

Master Thesis

An Analysis of the Environmental Concern within the Common Agricultural Policy

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Academic degree aspired

Master (MA)

Wien, 2010

Studienkennzahl :	A 067 805
Studienrichtung:	Individuelles Masterstudium: Global Studies – A European Perspective
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Abstract: Being one of the first common European policies, the CAP had a deep impact on European landscapes by changing farming practices. Science and new forms of technologies initially served political and economical goals since environment was largely an unknown concern. Although its importance and consequences of its neglect was acknowledged, considerable amount of time was lost before it reached the agenda of policy makers in Europe. The thesis attempts to analyze the process of the development of CAP, its implications, trade-offs, and results as regard to environment. Case studies illustrate the current and ongoing debates in both former and new Member States regarding environment and its reflection in national and supra-national policies such as CAP. The key question delves into CAP's addressal of environmental concerns. Is the CAP the vanguard of environmental policy or is it only a contributor for meeting environmental standards?

Kurzbeschreibung: Als eine der ersten europäischen Gemeinschaftspolitiken hat die GAP über den Wandel von Praktiken in der Landwirtschaft einen hohen Einfluss auf den europäischen Landschaftsraum genommen. Wissenschaft und neue Formen von Technologie waren über lange Zeit nach politischen und wirtschaftlichen Kriterien ausgerichtet, da Umweltschutz ein noch weitgehend unbekanntes Thema war. Obwohl Bedeutung und Konsequenzen der Vernachlässigung von Umwelt durchaus bekannt waren, ging viel Zeit verloren, bis das Thema Umweltschutz endlich auf die Agenda der politischen Entscheider in Brüssel gelangte. Diese Arbeit nimmt sich zum Ziel, den Prozess der Entwicklung der GAP zu analysieren: Ihre Implikationen, ihre Trade-Offs und ihre Erfolge im Hinblick auf die Umwelt. Fallstudien werden die gegenwärtigen und zukünftigen Debatten um das Thema Umwelt in alten wie in den neuen Mitgliedstaaten illustrieren sowie ihre Widerspiegelung in nationalen und supranationalen Politiken, wie etwa der GAP, aufzeigen. Der Fokus liegt dabei auf der Frage danach, wie die GAP Belangen der Umwelt begegnet. Kann die GAP als Vorhut der Umweltpolitik gelten oder trägt sie vielmehr bloß dazu bei, anderswo ausgehandelte Umweltstandards einzuhalten?“

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List of Abbreviations

AES (Agri-Environment Schemes)
CAP (Common Agricultural Policy)
EC (European Community)
ECSC (European Community of Steel and Coal)
EEC (European Economic Community)
EIA (Environmental Impact Assessment)
EU (European Union)
SDS (Sustainable Development Strategy)

Introduction

“[A]griculture¹ plays a pivotal role in managing and maintaining landscapes around the world. However [...] both the expansion and increasing intensity of modern agricultural practices have had a huge impact on the natural environment.” (Warren, Lawson and Belcher 2008: 42)².

In Western Europe, the traditional integrated low-input low output system was replaced with highly intensive farming systems from the 1950's. Farming practices did no longer depend on natural environmental conditions, i.e. availability of natural resources, soils' natural regenerations, pests, weeds and diseases. The shift resulted in simplification of cropping systems and the polarisation of farming systems (Warren, Lawson and Belcher 2008: 44)³. In brief, new farming practices created new environmental challenges.

In most cases, the shift stemmed from new technologies and industries combined to agricultural policy. In the case of Europe, it was strongly induced politically with the aim of furthering the economic and political integration. In early stages of the European construction agriculture had been looked upon as a key element for furthering economic integration.

¹Agriculture refers to an activity of food and fiber production by a deliberate and controlled use of plants and animals. (Definition from Stachelberger)

Stachelberger, Dagmar. 1998. The Development of European Agriculture and Its Impact on Life-With a Special Reference to Common Agricultural Policy. Wien: Diplomarbeit.

²Warren, John, Lawson, Clare, and Belcher, Ken. 2008. The Agri-Environment. Cambridge: Cambridge University Press.

³Warren, John, Lawson, Clare, and Belcher, Ken. 2008. The Agri-Environment. Cambridge: Cambridge University Press.

Article 3 of the treaty of Rome signed in 1956 mentions “the adoption of a common policy in the sphere of agriculture” (Treaty of Rome quoted in Smit and Herzog 1992:1/46, from Meyer 1993: 6-7)⁴. The CAP’s impact however is not limited to the political and economic spheres alone as it modified European landscapes and farming practices. The creation of the CAP implied three pillars: creation of a single market for agricultural goods, community preference and a joint financial responsibility. Originally, agricultural policy concerned Belgium, France, Germany, Italy, Luxembourg, and the Netherlands but being an “acquis communautaire”, all new members-states had to subscribe to it.

After being hailed as a European achievement, the CAP was recognised as a source of new problems not so much because of environmental concerns but rather on the basis of economical critics. In the study, environmental refers to natural elements interfering with agriculture, i.e. water, soil, air and living systems in rural areas.

Environmental issues rose to prominence during the 1980’s and 1990’s - global warming was one of the first environmental appearances that drew global attention. However such concerns were not limited to agriculture. On the contrary, in the 1980’s, urban industries were considered the main source of contamination. The birth of an environmental policy was inevitable as it echoed an increasing concern shared by people within the EU. It took time however before it reached the agenda of policy makers in Europe.

⁴Meyer, Barbara Franziska. 1993. The Common Agricultural Policy of the EC: With special regard to the 1992 reform and the Uruguay Round of GATT negotiations. Wien: Diplomarbeit.

To what extent environmental concerns have become an area of interest in the CAP policy? To what extent have they been taken into account within the common agricultural policy?

The history of the CAP is well-documented though mostly under a historical perspective. The other sources on the environment and the CAP adopted a practical approach as it focused on the concrete consequences of agricultural practices on the environment. This academic work is a comprehensive and inter-disciplinary synthesis. It tries to grasp all the aspects in the field of environment and CAP. It seeks to integrate them into a larger socio-historical perspective, supplemented with legal references, beginning from the 1950's until 2000's. The CAP is exclusively referred through the environmental lens. The thesis combines a presentation of CAP's implications and motivations in drawing new forms of agriculture, the resulting consequences on nature and the building-up of environmental concerns within the CAP.

The thesis could be a starting point to comprehend the treatment of environmental concerns within the domain of policies in EU. It will contribute positively to the study of Global Studies. In the light of Copenhagen Summit 2010 to reach an agreement on global warming, the thesis's subject matter is particularly relevant in current global affairs. The level of tangled policies of EU offers a good example of the complexity of politics in today's world. Earth's environment affects the entire planet. Policies in one part of the world are bound to affect the international community's common resources of nature.

The thesis is divided into three main parts. In the first part the beginning of the CAP and its meaning for European farm systems is detailed, with particular emphasize to the different national priorities and the will for a safer and fairer society. Thereafter the aims and implications of the CAP are closely looked at. Modernization of agriculture and the transformations of farming practices are the causes of environmental problems. Agriculture however followed the transformation of European societies. The increase of environmental concerns would not have occurred without social transformations. It led to a new concern more perceptible in discourses than in actions. Agriculture started to be perceived as a threat for the environment.

The development of an agri-environment policy did not occur before the late 1980's. At that time, agriculture was already perceived as a cause of contamination. Agri-environment measures taken within CAP's reforms were both approved and criticised. Three subchapters study the evolution of agri-environment rules and regulations within the CAP and likewise areas. The question of costs which is often ignored with regards to environmental policy is also dealt with in order to explain the limits to changes and broaden the issue beyond EU's scope.

The third part delves into case studies with the aim of participating in the current debate on EU's agri-environment measures, specifically agri-environment schemes. Special attention is given to new member-states of Central and Eastern Europe.

With the help of the library of the University of Vienna, National Bibliothek Wien and online academic sources, mostly primary and

secondary sources, this thesis has made a concerted effort to study and comprehend the complexities of inclusion of environmental affairs within agricultural policies.

“The technocratic premise for the existence of a CAP is that agriculture in Europe should be made efficient and competitive in terms of world agriculture. The alternative premise for the CAP is that agriculture is a declining industry and agricultural policy is about managing that decline in a socially acceptable manner, so that the CAP should be a social policy.” (quoted in Kay 1998: 31)⁵

From an intensive European agriculture to the defense of the environment: the increase of environmental concerns within the CAP.

The idea of a common agricultural framework was at first not particularly appealing. The main Western European countries were experiencing trying times. Since these countries emerged from the horrors of WWII their priorities were different. Nevertheless, rebuilding countries necessarily meant regenerating both primary and secondary sectors of the economy. Soon, the CAP became a key policy of the European Community (EC), which to some extent, spearheaded the expansion of EC. This was particularly true with the new membership of countries such as Spain, an agrarian country.

The CAP mirrored the transformation of European societies and profoundly modified European landscapes and farming practices due to rapid modernisation.

1. The aims of the CAP.

Though the CAP did not come into force before the first binding agreement in the early 1960's, its objectives were detailed in the article 39 of the Treaty of Rome. The CAP intended to increase agricultural productivity by promoting technical progress, ensuring rational

⁵Kay, Adrian. 1998. The Reform of The Common Agricultural Policy. The Case of MacSharry Reforms. Wallingford: CABI Publishing.

development of agricultural production and the optimum utilisation of factors of production, in particular labour. It endeavoured to guarantee a fair standard of living for the agricultural community, to stabilize markets and secure availability of supplies and to ensure that supplies reach consumers at reasonable prices (Treaty of Rome from Meyer 1993: 9).⁶

In addition to these objectives, it was clear that maintaining traditional farming systems was no longer viable. It was deemed unfit to compete in the global agricultural sector. Therefore, in 1968, the Mansholt Plan suggested the removal of 5 million agricultural workers out of farming by 1980. Among these 5 million, three million were to receive pension benefits after the age of 55. (Kay 1998: 34)⁷

1. 1. A. Differing national interests for a common policy

A disparity in state outlook emerged between the Netherlands and France on the one hand, and Germany, Italy Luxembourg and Belgium on the other.

