 20%; for olive trees and dry fruits (irrigated) < 10 ha = 100%, 10-20 ha = 80%, 20-50 ha = 50%, > 50 ha = 20%; for olive trees & dry fruits (non-irrigated), annual crops (irrigated) < 20 ha = 100%, 20-40 ha = 80%; 40-100 = 50%; > 100 ha = 20%; for annual crops (non-irrigated), permanent and biodiversity pasture < 30 ha = 100%, 30-60 ha = 80%, 60-150 ha = 50%, > 150 ha = 20%; In addition, payments for tea of 900 EUR/ha
Romania	0	162	270-335 [1]	0	393	393	0	
Sweden [8]	39	161-553 [1]	553	0	830	0	0	In addition, animal husbandry payment of 178 EUR/LU (1 LU/ha) resp. 89 EUR/ha (≤ 0.5 LU/ha) for arable land and permanent grassland. Grassland: payment only if organic certification; all other land use types: just half of the payment if no organic certification or not in conversion
Slovakia	96	153	377	0	671	671	0	
Slovenia	213-238 [1]	298	551	488	555	579	555	In addition, payments for hops and tree nurseries of 579 EUR/ha
United Kingdom [9]	6-58 [11]	35-69	35-231	0	69-231	69 [3]	0	England: The maintenance payment consists of a GBP 30 supplement for organic ELS eligible land on top of the normal GBP 30 ELS payment. Northern Ireland: Applicants for the maintenance payment ("Organic Management option") must be in the Northern Ireland Countryside Management Scheme

1) Payment rate differs between further differentiation categories such as type of crops and livestock, management practices or land characteristics.
2) Payment rate differs between regions. 3) Payment only exists in some regions. 4) Higher payment rate applies if the whole farm is converted.
5) Payment rate differs between regions and further differentiation categories. The different payment categories are not implemented in every region.
6) Highest payment rate of 977 EUR/ha for fruits respectively of 1,126 EUR/ha for wine in País Vasco. 7) Exchange rate: EUR 1 = PLZ 4.1551 (average 2011). 8) Exchange rate: EUR 1= SEK 9.0359 (average 2011).
9) Exchange rate EUR 1 = GBP 0.8668 (average 2011). 10) Payment rate was submitted in EUR. 11) Very low payment rate is paid for rough grazing land in Scotland.

Source: Own illustration, based on data supplied by national experts

Source: Sanders et al. (2011: 19-21, 25-27)

Appendix 9. Measures addressing environmental issues in agriculture in OECD countries

Measure/Country	AUS	CAN	EU	JAP	KOR	MEX	NZL	NOR	SWI	TUR	US
Regulatory Requirements	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Environmental cross-compliance	NA	NA	XXX	X	X	NA	NA	XX	XXX	NA	XXX
Payments based on farming practices	X	X	XXX	X	X	X	X	XX	XXX	X	XX
Payments based on land retirement	NA	NA	X	NA	NA	X	NA	NA	X	NA	XXX
Payment based on farm fixed assets	X	X	X	X	X	X	X	X	X	X	X
Environmental taxes/charges	NA	NA	X	NA	NA	NA	NA	X	NA	NA	X
Tradable rights/permits	X	NA	NA	NA	NA	NA	NA	NA	NA	NA	X
Technical assistance/extension	XX	XX	X	X	X	X	XX	X	X	X	XX
Community based measures	X	X	NA	NA	NA	NA	X	NA	NA	NA	NA

NA – not applied or marginal; X – low importance; XX – medium importance; XXX – high importance.
The importance of the policy instruments in this table is related to the mix of the specific country. It is not designed to compare the importance of specific measures across countries.

Source: Vojtech (2010: 17)