France, in spite of food rationing, witnessed a quick recovery in agriculture. The country looked for an external market to sell the small yet ever increasing surplus production. Besides, contrary to popular belief, politics did not seek to preserve peasantry since it was impossible to maintain traditional peasant structure indefinitely. For instance, the Vedel Report of 1969 pointed out that the number of peasants should

⁶Meyer, Barbara Franziska. 1993. The Common Agricultural Policy of the EC: With special regard to the 1992 reform and the Uruguay Round of GATT negotiations. Wien: Diplomarbeit.

⁷Kay, Adrian. 1998. The Reform of the Common Agricultural Policy. The Case of the MacSharry Reforms. Wallingford: CABI Publishing.

have been reduced to 700,000 by the mid-1980's (Gardner 1996: 22)⁸.

The idea of a common agricultural policy would allow France to export food via a common market to its neighbors. The Netherlands followed suit.

At the other end of the spectrum were Germany, Italy, Belgium and Luxembourg who faced a dramatically opposite situation: continued food supply deficit since the end of the war. In addition, Germany suffered food starvation twice in forty years. The division of the country did little for the Germans as it deprived the Federal Republic of Germany from large-scale farming areas located in the East. Despite food production problems, Germans refused to become dependent on overseas food production. It should be pointed out here that West Germany was stuck with industrial areas, and hence its main priority was regenerating industry. However the Germans soon realized that it was not possible to galvanize both industries and agriculture at the same time. Seeing that it was impossible to increase food production for economic and geographical reasons and due to the weight of industrial sector, industry was stressed on at the expense of agriculture. France's agricultural production came as a convenient compromise. Besides, the Community of Coal and Steel was already in existence and had successfully demonstrated that the biggest European enemies could work together without hindrances.

1.1.B. Assuring a safer and fairer society: achieving self sufficiency and protecting farmers

⁸Gardner, Brian. 1996. European Agriculture. Policies, production and trade. London: Routledge.

As highlighted before, the issue of food security was decisive. To have an idea of WWII long-term effect on food production, rationing tickets were still common in many countries in the 1950's. Therefore, maintaining peace in the long-run implied assuring a certain degree of food quantity to the country and a good network of food distribution. However, despite some common worries concerning food production, each country had its own vested interest in integrating its agriculture within the larger supra-national framework.

One of the other CAP's objectives was to assure a fair standard of living for the agricultural community (quoted in Meyer 1993: 9)⁹. The fact of the matter is that the fear of food starvation needs to be understood in a more complex social thought. Modern support mechanisms in agriculture have been set up from the Depression of the 1930's.

“What makes governments worry most about farmers is that they produce the single most important basic commodity of vital importance to human survival: food. [...] [M]aintenance of adequate food supplies is essential to human wellbeing and therefore to political stability. ” (quoted in Brian Gardner 1996: 5)¹⁰

Beyond or alongside this consideration, there was among countries that emerged from the horrors of WWII a political will to improve society as

⁹Meyer, Barbara Franziska. 1993. The Common Agricultural Policy of the EC: With special regard to the 1992 reform and the Uruguay Round of GATT negotiations. Wien: Diplomarbeit.

¹⁰Gardner, Brian. 1996. European Agriculture. Policies, production and trade. London: Routledge.

a whole. Hence not surprisingly, farm support policies looked at not only economical measures but also include a social component.

“Until the international agriculture revolution that followed the Second World War, world markets were just as unstable as individual national markets, making it necessary to protect farmers from the price-depressing effects of cheap imports.” (quoted in Gardner 1996: 5)¹¹

As welfare states, providing protections to farmers from market variations was seen in the same light as giving healthcare protection to all citizen. One key measure of the CAP was to guarantee farmers' revenues and thus maintain far better standards of farmers' life. It was decided that, every year, there would be a certain threshold under which farmers revenues would be guaranteed. This explains for instance, the price intervention system purchasing farm products above the global price rates. However price support systems are vicious circles.

“The expansion of agricultural output [...] was unprecedented as the system of price guarantees and grants supported increased agricultural production and the increased use by farmers of technologies such as fertilizers, pesticides, drainage and irrigation.” (Warren, Lawson and Belcher 2008: 44)¹².

¹¹Ibid : 5

¹²Warren, John, Lawson, Clare, and Belcher, Ken. 2008. *The Agri-Environment*. Cambridge: Cambridge University Press.

The price mechanism support relied on outputs which meant that farmers would be encouraged to produce more in order to gain profit. It led to dreadful impacts on the environment, especially because market prices were based on the total amount of output produced by all farmers (Stachelberger 1998: 31)¹³.

As a whole, support mechanisms were made up to ensure a fairer and safer society. The CAP came up in 1957. Nevertheless, its first implementation is dated back in 1962 when the first product was submitted to common rules. Besides, it was not before 1968 that CAP common prices were applied. The CAP was considered a success story of the European reconstruction during the first decades. This was mainly due to the fact that agriculture completely recovered to ensure security to an exponential population. European success was not limited to agriculture but could be observed in all major economic areas. The “Glorious Thirty” as named in France took place in some parts of Western Europe. No similar expression exists in English to describe the period between 1950’s to the 1970’s. The French expression illustrates the optimistic spirit of the time where, in all democratic Western countries, societies underwent big changes: welfare state, “endless” growth, access to consumption, food quantity, etc.

These transformations have the same common factor: an industrial modernization of agriculture.

¹³Stachelberger, Dagmar. 1998. The Development of European Agriculture and Its Impact on Life-With a Special Reference to Common Agricultural Policy. Wien: Diplomarbeit.

I.2. Modernized agriculture seen as the key to achieve self sufficiency

It is not to say that Europe was not modernized at that time. From the end of the 18th century, modernization had big impact on cities and urban landscapes. Rural communities were affected to a larger extent. There was an ongoing revolution in agriculture but it greatly varied from one country to another. Overall daily pace of life remained the same in European's countryside. There was for instance no electricity in fields unlike the manufacturing sector. It should be noted that one could find some experimentation with modernization done domestically within farmers' families. Though technical improvements had been found, agriculture was increasingly more intensive and specialized from the 19th century, 'full modernization' implying machinery and chemicals use did not fully reach European countryside before the 1950's. Labour machinery did not replace rural working force on a large scale before mid-twentieth century. Many farms did not use any automatic machines but relied on draft animals from which manure was used as the main source of nutrient input (Warren, Lawson and Belcher 2008: 44)¹⁴. However new modern support programs greatly encouraged farms' modernization. After the Second World War, Americans sped up many changes in European societies, affecting even the countryside. What did modernization imply for farming practices?

¹⁴Warren, John, Lawson, Clare, and Belcher, Ken. 2008. The Agri-Environment. Cambridge: Cambridge University Press.

1.2. A. Implications of modernization in agriculture: the evolution of practices - intensification and industrialization of farming methods.

Traditional agricultural practices relied on draft animals and had a certain understanding of natural cycles. As Warren, Lawson and Belcher put it:

“Crop production was dependent on the productivity provided by natural environment conditions. Agricultural production was limited by the availability of soil water; the natural fertility of the soil: and pests, weeds and diseases. [...] The interval between crops was based on the time necessary to build up the natural supply of nutrients.” (2008:43)¹⁵.

One common practice was for instance to set-aside some lands in order to regenerate them. These traditional methods have designed European landscapes with hedge rows and field margins. Alongside which they also allowed a bigger biodiversity since different types of trees and grasses have grown in a same area. Traditional European agriculture consists mainly of cereals, truck farming such as beets or cabbages and in life stocks. But this is only a general picture since agricultures' production depended greatly on climate and geographical location.

Modernization of agricultural practices first meant intensification of yields and intensification of cropping years through three linked processes: mechanization, chemicalization and monocultures. In a way, they all refer to the use of new technologies in agriculture.

¹⁵Ibid : 43

The introduction of mechanized machines allowed farming of more lands. Bigger farm structures were privileged at the expense of small farm structures. Along with price support mechanisms, the CAP sought to favour structural policy of consolidation and amalgamation of fragmented farms.

“Consolidation refers to the bringing together of scattered strips within the same farm holding, whereas amalgamation is the grouping of smaller, separate farm holdings into a larger single enterprise.” (quoted in Kay¹⁶ 1998: 32 referring himself to Tracy¹⁷)

In fact, big geometric fields that one can see nowadays date back from that period. In other words, farms expanded. Thus, the land's contours were not considered any more (quoted in Stachelberger 1998: 7).¹⁸

Mechanization deeply modified European landscapes making hedges, rows and likewise disappeared. An estimated 28% of hedgerows were lost between 1947 and 1974 in the UK. In addition to the CAP, some national policies accorded grants and subsidies for the removal of hedgerows to bring more land under agriculture. This change was aided by efficient drainage and irrigation systems (Warren Lawson and Belcher

¹⁶Kay, Adrian. 1998. *The Reform of the Common Agricultural Policy. The Case of the MacSharry Reforms.* Wallingford: CABI Publishing.

¹⁷Tracy, M. 1989. *Government and Agriculture in Western Europe 1880-1988*, 3rd Edn. London: Granada.

¹⁸Stachelberger, Dagmar. 1998. *The Development of European Agriculture and Its Impact on Life-With a Special Reference to Common Agricultural Policy.* Wien: Diplomarbeit.

2008: 59)¹⁹. As mechanization increased labour efficiency, there was no general awareness for preserving traditional landscapes.

“Today nearly all farm activities from plowing to threshing are mechanized and fossil fuels and electricity are substituted for labour.” (quoted in Stachelberger 1998: 7).²⁰

Furthermore, the joint effect of mechanization and support prices mechanism encourages farmers to shift their productions towards more profitable ones. Thus, the fifty last decades have witnessed an exponential increase in cereal production at the expense of other forms of cultures. Furthermore, some cereal land races have been privileged at the expense of others: in Europe, the area of wheat expanded while oat and barleys’ productions diminished.

In addition to the shift in production, genetic diversity was abandoned while monocultures became the new trend in European agriculture. To that extent, prices mechanism support favoured monocultures by laying emphasis on outputs.

“To achieve higher yields, crop uniformity was introduced by crossing genetically uniform lines of crops.” (quoted in Stachelberger 1998: 8).²¹

¹⁹Warren, John, Lawson, Clare, and Belcher, Ken. 2008. *The Agri-Environment*. Cambridge: Cambridge University Press.

²⁰Stachelberger, Dagmar. 1998. *The Development of European Agriculture and Its Impact on Life-With a Special Reference to Common Agricultural Policy*. Wien: Diplomarbeit.

²¹ Ibid : 8

Monoculture meant both the expansion of certain seeds at the expense of others and the introduction of hybrid plants. The standardization of plants prevents species from adapting to environmental changes and from resisting diseases. Therefore, it constitutes a threat to the sustainability of agriculture. In a documentary on genetic diversity entitled *Diverseeds*, Hanan Sela studied some wheat crops found in North Galilee and observes that

“Wheat that grows near of the rocks or away from rocks or in the valley is different one from the other. There is a big diversity here. And this diversity is not random, it is connected to the habitat where the wheat it grows. So we can find here many different genotypes, or phenotypes of wheat in a very small place. And these phenotypes can be utilized for disease resistance, disease like rust. Rust comes with the wind from cultivated wheat from either North Africa or Europe, and in fact the wheat here. Now some of the plants here would be more sensitive to the diseases and some less. There is selection pressure.” (*Diverseeds Plant Genetic Resources for Food and Agriculture*)²²

In Europe, tremendous effects on genetic resources were a result of agricultural policies, most notably the seed legislation introduced by Brussels.

²² Schmidt, Markus and Meinhart, Camillo. 2009. *DIVERSEEDS. Plant Genetic Resources for Food and Agriculture*. Vienna: Documentary Film produced by Idialog.

“Within Europe we have legislation that protects plant breeders rights, so to insure that legislation is enacted you have to have your seed, your varieties, registered, and there is a cost association with registering your seeds on that list, the cost has to be made annually, so before you made hundreds, thousands of varieties from all the crops growing in Europe, immediately when people had to start paying a fee, each year to register their seeds so they could be sold in Europe, then immediately you have a huge drop in the number of varieties the people will willing to pay this fee so they could be sold. So you have huge genetic erosion. It was a legislation that was introduced to protect the plant breeding companies, but had a very detrimental effect on agrobiodiversity in Europe, which is interesting because the very varieties that they need to produce are base on the genetic diversity that is present in all of those old varieties. So there is a paradox there, between plant breeders needing diversity but in gaining diversity and using it, causing the lost on diversity.” (Interview of Nigel Maxted)²³

Steep prices and the desire for higher yields explain the introduction and expansion of monocultures. In addition, the development of greenhouses allowed many seeds and plants to be grown everywhere: culture locations were no longer chosen due to their suitability for farming. Market gardeners like tomatoes are a good illustration.

²³Schmidt, Markus and Meinhart, Camillo. 2009. DIVERSEEDS. Plant Genetic Resources for Food and Agriculture. Vienna: Documentary Film produced by Idialog.

Live stocks were also not spared. On the contrary, the separation of arable and livestock production, in other words, the polarization process (Warren, Lawson and Belcher 2008: 60)²⁴ allowed intensive livestock production.

“In the low countries of western Europe, in particular, the effluent output of the livestock industry has long since exceeded the capacity of arable and grassland to absorb it.” (quoted in Gardner 1996: 156).²⁵

They suffered a loss in diversity as well so that today,

“[D]airy production is dominated by the Holstein breed. Holstein cattle in Europe [...] account for 60 per cent [...] of the dairy cattle population, respectively. Such extreme specialization narrows the genetic base.” (quoted in EPA Associates 1999: 15)²⁶

Likewise seeds, some live stocks grew at the expense of others. This is the case for pigs, chicken and cows. The expansion of farms and machinery gave birth to an industrial exploitation of live stocks. Battery hens and chickens represent certainly the best illustration of these industrial practices.

Finally, modernization of agriculture also pushed farmers to give up natural fertilizers and to replace them with chemicals and pesticides.

²⁴Warren, John, Lawson, Clare, and Belcher, Ken. 2008. *The Agri-Environment*. Cambridge: Cambridge University Press.

²⁵Gardner, Brian. 1996. *European Agriculture. Policies, production and trade*. London: Routledge.

²⁶EPA Associates. 1999. *Agriculture and the Environment. Development of European Union Agri-Environment Policy*. London : Agra Europe.

From then, soils exploitation became a matter of chemistry and not only a matter of techniques. Pesticides and fertilizers made miracles in increasing yields but they also impacted negatively directly (soil and water) and indirectly (wildlife) the environment. Throughout years, European agriculture has been trapped in a vicious circle. The over-use of chemical fertilizers and pesticides, indeed, brought multiplications of pests. And yet, lack of genetic diversity and monoculture practices led to a weaker resistance of seeds and plants to diseases. To counteract this, farmers had to use more fertilizers and more pesticides.

Thus, after the Second World War, food production increased thanks to new set of practices. The introduction of industrial machines and practices meant a radical change of understanding natural cycles. The CAP aimed to break up with traditional agriculture, too dependent on natural variations. That is how the CAP started promoting the use of industrial methods in farming practices. However, two restrictions should be added as regard to the 'pushing forward measures' for achieving higher yield. First, though CAP policies are considered a driving force in environmental damages, other policies have to be taken into account:

“[...]the role of other policies including those covering land ownership and tax, food safety and hygiene, social security and

interest rates, and other issues should not be overlooked.” (quoted in Institute for European Environmental Policy: 2).²⁷

Second, it would be wrong to say that the CAP was looking down upon traditional agriculture. It is just that the goal was, from now on, the improvement of production and efficiency. In fact, the CAP has always been a pragmatic policy.

To a great extent, agriculture only followed social transformations of Europe.

1. 2.B.Social transformations of society

Agricultural land and forestry cover the half of the EU's surface²⁸. This figure includes forest and fields and it differs greatly from one country to another. Finland is characterized by dense forests while Ireland's fields accounted for 70% of the territory in 1997²⁹. Nevertheless, Europe underwent a frenzied urbanization in the second half of the 20th century. As a result, numerous soils of good quality have been abandoned to exponential cities. Today, Paris and its region accounts for 20% of France's population.

As a result there is an increasing demand for food from urban population. While, simultaneously, semi-rural market gardener fields have sold to real estates. Although it seems pertinent to bridge the gap between rural and urban space, and define their respective roles, the

²⁷Institute for European Environmental Policy. Environmental Integration and the CAP. A report to the European Commission, DG Agriculture.

²⁸http://ec.europa.eu/agriculture/envir/report/fr/terr_fr/report.htm and European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

²⁹http://ec.europa.eu/agriculture/envir/report/fr/terr_fr/report.htm

combination of ever-expanding urban areas and industrialized agriculture has adversely affected the ecosystems. Take the case in Netherlands as an example with approximately 15 million inhabitants in the 1990's and counted 13.8 millions of pigs. Clearly, there was a serious threat to the environment (Data from Stachelberger 1998: 36)³⁰.

Not surprisingly, contamination levels in the limited area available are doubled: from agricultural activities and from urban activities. The solution to this problem does not lie in transporting food from "remote" rural areas to urban areas as it also contributes to contamination. The whole system of food production, right from food plantation to their storage in supermarkets, is a faulty one. It is to state the obvious that the fundamental issue is overconsumption in our societies. Modern agriculture practices are both a cause and a consequence of it and so is the CAP.

In the long-run, the capacity of soils to feed exponential urban areas on limited areas is going to be questioned, especially with increasingly eroded and poor agricultural soils.

"In almost all areas of dense human population and therefore heavy intensive livestock population there is an animal waste 'surplus' which is too often now adding to the already high levels

³⁰Stachelberger, Dagmar. 1998. The Development of European Agriculture and Its Impact on Life-With a Special Reference to Common Agricultural Policy. Wien: Diplomarbeit.

of nitrogen and phosphates in watercourses, lakes, seas and groundwater.” (quoted in Gardner 1996: 156)³¹.

Thus, agriculture implies in itself nature's domestication. That is why it transforms nature. However, modern practices make natural resources unstable. Though some questions were already raised in the 1950-60's concerning the environmental impacts of agricultural practices, few paid attention to it. The people who asked for a respectful balance in natural resources were seen as Cassandra's voices and thus marginalized.

How did environmental concerns gain attention in Europe?

1.3. Increase awareness of environmental concerns and agriculture

When one talks of the environment it is important to understand that it is an umbrella term. It encompasses all living and non-living things on Earth. Soil, water, air, microscopic as well as visible natural elements and phenomena are taken to be part of the environment. Within the scope of study, environment is limited to three elements: soil, water and air. The notion that environment, in the stricter sense of the term – nature, needs protection from human intervention, is universally claimed.