AUS: Australia

CAN: Canada

EU: EU

JAP: Japan

KOR: South Korea

MEX: Mexico

NZL: New Zealand

NOR: Norway

SWI: Switzerland

TUR: Turkey

US: United States of America

Appendix 10. Agri-environment payments applied in OECD member countries in 2008

Programme/Country	AUT	AUS[1]	BEL[2]	CAN	CZE	DNK	FIN[3]	FRA	GER	GRC[3]	HUN	IRL	ITA	JAP	KOR	MEX	NLD[3]	NZL[1]	NOR	POL	PRT	SPA	SVK	SWE	SWI	TUR	USA	UK[4]
Payments for farming practices																												
Land improvement (liming, soil erosion prevention)	X	X	X	X			X	X	X				X		X	X		X	X	X	X	X	X	X		X	X	X
Payments for nitrate reduction	X	X	X			X	X	X	X	X			X		X				X	X	X	X	X	X	X	X		X
Nutrient management plan		X		X		X					X	X	X									X		X			X	X
Extensive crop production	X							X	X		X		X	X						X	X	X		X	X			X
Organic farming	X		X		X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X	X	X	X	X	X
Integrated production wine, fruits&vegetables	X		X		X			X			X		X			X						X	X					X
Integrated farming			X		X	X		X			X		X								X	X		X				X
Traditional methods of cultivation	X							X			X					X			X	X	X	X		X				
Reduced tillage/Mechanic weed control	X	X	X	X			X		X		X	X	X						X		X	X			X	X	X	X
Crop rotation				X				X	X		X		X			X				X		X					X	
Biological plant protection measures									X																			
Green manure crops		X																										
Green set aside/fallows	X	X		X		X		X			X		X		X		X					X			X		X	X
Catch crops, green/winter cover	X		X	X	X	X	X	X	X			X			X				X	X		X		X			X	
Extensive management of all land							X	X			X				X					X		X		X				
Extensive grassland management (pastures/meadows)			X	X	X	X		X	X		X	X	X		X		X		X	X	X	X	X	X	X	X	X	X
Conversion of arable land into grassland (pastures/meadows)				X	X	X		X	X		X		X									X	X		X		X	X
Grassland/biodiversity/habitat schemes	X	X	X	X	X		X	X	X		X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X
Biodiversity - local breeds	X		X				X	X	X		X	X	X		X	X			X	X	X	X	X	X	X			X
Biodiversity - local species and varieties of crops	X		X			X	X	X	X				X		X	X				X		X		X	X			X
Maintenance of wetlands and ponds[5]		X	X		X	X		X			X		X		X	X	X		X			X		X	X	X		X
Protected environmentaly sensitive areas/vulnerable zones		X	X		X	X		X			X	X	X		X	X			X			X			X	X	X	X
Shelter belts/buffer strips	X	X	X	X	X	X	X	X	X		X	X	X		X			X	X	X	X	X		X	X		X	X
Landscape elements/Amenities	X		X				X	X			X		X		X		X		X	X	X	X		X	X			X
Maintaining and improving groundcover		X																									X	
Water conservation																											X	
On-farm Energy Conservation																												
Payments for land retirement																												
Long term set-aside	X	X				X			X	X		X	X									X				X	X	
Afforestation		X	X		X	X		X		X	X	X	X	X	X	X	X	X		X	X	X	X			X	X	X
Conversion of farm land land int wetland and ponds						X	X						X				X							X			X	X
Converting pasture to perennial vegetation		X																										

1. In Australia, Canada and New Zealand there is a very limited use of payments to farmers (and, where payments are made, this is in the form of one-off or transitional payments) and support to agri-environmental programmes is provided mostly through general services.

2. In Belgium only programmes used in Flanders region are reported.

3. In Finland, Greece and Netherlands, the information for 2008 is not available and the programmes in the table correspond to programmes applied in 2000-06.

4. In United Kingdom only programmes used in England are reported.

5. In Spain the payments for water quality in wetlands is included in this line.

Source: Vojtech (2010: 21)

References

Anton, J. (2009) 'An Analysis of EU, US and Japanese Green Box Spending', in R. Melendez-Ortiz, C. Bellmann and J. Hepburn (eds) *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals,* pp. 137-238. Cambridge: Cambridge University Press.

Arsel, M. and B. Büscher (2012) 'Nature™ Inc.: Changes and Continuities in Neoliberal Conservation and Market-Based Environmental Policy', *Development and Change* 43(1): 53-78.

Baylis, K., S. Peplow, G. Rausser and L. Simon (2008) 'Agri-Environmental Policies in the EU and United States: A Comparison', *Ecological Economics* 65(4): 753-764.

Bellmann, C. and J. Hepburn (2009) 'Overview', in R. Melendez-Ortiz, C. Bellmann and J. Hepburn (eds) *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals,* pp. 1-16. Cambridge: Cambridge University Press.