Environmental issues have increasingly gained prominence between 1950 and 2010. It is a talking point in almost all kinds of debates on policies, discourses and activities, at least as a matter of formality. All new construction and infrastructure works are expected to take the environment into consideration; everyone is supposed to be

³¹Gardner, Brian. 1996. European Agriculture. Policies, production and trade. London: Routledge.

environmentally conscience and try to protect the earth. It has become a matter of common duty.

How has environmental concerns been taken into account in EU's discourses and official texts?

1.3. A. Environmental concerns within EU's discourses

Many environmental concerns have not been seen the light of physical action. This is partly due to the fact that it took some time before the link between faulty agriculture practices and environmental damages was recognised. Hence it was not included in the first EU's regulation on the environment. However, from the 1970's, agriculture began to be perceived as a potential cause of large scale environmental damages.

“The EU's initial common approach to the environmental problem grew out of the United Nations Conference on the Human Environment held in Stockholm in 1972. The major preoccupation of that conference was with global action on pollution, soil degradation, resource depletion, ecological damage and climatic modification. It will be noted that that agriculture plays an important part in every of these five main headings.”
(quoted in Gardner 1996: 171).³²

Between 1972 and the mid-1980's, the European Community did not take any concrete action to tackle the emerging issue of environmental

³²Gardner, Brian. 1996. European Agriculture. Policies, production and trade. London: Routledge.

damage. This was despite the fact that first Action Programme on the environment was drawn in 1973. It identified four areas of intervention: reduction of pollutants and other nuisances, non-damaging use and rational management of land, environment and natural resources, general environmental protection and international cooperation (Gardner 1996: 171)³³.

In addition principles concerning the coordination between national and supra-national policies were also decided upon. However, there was no reference or plan of action to change agricultural practices, implying that it was considered a set-apart policy. Damages caused by the CAP were detected before 1992 and the first CAP reform. Carlo Ripa di Meana, a former EU Environment Commissioner declared that the CAP was 'an ecological failure' (from Gardner 1996: 165).³⁴ Yet the division between environmental policy and the CAP ran until 1992. Environment continued to remain as a secondary priority for European agriculture. It is even said that there was a rivalry between the Environment and the Agriculture Directorates.

Despite the revision of Action Programs on the environment in 1977 and 1983, almost no action was taken on ground. In the EC framework environmental issues stagnated within the arena of discourse. Green incentives became the prerogative of member-states acting individually. It should be pointed out here that lack of supra-national incentives

³³Gardner, Brian. 1996. *European Agriculture. Policies, production and trade*. Routledge: London.

³⁴Ibid : 165

further led to difficulty in conciliating national policies with a centralized European one, particularly in the field of energy.

It is, thus, not before the Single Act of 1986 that environment became an important policy area. As to agriculture and the environment, an EC Commission's document entitled "Environment and Agriculture" was the first official paper linking both.

Despite limited actions, Europe has gained legitimacy on environmental issues. However, the awareness or the political will for incentives did not reach each sector of the EU. In many aspects, the CAP resisted changes. This resistance came also from farmers who did not want to see their benefits threatened by the introduction of new measures. In fact, a discrepancy arose between farmers and societies.

1.3.B. Agricultural practices and European societies

The link between an exponential food production and a higher demand for consumption has already been mentioned. Paradoxically perhaps, the public perception of agriculture is not very good. It is easily ascertained that agriculture is one of the major causes of natural contamination. It is one of the reasons why organic farming has developed. Food standardization, in terms of height and ripening date (Stachelberger 1998: 8)³⁵, favoured consumers' high expectations. At the same time, it spoils food products and reduces genetic diversity. Organic farming practices are supposedly an alternative response to the mainstream system.

³⁵Stachelberger, Dagmar. 1998. The Development of European Agriculture and Its Impact on Life-With a Special Reference to the Common Agricultural Policy. Wien: Diplomarbeit.

A second paradox also exists. In essence, urban areas cannot be perceived as 'natural' environment while rural areas are. With the passage of time these non-urban spaces became recreation spots for city dwellers. Currently, agriculture activities are viewed as destroyers of this so-called 'natural' environment. As Brian Gardner writes:

“Europe’s environmental problem to a great extent arises from the concentration of population on relatively small areas of land. Major damage was done to large parts of Western Europe’s landscape and environment by industrialization in the nineteenth and twentieth centuries. Agriculture, on the other hand, has only recently ‘caught up’ in the environmental damage stakes.” (quoted in Gardner 1996: 154)³⁶

In fact, the damages it causes are even more dreadful.

The first part of the thesis has aimed to dwell upon two reflections. First, it showed how a progressive politics turned out to have detrimental effects. The thesis’ focus is limited to environmental aspects but the other negative effects linked to the CAP have been largely studied. As a whole, the CAP forms only one component of a more radical change in European societies. It reveals how far-reaching and distant is the relationship of second-half century societies to nature.

It is unlikely that agriculture could have been protected from the changing trends in societies. First, agriculture revolution began before

³⁶Gardner, Brian. 1996. *European Agriculture. Policies, production and trade*. London: Routledge.

WWII. Somehow it started before the 19th century. Second, there is a natural link between demography –notably Europe’s baby-boom- and agricultural needs. The increasing demand for food played a prominent role in shaping CAP policies. Without this relationship Europe could have faced food shortages.

The second reflection had to do with the limited protection of the environment in Europe. Although environmental concerns penetrated both public conscience and politics, efforts to contain it have remained quite superficial. To fully comprehend the situation one has to focus on stakeholders’ interests or interest groups, the prominent players and the institutions (Kay 1998: 80)³⁷. In the case of the CAP, farmers’ short-run interests have opposed greener measures, mainly due to economic reasons. Nevertheless, the 90’s witnessed the development of a European Environmental Policy.

³⁷Kay, Adrian. 1998. *The Reform of the Common Agricultural Policy. The Case of the MacSharry Reforms.* Wallingford: CABI Publishing.

“It is therefore clear that despite the frequent claims that the CAP as been ‘reformed’, the whole edifice of European agriculture is still based on a high-price/high-subsidy foundation which positively encourages maximum output.” (quoted in EPA Associates 1999)³⁸

The Development of a European Agri-Environment Policy

The CAP underwent three reforms processes in less than a decade. Within each, environmental concerns were given more prominence proving that former measures to tackle environmental issues were insufficient. For the first time, CAP 1992 encompassed environmental concerns as a main point to be dealt with in rural areas. However, instead of adopting a wide set of measures that could directly impact agricultural practices, CAP 1992 privileged the development of rural programs particularly those that focused on ecology. On the contrary, Agenda 2000 and CAP 2003 put the environment as the main focus -the second pillar- around which all politics should be organized. It is needless to say that drastic ecological measures are not compatible with Europe economic competitiveness. Before studying regulation and main elements of EU policy, it seems important to have a look on some specific environmental challenges engendered by agriculture.

II.1. Specific Environmental challenges

“Agriculture generates a wide range of effects on the environment.

Farming systems can help maintain traditional landscapes, preserve habitats and biodiversity, and contribute to the sustainable management of water and soil resources [...]. But agricultural

³⁸EPA Associates. 1999. Agriculture and the Environment. Development of European Union Agri-Environment Policy. London: Agra Europe.

activities can also lead to pollution or contamination of surface and ground water.” (quoted in EPA Associates 1999: 7-8)³⁹

II.1. A. Environmental degradation caused by arable farming practices (See Document 1)

As mentioned earlier, modernization of agriculture included mechanization, chemicalization and reduction of genetic diversity. Nevertheless, it is not always easy to measure impacts of agricultural activities for various reasons. First, other activities are responsible for contaminating the earth. In those locations where rural and urban areas are intermixed it is nearly impossible to know to what extent some activities are responsible for contamination. Second, other variables have to be taken into account: for instance, some regions may have naturally higher proportion of nitrogen, nitrates, phosphates and so on.

However, there are some tendencies that allow drawing of conclusions. European farmlands over-use fertilizers and give extra doses of plant nutrients with the aim of achieving higher yields. It is, therefore, possible to compare the change in plant populations in some similar areas by the use of artificial fertilizers. For instance it is suggested that agriculture is the major cause of contamination by nitrogen/nitrate and phosphates. It was estimated, in 2002, that 50 to 80% of the nitrates entering water stem from agriculture (Warren, Lawson, Belcher 2008: 56)⁴⁰. It takes between ten to twenty years for topsoil to be washed off nitrate. This has

³⁹EPA Associates. 1999. Agriculture and the Environment. Development of European Union Agri-Environment Policy. London: Agra Europe.

⁴⁰Warren, John, Lawson, Clare, and Belcher, Ken. 2008. The Agri-Environment. Cambridge: Cambridge University Press.

led to the EU deciding to limit nitrogen levels from livestock manure in nitrate vulnerable zones to 170kg N/ha per year (Data from European Commission Directorate-General for Agriculture).⁴¹ However, in some specific areas, notably Belgium, Denmark and the Netherlands, surplus is often greater due to higher rates of intensive livestock on smaller area. Besides, nitrogen reinforces acidification of soils (See Document 2 and 3 on Nitrate vulnerable zones in 2001 (km²)).

In fact, “the main environmental risks or hazards arising from modern agriculture in developed countries and Europe in particular are: (1) pollution of water supplies by nitrates and to a lesser extent phosphates; (2) wider damage to the environment arising from the over-use of fertilizers and run-off from intensive livestock production; (3) the damage to wildlife and plants resulting from the over-use or misuse of pesticides; and (4) damage to human health resulting from the misuse of pesticides.” (quoted in Gardner 1996: 154)⁴².

More precisely, pollution of groundwater by agriculture has become a serious threat in some EU territories. In Baden-Wurttemberg, Germany, nitrates exceeded EU maximum levels by 17 to 21.8 per cent in the first half of the 1980's (Gardner 1996: 159)⁴³. Moreover, some EU regions are confronting another problem. In southern Europe, irrigation accounts

⁴¹European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

⁴²Gardner, Brian. 1996. European Agriculture. Policies, production and trade. London: Routledge.

⁴³Ibid : 159

for more than 60% of water use (data from European Commission Directorate-General for Agriculture 2003: 9)⁴⁴. And yet,

“Irrigation is also the source of a number of environmental concerns, such as over-abstraction of water from subterranean aquifers, irrigation driven erosion, soil salinisation, alteration of pre-existing semi-natural habitats: and, secondary impacts arising from the intensification of the agriculture production permitted by irrigation.” (quoted in European Commission Directorate-General for Agriculture 2003: 9)⁴⁵

In southern Spain, the use of irrigation is draining out already poor levels of ground waters which could speed up the phenomenon of desertification. The problem of water contamination goes beyond the issue on neutrophication which is the increase of nutrients in water bodies that can stimulate excessive growth of algae, and in turn have a severe impacts on the whole ecosystem. This poses a grave danger to drinking water, in other words, for water consumption as a whole.

However, “The major threat to the environment comes from the strong expansion in intensive livestock production [...] Industrial production of pork, poultry and (feedlot) beef and mutton are the fastest

⁴⁴European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

⁴⁵ Ibid: 9

growing forms of animal production.” (quoted in EPA Associates 1999: 24).⁴⁶

II.1.B. Environmental degradations caused by intensive livestock

Intensive livestock too is a matter of grave concerns to both surface water and groundwater.

“European Commission studies show quite clearly that the livestock effluent disposal rates on the most densely populated areas of the Union-in the Netherlands and Belgium particularly-are between three and four times what scientists regard as MAC [Maximum Acceptable Concentration] nitrogens levels.” (European Commission 1988⁴⁷ found in Gardner 1996: 159⁴⁸)

In the most densely populated areas where there is a higher concentration of animal ‘waste’ surplus due to large intensive livestock population, the nitrogen surplus is ten times the quantity that plants can absorb (Gardner 1996: 158)⁴⁹. Intensive livestock is more responsible for leaving behind a greater nitrogen residue than any arable farming practices. In the same manner manure too damages the environment

⁴⁶“defined as production systems in which less than 10 percent of the feeds is produced within the production unit.” EPA Associates. 1999. Agriculture and the Environment. Development of European Union Agri-Environment Policy. London: Agra Europe.

⁴⁷European Commission (DCXI). 1988. Environment and Agriculture COM (1988) 338 Brussels.

⁴⁸Gardner, Brian. 1996. European Agriculture. Policies, production and trade. London: Routledge.

⁴⁹Ibid: 158

during storage and its application on the land (EPA Associates 1999: 25)⁵⁰.

“While the manure generated by grazing animals in open fields at low density has value of fertilizer, the manure of intensively farmed livestock has a negative impact on the environment.”
(Stachelberger 1998: 36)⁵¹

Storage of animal manure to use as fertilizer for farming is fast disappearing. The problem being that animal manure makes the soil more consistent. Consequently, the “non-use” of manure is causing an acceleration of soil erosion.

In addition, it is important to remember that livestock is responsible for greenhouse gas emissions, and thus, in global warming. The main greenhouse gas emissions agriculture is responsible for are: nitrous oxide (N₂O) due to nitrogen fertilization, methane (CH₄) for which agriculture accounts for 41% on the EU territory, and carbon dioxide (Data from European Commission Directorate-General for Agriculture 2003: 6).⁵²
(See Document 4 on the total emissions of methane and nitrous oxide in 2004 and the proportion resulting from agricultural activities).

To conclude on intensive livestock effects on the environment,

⁵⁰EPA Associates. 1999. Agriculture and the Environment. Development of European Union Agri-Environment. London: Agra Europe.

⁵¹Stachelberger, Dagmar. 1998. The Development of European Agriculture and Its Impact on Life-With a Special Reference to the Common Agricultural Policy. Wien: Diplomarbeit.

⁵²European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

“It has been estimated for example, that a modern (relatively small) farmland has a potential ‘pollution load equivalent to that of a village of 1000 inhabitants.’” (quoted in Gardner 1996: 156)⁵³

II.1.C. Agriculture and its consequences on soil degradation and Biosphere

With water, soil is the other main component in agriculture. Here too, agriculture causes soil degradation by speeding up soil erosion, including, the loss of soil itself. This is because farm soils are no longer protected by traditional land's contour and by natural cover -the moisture-holding capacity is far lower than in traditional agriculture- soils are more vulnerable to wind erosion. In 1992, the European Parliament Agricultural Committee on the Impact of Modern Farming on the Rural Environment⁵⁴ estimated that erosion was threatening at least 10 per cent of EU soils (data from Gardner 1996: 169)⁵⁵. Problem of soil degradation is affecting Belgium, Portugal, Bavaria (Germany), Brittany (France) and some parts of the UK.

There are different forms of soil degradation that agricultural practices exacerbate: erosion, desertification, water-logging and compaction – process leading to the formation of sedimentary rock. This is due to the over-use of chemicals bringing acidification and salination and other side-effects. Over-use of irrigation also contributes to soil degradation.

Modification of water supplies and soil has an affect on wildlife and habitats. Traditional farming practices and systems have produced a wide

⁵³Gardner, Brian. 1996. European Agriculture. Policies, production and trade. Routledge: London

⁵⁴European Parliament Agriculture Committee on the Impact of Modern Farming on the Rural Environment. 1992.

⁵⁵Gardner, Brian. 1996. European Agriculture. Policies, production and trade. London: Routledge.

range of semi-natural vegetation and habitats in Europe whereas natural vegetation has disappeared quite early (Warren Lawson, Belcher 2008: 58)⁵⁶ though semi-natural habitats have declined dramatically.

Agricultural practices reduce biodiversity in both direct and indirect ways. For instance, pesticides have long been accused of destroying numerous flora and fauna. Extinction of species can also be an indirect consequence of the destruction of their natural habitats due to usage of fertilizer and pesticides, eutrophication, drainage, irrigation, re-parcelling, agricultural land improvement, abandonment of traditional farming practices or of specific crops and animal productions (EPA Associates 1999: 15)⁵⁷. A high number of birds, insects, land and soil creatures have disappeared or are seriously endangered. The most famous example is the dreadful consequences of organochlorine-based pesticide on birds of prey (See Gardner⁵⁸ 1996: 164). Today, pesticides are forbidden but their consequences still persist. Here is emerging the second problem linked to agriculture vis-à-vis environmental damages. Environmental regulation aiming to end or to limit contamination may answer one facet of the issue but not the whole issue. Once contamination starts, the questions remain on how to eliminate it or on how to limit the negative effects.

Agriculture's detrimental effects on the environment have been increasingly recognized insofar as their effects were becoming

⁵⁶Warren, John, Lawson, Clare, and Belcher, Ken. 2008. *The Agri-Environment*. Cambridge: Cambridge University Press.

⁵⁷EPA Associates. 1999. *Agriculture and the Environment*. Development of European Union Agri-Environment

⁵⁸Gardner, Brian. 1996. *European Agriculture. Policies, production and trade*. Routledge: London

increasingly severe. In addition, systematic use of chemicals has led to an increasing frequency and costs of subsequent treatments for water and soil. Clearly, problem of costs such as “costs of ensuring clean water supplies” [...] “the costs of conserving threatened habitats” played a role in shaping EU green incentives (Stachelberger 1998: 35)⁵⁹. It remains that the answer is quite inefficient if not weak in front of such a big challenge. It seems quite absurd to set up expansive support policies which represent a big part of the EU budget and to be forced to repay for additional cleaning programs.

II.2. Agri-environment measures within the CAP's reforms: frameworks and regulations.

The CAP is a supra-national policy so objectives of different actors are intertwined. In the decision-making process of the CAP, there are two main bodies: the Council and the Commission. (Burrell and Oskam 2000: 37)⁶⁰. As for other policies, the Council decides policy agenda while the Commission is at the origin of any initiative to be examined by the Council. It also plays a key role in implementing policies. On a more informal level, one can find many stakeholders such as the COPA (the Association of European farmers' organizations), the BEUC, spokesman of consumers' organizations, the CODEGA representing agricultural cooperative (Burrell and Oskam 2000: 37)⁶¹. At a sublevel one can also

⁵⁹Stachelberger, Dagmar. 1998. The Development of European Agriculture and Its Impact on Life-With a Special Reference to the Common Agricultural Policy. Wien: Diplomarbeit.

⁶⁰Burrell, Alison and Oskam, Arie Edt. 2000. Agricultural Policy and Enlargement of the European Union. Wageningen: Wageningen Press.

⁶¹ Burrell, Alison and Oskam, Arie Edt. 2000. Agricultural Policy and Enlargement of the European Union. Wageningen: Wageningen Press.

find various groups representing farming sectors such as cereal sector. Agri-food firms and businesses account for many of these organizations. In spite of the great diversity of lands in Europe, there is a general consensus on the necessity to further environmental-friendly measures in agriculture. Yet, the shaping of agri-environment policies has to include both ecological measures and economical goals of European competitiveness. The fact is that, nowadays, agriculture cannot be considered as the only activity in rural areas. 'Rural' does not only refer to cultivating fields indeed. It encompasses other economic dynamics, the protection of landscapes as well as social relationships. The EU has increasingly tried to develop the last two visions since the 1990's through a new lens of actions. For example, farmers' revenues remain an important facet of the CAP social aspect but further reforms sought to integrate a more comprehensive views of actors in rural areas, notably women.