Berthelot, J. (Last updated 2005) 'The WTO: Food for Thought?' (a webpage of Le Monde Diplomatique). Accessed June 1 2013 <http://mondediplo.com/2005/12/10food>.

Bhaskar, A. and J.C. Beghin (2009) 'How Coupled are Decoupled Farm Payments? A Review of the Evidence', *Journal of Agricultural and Resource Economics* 34(1): 130-153.

Brunner, A. and H. Huyton (2009) 'The Environmental Impact of EU Green Box Subsidies', in R. Melendez-Ortiz, C. Bellmann and J. Hepburn (eds) *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals,* pp. 468-495. Cambridge: Cambridge University Press.

Cahill, C. (2001) 'The Multifunctionality of Agriculture', *EuroChoices* 1(1): 36-41.

Cairns Group (Last updated 2012) 'An Introduction to the Cairns Group' (a webpage of Cairns Group). Accessed November 5 2013 <http://cairnsgroup.org/Pages/Introduction.aspx>.

CBD (Last updated 2013) 'Aichi Biodiversity Targets' (a webpage of Convention of Biological Diversity). Accessed September 14 2013 <https://www.cbd.int/sp/targets/default.shtml>.

Chatellier, V. (2009) 'The Distributional Structure of Green Box Subsidies in the European Union and France', in R. Melendez-Ortiz, C. Bellmann and J. Hepburn (eds) *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals,* pp. 258-303. Cambridge: Cambridge University Press.

Commission Directorate- General for Agriculture and Rural Development (2012) 'Agriculture in the European Union- Statistical and Economic Information 2012', Agriculture in the European Union-Statistical and Economic Information, pp. 1-353. Brussels: European Commission.

Commission of the European Communities (2007) 'Communication from the Commission to the European Parliament and the Council 'Preparing for the "Health Check" of the CAP Reform', No. COM (2007) 722 final. Brussels: Commission of the European Communities.

Commission of the European Communities., (2006) *Development of Agri-Environmental Indicators for Monitoring the Integration of Environmental Concerns into the Common Agricultural Policy : Communication from*

the Commission to the Council and the European Parliament. Luxembourg: Office for Official Publications of the European Communities.

Cuba et al. (2000) 'Agreement on Agriculture: Green Box/ Annex 2 Subsidies. Proposal to the June 2000 Special Session of the Committee on Agriculture by Cuba, Dominican Republic, Honduras, Pakistan, Haiti, Nicaragua, Kenya, Uganda, Zimbabwe, Sri Lanka and El Salvador**
**', Proposals containing positions on domestic support submitted in Phase 1, No. G/AG/NG/W/14, pp. 1-7. Geneva: WTO.

Diakosavvas, D. (2003) 'The greening of the WTO green box: a quantitative appraisal of agri-environmental policies in OECD countries', Conference: Agricultural Policy Reform and the WTO: Where Are We Heading, pp23-26.

ECA (2011) 'Is Agri-Environment Support Well Designed and Managed?', No. Special Report No. 7, pp. 1-80. Luxembourg: European Court of Auditors.

Eckersley, R. (2004) 'The Big Chill: The WTO and Multilateral Environmental Agreements'*, Global Environmental Politics* 4(2): 24-50.

EEB (Last updated 2013) 'Green CAP Reform in Tatters' (a webpage of European Environmental Bureau). Accessed October 24 2013 <http://www.eeb.org/EEB/?LinkServID=04FD2BA8-5056-B741-DBB0963BC075F0F0>.

Engel, S., S. Pagiola and S. Wunder (2008) 'Designing Payments for Environmental Services in Theory and Practice: An Overview of the Issues'*, Ecological Economics* 65(4): 663-674.

European Commission (2008) 'Note to the File: Direct Payments Distribution in the EU-25 After Implementation of the 2003 CAP Reform Based on FADN Data', No. SH D 2008, pp. 1-22. Brussels: European Commission.

European Commission (Last updated 2012a) 'Fifth Financial Report from the Commission to the European Parliament and the Council on the European Agricultural Fund for Rural Development (EAFRD) 2011 Financial Year : Report from the Commission to the European Parliament and the Council.' (a webpage of Publications Office of the European Union).

European Commission (2012b) 'Report on the Distribution of Direct Aids to Agricultural Producers (Financial Year 2011)', pp. 1-44. Brussels: European Commission.