II.2.A. Agri-environment measures policies: an overview

Since the mid 1980's, the EU has developed a wide range of policy measures that constitutes a landmark for the purpose of studying the different stages of the environmental concerns in the CAP. However, a rapid overview of the main ones should be sufficient to analyze how the road has been paved so far. In 1997, the Treaty of Amsterdam put forward the idea of a sustainable development strategy (SDS). One year later, the Cardiff process urged the EU to develop comprehensive strategies to integrate environmental concerns in all EU's sectors. In

other words, both documents put the emphasis on structural change, hence implying a long-term strategy. Although, many of The Cork Declaration was not followed, both texts constituted the starting point of the second CAP reform that was achieved with the Agenda 2000. The environment is the essence of the second pillar with the first being the market policy.

The EU has simultaneously adopted several environmental measures whose scopes often interfere with agriculture, particularly regarding conservation of forests or water regulations. It is the case of Natura 2000 regulating birds' protection and areas of conservation. Whenever farms are located in some area of conservation, they are submitted to follow rules with regards to certain species of plants and animals. Likewise, water directives are issued to deal with groundwater, drinking water and nitrates, since they are directly linked to agriculture.

For the protection of wildlife and habitats specifically, the EU has set up an environmental impact assessment (EIA) which is compulsory for agricultural projects. EIA concerns itself with those projects that restructure land holdings, irrigation and draining lands, those that affect forests, projects dealing with intensive livestock, fish industry or production of exotic species (Agra Europe 1999: 42)⁶².

Environmental objectives have been designed for sectors-transport, energy- but also for natural media –air, water, and habitat. The CAP overlaps some of these directives though some environmental objectives within the CAP are specified.

⁶²EPA Associates. 1999. Agriculture and the Environment. Development of European Union Agri-Environment. London: Agra Europe.

II.2.B. "Greening the CAP" (European Commission Directorate-General for Agriculture)

"There was no reference to the environmental aspect of agriculture production in the early policy proposals, and the first attempts at reform in the 1970s and 1980s tended to regard the environment as ancillary to the need to establish a better balance between supply and demand and the improvement of agricultural efficiency." (quoted in EPA Associates 1999: 47)⁶³.

The Single Act paved the way for a legal basis to an environmental legal policy. A book entitled "Common Agricultural Policy Perspectives" had mentioned the necessity of reform as early as 1985. In the 1980's, the first step of the Commission had been to determine field of action. To that extent, four priority field of action were defined, respectively land usage, pesticides, intensive farming production and product quality. The 1990's has engendered a more active agri-environmental legislation vis-à-vis agriculture.

The MacSharry Reforms giving birth to CAP 1992 suggested several trails for a greener CAP. They were grouped into specific agri-environmental measures, measures of afforestation, measures on nitrate reduction and, last but not least, structural measures. Setting aside farmlands for 20 years with the purpose of establishing natural reserves

⁶³EPA Associates. 1999. Agriculture and the Environment. Development of European Union Agri-Environment London: Agra Europe.

and training farmers to use more environmental-friendly farming and forestry practices were put forward. Afforestation measures suggested to both expanding existing forests and developing forestry activities on farms. These measures have been successful: afforestation has contributed to the extension of 700 000 ha by 1997 (Data from EPA Associates 1999: 56).⁶⁴ As to the Nitrate Directives established in 1991, it focused especially on farming practices. The permitted EU levels for nitrate is 50mg NO₃/litre, however, in the 1990's, around 6 % of the EU population was using water exceeding this limit and 25% was using water exceeding the average level of 25 mg/l (Gardner 1996: 158)⁶⁵. In order to counteract this excess, all member states were expected to implement the Nitrate Directive 91/676/EEC by 1993 but many countries failed realizing Nitrates Vulnerable Zones by 1997. It was not before 2001 that the EU Directive was implemented. This example highlights two aspects: first, the EU is more likely to adopt regulation policies on agriculture if human consumption is threatened and when it is the case for water pollution by nitrate. Second, the EU may be confronted by member-states who are not willing to implement certain EU measures.

Structural measures emphasized lesser on a shift in market oriented policies than an awareness to preserve the rural world (biosphere and actors). However, for budget reasons, surplus products became undesirable: fixed quotas –notably on milk- were adopted, limits on the area of crops/numbers of animals for which a farmer could get subsidies

⁶⁴EPA Associates. 1999. Agriculture and the Environment. Development of European Union Agri-Environment. London: Agra Europe.

⁶⁵Gardner, Brian. 1996. European Agriculture. Policies, production and trade. London: Routledge.

were decided upon; policies for voluntary and compulsory set-aside lands were adopted. These measures that were designed to impact budget and market issues, had a certain effect on the environment, as it reduced surpluses and over-exploitation. Similarly direct payment of aid to farmers played a positive role in reducing agriculture productivity. In brief, it meant that farmers did not get support mechanisms from their output. On the contrary, direct payment of aid was linked to some environmental-friendly practices. The EU encouraged the decrease of certain production while guaranteed prices for cereals, beef and veal were reduced (European Commission Directorate-General for Agriculture 2003: 2)⁶⁶.

All these policies were insufficient for environmentalists; nevertheless, it reflected the beginning of an environment consideration under economic views.

In EU's agricultural policy, rural development is a concept designed mainly for lesser favoured areas (LFAs). This umbrella term covers abandoned areas threatened by depopulation, mountainous areas, semi-rural areas and other areas with specific handicaps. Until today, they remain priority zones in CAP policies since their coverage was still about 56% of EU's agricultural land in 1998 (Data from European Commission Directorate-General for Agriculture 2003: 4 -See Document 5)⁶⁷. In particular, it is through the concept of rural development that the CAP started planning ecological measures. If the EU gave some general guidelines through directives and regulation, decisions were made by

⁶⁶European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

⁶⁷Ibid: 3

member-states and regional entities. They in turn set up plans on the basis of which projects had to be designed. Hence implementation of programs' policies could only be enacted under the responsibility of Member states. The overall rural development is organized into a hierarchy. The thesis does not aim to study plans of rural development but highlights those several set up within the CAP such as LEADER. Most projects presented aimed to develop rural alternative economies with an ecological perspective. Examples of rural development policies can be found in the rise of rural cottages and craft industries which explains the increase of rural tourism in Europe since the mid 1990's. Another example is the promotion of organic farms through rural development programs.

Thus, if CAP 1992 has integrated an environment prospect, it has been done under a larger program of rural development. It is not to deny that some measures have been specifically focused on the environment but they did not constitute a sufficient breakthrough. Besides, most measures aimed to only create or maintain preserved areas. In other words, it did not tackle environment damages directly, nor did it look at solutions for "depolluting" rural areas (except if one counts the creation of natural areas. This can only be one answer to the question 'how to act upon already polluted areas?').

The Agenda 2000 went one step further. Direct compensation of payments were kept as a key element of any future agricultural policy (EPA Associates 1999: 53)⁶⁸. In accordance to direct compensation of

⁶⁸EPA Associates. 1999. Agriculture and the Environment. Development of European Union Agri-Environment. London: Agra Europe.

payments, cross-compliance measures, good farming practices and modulation were introduced.

The CAP transformed itself into being demand driven where farmer' revenues became independent from their output. Besides, due to the diversity of lands in Europe and due to the future enlargement of Europe, national and regional programs were stressed on. Thus, agri-environment programs elaborated by Member-States were made compulsory. Countries could set up agri-environment schemes or sanctions in case farmers did not respect new EU rules on environment such as respecting maximum permitted volumes of fertilizers per hectare. This has been termed cross-compliance measures. They have been described as a way to reinforce and support high environmental standards in agriculture (European Environmental Advisory Council 1999:2)⁶⁹. Member-States had to implement agric-environment measures, implement environment legislation, and implement specific environmental requirements.

Second, in order to get payments, farmers had to respect a set of standards for environment, food safety, phytosanitary and animal welfare. In a way, the environmental concerns' importance was the same as food safety and, to a lesser extent, animal welfare. As mentioned before, EU regulations are more likely to occur if human food safety is at stake. Following the same path of ideas, this safety trend, being actually a rejection of industrial and chemical productions, is common to developed countries since 2000s. Therefore, 'good farming practices'

⁶⁹European Environmental Advisory Council. Feb. 1999. Environmental Aspects of the Agenda 2000 Proposals on Agriculture.

were reinforced and became central for those who wanted to receive aid payments. Nevertheless, it is to be noted that these practices are far behind all the scope covered by the 'polluter pays principle'⁷⁰. To address this challenge, the EU developed a set of green practices going beyond 'good farming practices'. It is within this framework that any specific agri-environment measure is encompassed. "[I]t is not essential that there is a common European definition of good agricultural practice. Rather, there may be some core elements lay down at EU level, supplemented by more detailed specifications which are best developed at regional level in most countries." (European Environmental Advisory Council 1999: 2)⁷¹

Finally modulation concerned both the possibility for Member-States to increase the budget available for agri-environment programs through direct payments to farmers (European Commission Directorate-General for Agriculture 2003: 4)⁷² and the possibility of diversify agricultural production. That is why Agenda 2000 has favoured multi-functional forms of agriculture (European Environment Advisory Council 1999: 1)⁷³. This meant a renewal of genetic diversity, notably concerning cereals (which still, can be viewed as a market oriented concern though).

In 2003, a new reform of the CAP for which the scope was far more restricted, reinforced environmental integration within the CAP. A single payment scheme was introduced

⁷⁰'Polluter Pays Principle' is a notion developed by OECD "according to which the polluter should bear the cost of measures to reduce pollution according to the extent of either the damage done to society or the exceeding of an acceptable level (standard) of pollution." <http://stats.oecd.org/glossary/detail.asp?ID=2074>

⁷¹Ibid: 2

⁷²European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

⁷³European Environmental Advisory Council. Feb. 1999. Environmental Aspects of the Agenda 2000 Proposals on Agriculture.

“no longer linked (coupled) to production of specific crops or breeding of animals, but based on historical reference levels of direct support received by farmers.” (European Commission Directorate-General for Agriculture 2003: 3)⁷⁴

Cross-compliance and modulations measures became mandatory. Farmers must maintain their lands in good environmental conditions with good agricultural practices.

Thus, it is legitimate to acknowledge the effort for ‘greening the CAP’ made throughout the 90s and 2000s. However, it is also legitimate to call into question the scope of green incentives. Two problems are intertwined here. The market oriented CAP remained. In that sense, the CAP only obeys to the current economic model and its spokesman, the World Trade Organization (WTO). However the problem is far-reaching: how does one preserve competitiveness without damaging the environment? The issue is blatant in the case of agriculture but sectors, activities or phenomena other than agriculture, aircraft industry and chemical industry raise the same problem. Urbanization is not pointed out enough in relation to its impact on the environment though human density on small areas arise problem of food and water transportation, endanger species etc. As long as the human population continues to grow, pressure on the environment is likely to increase as well. The choice of the CAP has been to modify a set of measures in the first pillar

⁷⁴European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

(market) and to compensate it by developing alternative environmental measures (second pillar). Since the situation has become so serious that it is unlikely to be a self-sufficient solution. In addition, many environmental measures set up by the CAP lack precision and targets and are not used by Member-States. The lack of precision is partly due to the fact that agriculture meets larger environmental measures for which farmers are, anyway, forced to meet standard requirements. Thus, the common opinion among CAP designers and stakeholders is that the role of the CAP is not to design specific environmental legislation or to set specific standards. What the CAP has done until now, is to take part in the implementation of standards and legislation. In other words, the CAP

“can contribute significantly to the [adjustment] of the farm sector to society’s changing expectations and requirements on the environment.”
(Institute for European Environmental Policy 5)⁷⁵

It explains the design of the current CAP, its positive sides, its limits and its short-comings.

Furthermore, the problem of policy design is also a problem of cost.

II.2.C. Costs of environmental policy for agriculture.

Since they are responsible of implementing EU’s legislation, member-States are the stakeholders with greater interests in evaluating the costs of environment policy. As a whole, the implementation of such policy has imposed increasing costs on the industry, especially for intensive

⁷⁵Institute for European Environmental Policy. Environmental Implementation and the CAP. A Report to the European Commission DG Agriculture.

livestock productions. The most famous example remains the Netherlands forced to cut pig production because of increasing environmental pressures. From 1995, the Dutch Government cut by 30 % pig production in order to avoid manure surplus and in 1998, it cut off by 10% pig production with the expectation of a 15% decrease around 2000 (Gardner 1996: 154⁷⁶ and EPA Associates 1999: 83⁷⁷).

Besides, as any other economic sector, agriculture is monitored by the WTO. It happened several times that EU incentives were declared non valid in relation to international trade rules. Most of them did not imply environmental concerns but rather purely competitive aspects (subsidies etc...). Nevertheless, green incentives could have been perceived as hiding protectionism. The problem is that many countries are either reluctant or economically too weak to implement deep green reforms. It is, indeed, not easy to find a good compromise which implies both deep environmental effects and full liberalization. In the EU, agriculture accounts for one of the most global competitive sectors. Therefore, trade-offs 'environment vs market' has been always limited in reach.

Actually, three problems are linked: one is about losing competitiveness, a second deals with WTO regulation on trade, and the third one has to do with high short-term costs of environmental policy. Thus, if any country or regional organization is to claim (radical) green incentives-and none of them is likely to adopt radical measures- the EU is unlikely to green the CAP forward.

⁷⁶Gardner, Brian. 1996. *European Agriculture. Policies, production and trade*. London: Routledge.

⁷⁷EPA Associates. 1999. *Agriculture and the Environment. Development of European Union Agri-Environment*. London: Agra Europe.

Addressing environmental issues, the WTO has set up a “green box” which, supposedly, allows agriculture green policies with minimal effects on trade.

“The problem is however to define when a policy involving subsidies and costs to the agricultural industry-as environmental policy inevitably must be- has a trade distorting impact.” (EPA Associates 1999:99)⁷⁸

That is why, the notion of ‘production neutrality’ (EPA Associates 1999: 99)⁷⁹ is called unclear in itself.

At last but not least, though environmental damages are global, standards may change from one country to another. Environmental damages can be valued differently. For instance, genetically modified crops (GMC) are largely commercialized in the US, being also promoted as the best way to feed global population while minimizing environmental effects by reducing chemical inputs and minimizing costs. On the contrary, until now, Europe has been very circumspect about GMC technology.

Thus, the costs of environment policy to agriculture impact nationally, regionally and internationally. If costs concern above all Member-states, the true home of decisions is international. Do most countries want to adopt radical measures to preserve the environment? Division between Northern and Southern countries should be recalled as

⁷⁸Ibid: 99

⁷⁹Ibid: 99

their responsibilities for the contamination of the earth by agriculture differ greatly.

In conclusion, the second part of the thesis aimed to present the integration of environment measures in the CAP. The idea however was not to study each environmental regulation which would have led to a listing. The goal was to present the general evolution in the last two decades. To that extent, it was necessary to study some environmental impacts caused by agriculture.

After having promoted a frenzied/frantic modernization of agriculture, the CAP has been trapped in its own system of 'higher yields' and 'short-term prospects'. Although some progress has been made, environment damages have been so far that environmental measures promoted by the CAP always seem to come too late. One should add that agriculture is but one facet of the answer. Thus, an important progress would be made if the EU would finally develop an efficient environment policy that could be applied into different fields. Besides, Member states still have the main role to make it fully efficient. The fact nonetheless that the focus for Environment policy is on industries and transports show quite clearly that the CAP will follow its own logic.

Until now, the key measure of agri-environment policy has been the development of agri-environment schemes. The last two chapters have tried to develop a theoretical analysis. The following and last chapter will present agri-environment schemes and will deal with case studies.

“The objectives of these programs usually reflect a combination of the main environmental, ecological and socio-economic problems associated with agriculture, as well as the political situation in each country.” (quoted in Kleijn and Sutherland 2003: 949)⁸⁰

A specific agri-environment policy: two case studies on agri-environment schemes (AES).

Agri-environment schemes are a solution for heterogeneous landscapes confronting (un)similar situations. It should be borne in mind that in market oriented sector, agri-environment schemes are just correctors of market failures and cannot resolve difficult problems.

“With respect to the agri-environment, the agri-environmental measures are developed to address at least one of two broad objectives: (1) reducing environmental risks associated with farming (decreasing external costs); and (2) preserving nature, native and cultivated landscapes (increasing external benefits).”
(Warren, Lawson and Belcher 2008: 79)⁸¹

In other words, maintenance and enhancement of existing landscapes, reduction of harmful farming emissions, prevention of rural depopulation and promotion of biodiversity, were the primary goals. Amongst agri-environmental schemes, the point on biodiversity was the most popular.

⁸⁰Kleijn, David and Sutherland, William J. 2003. “How effective are European agri-environment schemes in conserving and promoting biodiversity?” in *Journal of Applied Ecology*. 40, 947-969.

⁸¹Warren, John, Lawson, Clare, and Belcher, Ken. 2008. *The Agri-Environment*. Cambridge: Cambridge University Press.

Most schemes are designed in accordance with country's objectives. The AES concerned itself with wildlife issues and habitat concentration in the Netherlands, while in Germany and Denmark focused on the reduction of chemical emissions in Germany and Denmark. In France, problem of land abandonment and their subsequent consequences for the environment was addressed

Their design also tries to target several objectives. However objectives can be conflictive or that it may not be possible to achieve multiple objectives within a single policy measure (Warren, Lawson, Belcher 2008: 79)⁸². In 2004, around 20% of farmland areas were under AES. As schemes are designed and implemented by Member-states, they obey a common framework.

III. 1. Presentation of European agri-environment schemes

Agri-environment schemes are contracts that run for minimum five-year period, for which farmers commit to adopting environmentally-friendly farming practices in lieu of compensation for the loss of productivity. In 2002, these programs accounted for almost 2 billion of rural development programs (European Commission Directorate-General for Agriculture 2003: 3)⁸³; and since 1994, around 24.3 billion has been spent for such programs (Kleijn and Sutherland 2003: 947)⁸⁴. EU co-financing

⁸²Ibid: 79

⁸³European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

⁸⁴Kleijn, David and Sutherland, William J. 2003. "How effective are European agri-environment schemes in conserving and promoting biodiversity?" in Journal of Applied Ecology. 40, 947-969.

is spread from 60% to 85% depending on where the area is located. The rest is usually brought by Member-states.

Case studies have been chosen according to the location and to the relevance for the topic. The first case is The Netherlands. Confronting severe environment damages the country implemented several AES that have been well-documented. The second case study are the Eastern European countries. So far, indeed, the thesis refers mainly to Western countries for historical reasons. As most of Eastern countries are today EU Member-states, it is interesting to see what kind of agriculture practises have been promoted and what is the role of agri-environment schemes.

III. 2. The Netherlands

The first ecological measures adopted by the Dutch are dated back to the early 1980's. However the promotion of AES by the EU clearly boosted such programs. In 2003, AES covered 70 000 ha over 1 998 900 ha. Most schemes addressed biodiversity preservation (Kleijn and Sutherland 2003: 951)⁸⁵, particularly wader species and to a lesser extent, plants and insects (bees). In some countries, AES are implemented on extensive lands where biodiversity is fragile but still exist. However, in small yet dense countries like The Netherlands, all areas of farmland could be considered as intensive areas. The first type of agreement was about postponing agricultural activities until a set date, in June or July so that birds hatch their chicks. The second type of agreement was about

⁸⁵Ibid: 951

conserving vegetation by postponing mowing and grazing date and by reducing fertilizers.