European Commission (2012c) 'The Common Agricultural Policy: A Partnership between Europe and Farmers', No. ISBN 978-92-79-22067-8, pp. 1-22. Brussels: Publications Office of the European Union.

European Commission (Last updated 2013a) 'Agricultural Policy Perspectives, Member States Factsheets – may 2013, European Union' (a webpage of European Commission). Accessed August 14th 2013 <http://ec.europa.eu/agriculture/statistics/factsheets/pdf/eu_en.pdf>.

European Commission (Last updated 2013b) 'Agriculture and Environment: Introduction'. Accessed March 2 2013 <http://ec.europa.eu/agriculture/envir/index_en.htm>.

European Commission (Last updated 2013c) 'Agriculture and Rural Development, Glossary, Intervention Buying' (a webpage of European Commission). Accessed August 16th 2013 <http://ec.europa.eu/agriculture/glossary/intervention-buying_en.htm>.

European Commission (Last updated 2013d) 'Agri-Environment Measures' (a webpage of European Commission). Accessed October 31 2013 <http://ec.europa.eu/agriculture/envir/measures/index_en.htm>.

European Commission (Last updated 2013e) 'CAP Reform – an Explanation of the Main Elements, European Commission - MEMO/13/621, 26/06/2013' (a webpage of European Commission). Accessed October 25 2013 <http://europa.eu/rapid/press-release_MEMO-13-621_en.htm>.

European Commission (Last updated 2013f) 'EUROSTAT: Agriculture Statistics' (a webpage of European Commission). Accessed November 1 2013 <http://epp.eurostat.ec.europa.eu/portal/page/portal/agriculture/introduction>.

European Commission (Last updated 2013g) 'Political Agreement on New Direction for Common Agricultural Policy, Press Release' (a webpage of European Commission). Accessed August 15th 2013 <http://europa.eu/rapid/press-release_IP-13-613_en.htm>.

European Council (2006) '2006/144/EC: Council Decision of 20 February 2006 on Community Strategic Guidelines for Rural Development (Programming Period 2007 to 2013)', *Official Journal - European Union Legislation* L(55): 20-29.

European Council (2009a) 'Council Regulation (EC) no 73/2009 of 19 January 2009 Establishing Common Rules for Direct Support Schemes for Farmers Under the Common Agricultural Policy and Establishing Certain Support Schemes for Farmers, Amending Regulations (EC) no 1290/2005, (EC) no 247/2006, (EC) no 378/2007 and Repealing Regulation (EC) no 1782/2003 (OJ L 30, 31.1.2009)', *Official Journal - European Union Legislation* L(30): 16-99.

European Council (2009b) 'Council Regulation (EC) no 74/2009 of 19 January 2009 Amending Regulation (EC) no 1698/2005 on Support for Rural Development by the European Agricultural Fund for Rural Development (EAFRD)<*br* />', *Official Journal - European Union Legislation* L(30): 100-111.

European Economic Community (1957) 'The Treaty of Rome on the Establishment of the European Economic Community'. Treaty, European Economic Community.

European Parliament (Last updated 2013a) 'EU Farm Policy Reform Provisionally Agreed by Parliament, Council and Commission' (a webpage of European Parliament). Accessed October 27 2013 <http://www.europarl.europa.eu/sides/getDoc.do?type=IM-PRESS&reference=20130124BKG59668&language=EN#title3>.

European Parliament (Last updated 2013b) 'The Treaty of Rome and the Foundations of the CAP' (a webpage of European Parliament). Accessed August, 13th 2013 <http://circa.europa.eu/irc/opoce/fact_sheets/info/data/policies/agriculture/article_7208_en.htm>.

European Parliament (2011) 'Definitive Adoption of the European Union's General Budget for the Financial Year 2011, ISSN 1725-2555', *Official Journal - European Union Legislation L* 54(L 68): 1-1835.

European Union (2011) 'Domestic Support- European Union, WTO Notifications', Committee on Agriculture - Notification - European Union - Domestic support, No. G/AG/N/EEC/68, pp. 1-21WTO.

European Union (2012) 'Domestic Support- European Union, Notification Under Article 18.3 of the Agreement: New Or Modified Domestic Support Measures Exempt from Reduction', Committee on Agriculture - Notification - European Union - Domestic support, No. G/AG/N/EU/11, pp. 1-6. Geneva: WTO.

European Union (Last updated 2013) 'Agriculture Information Management System' (a webpage of WTO). Accessed October 31 2013 <http://agims.wto.org/>.

Fairhead, J., M. Leach and I. Scoones (2012) 'Green Grabbing: A New Appropriation of Nature?', *The Journal of Peasant Studies* 39(2): 237.

FAO (Last updated 2013) 'FAOSTAT: Food and Agricultural Commodities Production' (a webpage of Food and Agriculture Organization). Accessed November 1 2013 <http://faostat.fao.org/site/339/default.aspx>.

Galperin, C. and I. Doport Miguez (2009) 'Green Box Subsidies and Trade-Distorting Support: Is there a Cumulative Impact?', in R. Melendez-Ortiz, C. Bellmann and J. Hepburn (eds) *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals,* pp. 239-257. Cambridge: Cambridge University Press.

Gay, S. and et al. (2005) 'Recent Evolution of the EU Common Agricultural Policy (CAP): State of Play and Environmental Potential', *MEACAP WP6 D4b, Federal Agricultural Research Centre, Braunschweig and Institute for European Environmental Policy, London* .

Glebe, T.W. (2007) 'The Environmental Impact of European Farming: How Legitimate are Agri-Environmental Payments?', *Review of Agricultural Economics* 29(1): 87-102.

Khor, M. (2009) 'Analysis of the Doha Negotiations and the Functioning of the WTO', *South Centre* November.

Khor, M. (2006) 'Impasse at the WTO: A Development Perspective', *Economic and Political Weekly* 41(45): 4659-4661+4663-4666.

La Vina, A., L. Fransen, P. Faeth and Y. Kurauchi (2006) 'Reforming Agricultural Subsidies: "No Regrets" Policies for Livelihoods and the Environment: World Resources Intitute White Paper.', pp. 1-29. Washington, DC: World Resources Institute.

La Vina, A. (2006) *Reforming Agricultural Subsidies : "No Regrets" Policies for Livelihoods and the Environment : WRI White Paper.* Washington, DC: World Resources Institute.

Lockie, S. (2013) 'Market Instruments, Ecosystem Services, and Property Rights: Assumptions and Conditions for Sustained Social and Ecological Benefits', *Land Use Policy* 31: 90-98.

Lohmann, L. (2008) 'Carbon Trading: Solution Or Obstacle?', *The Corner House (May).Accessed June* 4: 2009.

Massot, A. (Last updated 2013) 'Second Pillar of the CAP: Rural Development Policy' (a webpage of European Parliament). Accessed August 20 2013 <http://www.europarl.europa.eu/ftu/pdf/en/FTU_4.2.5.pdf>.

Matthews, A. (2010) 'How might the EU's Common Agricultural Policy Affect Trade and Development After 2013?', *An Analysis of the European Commission's November* .

Mayrand, K., S. Dionne, M. Paquin and I. Pageot-LeBel (2003) 'The Economic and Environmental Impacts of Agricultural Subsidies: An Assessment of the 2002 US Farm Bill & Doha Round', *Unisféra International Centre* .

McAfee, K. and E.N. Shapiro (2010) 'Payments for Ecosystem Services in Mexico: Nature, Neoliberalism, Social Movements, and the State'. Washington: Taylor & Francis Ltd. (http://www.tandfonline.com/doi/pdf/10.1080/00045601003794833).

Millennium Ecosystem Assessment (2005) *Ecosystems and Human Well-being: Synthesis*. Washington, DC: Island Press.

Millennium Ecosystem Assessment. (2005) *Ecosystems and Human Well-being Biodiversity Synthesis*. Washington, DC: World Resources Institute.

Moussis, N. (2007) *Access to European Union: Law, Economics, Policies*. (16th edn) Rixensart, Belgium: European Study Service.

Muradian, R., M. Arsel, L. Pellegrini, F. Adaman, B. Aguilar, B. Agarwal et al. (2013) 'Payments for Ecosystem Services and the Fatal Attraction of Win-Win Solutions', *Conservation Letters* : no.

Muradian, R., G. Froger, E. Garcia-Frapolli, E. Gomez-Baggethun, J. Gowdy, N. Kosoy et al. (2013) 'Payments for Ecosystem Services and the Fatal Attraction of Win-Win Solutions', *CONSERVATION LETTERS* 6(4): 274-279.

Muradian, R., E. Corbera, U. Pascual, N. Kosoy and P.H. May (2010) 'Reconciling Theory and Practice: An Alternative Conceptual Framework for Understanding Payments for Environmental Services', *Ecological Economics* 69(6): 1202-1208.

Nassar, A., M. Rodriguez, C. Costa and S. Nogueira (2009) 'Agricultural Subsidies in the WTO Green Box: Opportunities and Challenges for Developing Countries', in R. Melendez-Ortiz, C. Bellmann and J. Hepburn (eds) *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals,* pp. 329-368. Cambridge: Cambridge University Press.

OECD (2013a) 'Agricultural Policy Monitoring and Evaluation 2013. OECD Countries and Emerging Economies', pp. 1-380. Paris: OECD.

OECD (Last updated 2013b) 'Official Development Assistance Data 2001-2011' (a webpage of WTO). Accessed September 14 2013 <http://stats.oecd.org/qwids/#?x=1&y=6&f=3:51,4:1,5:3,7:1,2:262&q=3:51+4:1+5:3+7:1+2:262+1:1,2,25,26+6:2002,2003,2004,2005,2006,2007,2008,2009,2010,2011>.

OECD (Last updated 2013c) 'Official Development Assistance – Definition and Coverage' (a webpage of WTO). Accessed September 13 2013 <http://www.oecd.org/dac/stats/officialdevelopmentassistancedefinitionandcoverage.htm>.

OECD (2013d) *Policy Instruments to Support Green Growth in Agriculture.* Organisation for Economic Co-operation and Development.

OECD (2010) 'Environmental Cross-Compliance in Agriculture', pp. 1-47. Paris: OECD.

OECD (2009) 'Agricultural Policies in OECD Countries 2009: Monitoring and Evaluation', pp. 1-24. Paris: OECD.

Pagiola, S. (2004) *Paying for Biodiversity Conservation Services in Agricultural Landscapes.* Washington, D.C.: World Bank, Environment Department.

Porras, I., M. Miranda, D.N. Barton and A. Chacon (2013) 'De Rio a Rio +: Lecciones De 20 Años De Experiencia En Servicios Ambientales En Costa Rica', pp. 1-91. London: International Institute for Environment and Development.

Sanders, J., M. Stolze and S. Padel (2011) 'Use and Efficiency of Public Support Measures Addressing Organic Farming', pp. i-150. Germany: Johann Heinrich von Thünen-Institut (vTI)-Federal Research Institute for Rural Areas, Forestry and Fisheries.

Stancanelli, N. (2009) 'The Historical Context of the Green Box', in R. Melendez-Ortiz, C. Bellmann and J. Hepburn (eds) *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals,* pp. 19-35. Cambridge: Cambridge University Press.

Steenblik, R. (Last updated 2013) 'Global Subsidies Initiative's A Subsidy Primer, Chapter 3: Subsidy Types' (a webpage of International Institute for Sustainable Development). Accessed October 21 2013 <http://www.iisd.org/gsi/subsidy-types>.

Steenblik, R. (Last updated 2013) 'Global Subsidies Inititative's A Subsidy Primer, Chapter 2: The Effects of Subsidies' (a webpage of International Institute for Sustainable Development). Accessed October 21 2013 <http://www.iisd.org/gsi/effects-subsidies#staticeffects>.

Swinbank, A. (2009) 'The Reform of the EU's Common Agricultural Policy', in R. Melendez-Ortiz, C. Bellmann and J. Hepburn (eds) *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals,* pp. 70-85. Cambridge: Cambridge University Press.

Swinbank, A. and C. Daugbjerg (2006) 'The 2003 CAP Reform: Accommodating WTO Pressures', *Comparative European politics* 4(1): 47-64.

Tacconi, L. (2012) 'Redefining Payments for Environmental Services', *Ecological Economics* 73(1): 29-36.

Thurston, J. (Last updated 2011) 'EFAs V. Set-Aside' (a webpage of CAP Reform.eu). Accessed November 3 2013 <http://capreform.eu/ecological-focus-areas-versus-set-aside/>.

UNEP (2013) 'Agriculture', 'Agriculture', *Green Economy and Trade- Trends, Challenges and Opportunities,* pp. 45-88. UNEP.

UNFCCC (Last updated 2013) 'International Emissions Trading' (a webpage of United Nations Framework Convention on Climate Change). Accessed September 9 2013 <http://unfccc.int/kyoto_protocol/mechanisms/emissions_trading/items/2731.php>.

United Nations (Last updated 2013) 'World Population Projected to Reach 9.6 Billion by 2050' (a webpage of United Nations, Deparment for Economic and Social Affairs). Accessed November 2 2013 <http://www.un.org/en/development/desa/news/population/un-report-world-population-projected-to-reach-9-6-billion-by-2050.html>.

United Nations Conference on Environment and Development (1993) 'Agenda 21: programme of action for sustainable development ; Rio Declaration on Environment and Development ; Statement of Forest Principles : the final text of agreements negotiated by governments at the United Nations Conference on Environment and Development (UNCED), 3-14 June 1992, Rio de Janeiro, Brazil.', United Nations Dept. of Public Information.

Van Hecken, G. and J. Bastiaensen (2010) 'Payments for Ecosystem Services: Justified Or Not? A Political View', *Environmental Science and Policy* 13(8): 785-792.

Vojtech, V. (2010) 'Policy Measures Addressing Agri-Environmental Issues'. Organisation for Economic Co-operation and Development.

Wiggerthale, M. (2007) 'Surveys show EU's Green Box Subsidies are Trade-Distorting', No. Briefing Paper 41, pp. 1-8. Malaysia: Third World Network.

Wiggerthale, M. (2004) 'EU Agri-Environmental Policies in the Context of the WTO', pp. 1-38. Bonn: German Watch.

Will, M. and A. Winters (eds) (1995) *World Bank Discussion Paper: The Uruguay Round and the Developing Economies*. Washington DC: World Bank.

Wise, T.A. (2005) '04-02 "the Paradox of Agricultural Subsidies: Measurement Issues, Agricultural Dumping, and Policy Reform"'.

World Bank (Last updated 2013) 'World Development Indicators' (a webpage of World Bank). Accessed September 12 2013 <http://data.worldbank.org/data-catalog/world-development-indicators>.

WTO (1994) 'Agreement on Agriculture'. International Instrument, WTO members.

WTO (2001) 'Doha WTO Ministerial 2001: Ministerial Declaration**

** '. http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm, WTO.

WTO (Last updated 2004) 'General Council's Decision on the Doha Agenda Work Programme (the "July Package"), WT/L/579' (a webpage of WTO). Accessed November 3 2013 <http://www.wto.org/english/tratop_e/dda_e/draft_text_gc_dg_31july04_e.htm#annexa>.

WTO (Last updated 2013a) 'Agriculture Explanation, Domestic Support**
**' (a webpage of WTO). Accessed September 11 2013 <http://www.wto.org/english/tratop_e/agric_e/ag_intro03_domestic_e.htm>.

WTO (Last updated 2013b) 'Environmental Services' (a webpage of World Trade Organisation). Accessed September 4 2013 <http://www.wto.org/english/tratop_e/serv_e/environment_e/environment_e.htm>.

WTO (Last updated 2013c) 'Export Competition/Subsidies' (a webpage of World Trade Organization). Accessed May, 15 2013 <http://www.wto.org/english/tratop_e/agric_e/ag_intro04_export_e.htm>.

WTO (2013d) 'Trade Policy Review of the European Union, Report by the Secretariat', Trade Policy Review Body, No. WT/TPR/S/284. Geneva: World Trade Organization.

WTO (Last updated 2013e) 'Understanding the WTO: The Agreements, Overview: A Navigational Guide' (a webpage of WTO). Accessed September 12 2013 <http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm1_e.htm>.

Wunder, S. (2005) *Payments for Environmental Services: Some Nuts and Bolts.* Bogor: CIFOR.

Wunder, S. (2013) 'When Payments for Environmental Services Will Work for Conservation'*, Conservation Letters Conservation Letters* 6(4): 230-237.

Wunder, S., S. Engel and S. Pagiola (2008) 'Taking Stock: A Comparative Analysis of Payments for Environmental Services Programs in Developed and Developing Countries'*, Ecological Economics* 65(4): 834-852.

Zerbe, N. (2002) 'Contested Ownership: TRIPs, CBD, and Implications for Southern African Biodiversity'*, Perspectives on Global Development and Technology* 1(3-4): 294-321.