Yet, most studies show that results are quite disappointing in relation to their initial goals. Before examining the reasons, it is important to note that few studies have been published on AES's effectiveness. Furthermore, most of published studies focused on the UK or The Netherlands unlike Mediterranean regions for which they are likely no studies at all.

So far, AES effects on biodiversity are mixed.

“Of 19 birds studies providing results, four yielded positive increases in species richness or abundance, two gave negative results and 11 showed results in both directions. Of 20 arthropod studies, 11 yielded an increase in species richness or abundance and three showed mixed results but none showed a decrease. Of 14 plant studies, six showed increases in species richness or abundance and two showed decreases” (Whittingham 2007: 2)⁸⁶

Thus, positive effects on wader species are not common. In some cases, wader species are even less frequent on fields with AES agreements. On the other hand, an increase of insects, most notably bees has been witnessed. The discrepancy is not necessarily found in the difference between the implementation of AES and the resultant damage. There is indeed no systematic connection, except in some areas particularly dense in nitrogen rates. Nonetheless, one reason can be due to the fact that

⁸⁶Whittingham, Mark. J. 2007. “Will agri-environment schemes deliver substantial biodiversity gain, and if not why not? *Journal of Applied Ecology*. 44, 1-5.

farmers are committed for too short a period of time that does not correspond to the natural processes. After six years, farmers are allowed to return to intensive farming practices. The main problems stem from the way AES are implemented. If some schemes are effective under experimental conditions, they can have harmful side-effects on lands. It is both a question of farmers' motivation and lack of scientific assessment of and control on the situation. Scientific assessments before and during the experiment should be mandatory. The difficulty faced is not knowing what should be included and what should not be included because of the diversity of the situations. Currently, most studies compare biodiversity in land under agri-environment schemes with areas controlled but not covered by schemes. Unlike Netherlands, AES in the UK has been quite successful in maintaining or recreating bird habitats. Four species have been restored. The fact of the matter is that all these programs have been intensively supervised by scientists. Besides, it should be pointed out that in this case,

“all efforts went into habitat management only aimed at one species, while other-more common, but declining-species were left out consideration” (Berendse, Chamberlain, Kleijn, and Schekkerman 2004: 502)⁸⁷

Despite disappointing end results, some changes can be noted.

Postponing agricultural activities does lead to reduced chick mortality

⁸⁷Berendse, Frank, Chamberlain, Dan, Kleijn, David, and Schekkerman, Hans. December 2004. “Declining Biodiversity in Agricultural Landscapes and the Effectiveness of Agri-environment Schemes”, in Royal Swedish Academy of Science. Vol. 33. N°8, 499-502.

but the nest density remains mostly the same in areas with or without agreement. Thus, management agreements do not prevent population decline despite encouraging reproduction (Berendse, Chamberlain, Kleijn, and Schekkerman 2004: 501)⁸⁸.

To conclude, it is clear that the outline of many agreements is inadequate, especially when it comes to assessing their reliability. Well-designed management agreements can be efficient in terms of species biodiversity but they have to be monitored more closely.

The Netherlands are a good example of the evolution of the CAP concerns (but not priorities!). What about Eastern European countries?

III.3. Central and Eastern European countries and agri-environment

At present, there are no specific agri-environmental problems emerging with new Member-states. They had to accept “acquis communautaire” including the CAP and (agro-)environmental regulation. This meant that countries have and are integrating new farming practices, including the negative ones. It is quite absurd to force countries adopting the CAP in its totality. To counterweight negative effects which are already well-known in Western part of Europe, Eastern countries have to adopt rural development programs and specific AES. Even before their adhesion, they had to suit the Sapard Program (acronym for the Special Accession Programme for Agricultural and Rural Development). On the one hand, it helped future members with implementing agricultural aspects of “acquis communautaire”. On the other hand, five measures in comparison to 15 specifically address environmental concerns; i.e.

⁸⁸ Ibid: 501

biodiversity and natural conservation, promoting ecological agricultural methods, diversifying economic activities in rural area, renovating villages and preserving rural heritage, water resources management, promoting forestry, including afforestation and marketing of forestry products. The issue on sustainability is relevant to Eastern countries as well since most of them boast of a strong agricultural sector. 60% of their lands are farms, forests or other rural areas (40% of European rural lands), 40% of their population live in rural areas (EU average is 25%), 22% of people are employed in agriculture (they are only 5% in the whole EU), and agricultural production accounts for 7% of their GDP as an average (2% in the whole EU) (Maria Staniszewska)⁸⁹. New Member-states include

“some very important areas for the preservation of European biodiversity: the Baltic Sea, large rivers and wetlands of the Baltic Basin, the Danube Basin, the Carpathian mountains, eastern flanks of the Alps, the Balkan and Rodopi mountains, the Black Sea and the Mediterranean.” (Maria Staniszewska)⁹⁰.

Main results can be drawn on the basis of the Sapard Programme between 2000 and 2006. Though there was no mandatory allocations for funds, all countries except Slovenia implemented pilot AES. The highest priority nevertheless was given to market oriented measures, i.e. improving agricultural and fish production with little potential

⁸⁹Staniszewska, Maria. “An overview of the SAPARD Programme. Does SAPARD Programme help sustainable rural development and nature conservation in CEECs? Conference Paper. Polish Ecological Club

⁹⁰Ibid

environmental costs. However, this general picture has to be nuanced according countries' targets. Rural Development objective for diversifying rural economies accounts for 1.5% of funds in Bulgaria but 22% of funds for Latvia. Likewise, forestry measures account for 2% of SAPARD funds but went up to 7.4% of Romanian national SAPARD budget. As a whole, SAPARD budget for 'green incentives' was low: in 2002, it was about 10.3% of total SAPARD budget in Eastern countries (data from Maria Staniszewska)⁹¹. On the other hand of the spectrum, all new Members have to respect EU directives on environment such as the Nitrate Directive. That is why they are unlikely to face identical situations as those that occurred in Western countries. Similarities are however likely to occur. Furthermore, it should be noted that most rural development programmes implies agri-environment measures. Thus, agri-environment budget within rural programmes is often above 50% (Avalon, Daphne Institute of Applied Ecology and IEEP 2000: 4)⁹².

Among Eastern countries, Estonia was one of the countries that applied agri-environment measures to a larger extent. This study is based on the paper wrote by Tiina Köster, Katrin Vask, Pille Kooberg, Iiri Selge and Eneli Viik.⁹³ AES had been available since 2000 and they were encompassed in the First Estonian Rural Development Programme from 2004 and 2006 and the Second Estonian Rural Development Programme between 2007 and 2013. So far, the period studied is 2004-2006. AES

⁹¹Ibid: 2

⁹²Avalon, Daphne Institute of Applied Ecology, and Institute for European Environmental Policy. December 2000. "Preparing for the Implementation of Agri-Environment Schemes in Central and Eastern Europe." Seminar. Brastilava

⁹³Köster, Tiina, Vask, Katrin, Kooberg, Pille, Selge, Iiri, and Viik, Eneli. 2009. "Do We Need Broad and Shallow Agri-environment Schemes? –Outcomes of Ex-post Evaluation of Estonian Rural Development Plan 2004-2006. Rural Development 2009. Estonia: Agricultural Research Centre.

consisted in adopting environmentally friendly production scheme like for instance to set a minimum 15% of legumes in the crop rotation. It also consisted of raising local endangered breeds, restoring farmlands and establishing organic farming scheme. All farmers can participate in the programmes as long as they own one hectare of agricultural land and integrate environmentally friendly production plan in the form of a Nutrient Management Plan and Crop Sequence Plan. Approximately 57% (460 000 ha to 841 000 ha) of Estonian farmlands are under environmentally friendly production plan. Another 8% are organic farms (67 000 ha). More than one third of Estonian farmers adopted AES.

Most of AES emphasized on biodiversity and soil quality. On the whole, AES had a positive impact on the soils. Legumes' parcels in crop rotation enhanced soil fertility and maintained soil structure. As to biodiversity, main positive results were found in organic farms where species multiplied because of the legumes cultures or good grasslands. Thus AES efficiency is proved with organic farmlands but results are lower than expectations in comparison to other environmentally friendly farming lands. The problem here is doubled. For economic reasons and concern of competitiveness, it is not possible to adopt organic farming practices as a main pillar within the CAP. The fact nevertheless is that the CAP is following the path of industrialized agriculture in Eastern Europe –with lower rate however, should be considered a source of big concern. It is not to say that there are no existing green measures. But their higher efficiency compared to non-environmentally friendly measures are still to be assessed and proved.

Conclusion

This study aimed to analyse the level of environmental concern within the CAP. The analysis of early stages of the CAP showed the radical transformation of understanding natural cycles occurring with mechanization. As being the primary source of food for men, agriculture could not but followed the path of industrialization in an era of massive socio-economic transformations. Urban population and demographic increase marked a decisive argument to extensively industrialize the countryside. Alongside industrialization, the development of engineering science and the increase in financial flows reached agriculture as well. Consequently, its role changed: it was no longer about 'local' consumption for survival; it was about being converted into a global market product. It was indeed made possible to eat products at any time of the year. This added to the abandonment of rural identity that in turn dramatically transformed food consumption habits in Western Europe.

Beyond these considerations, the design of the CAP itself with the introduction of financial compensation for farmers influenced farming practices by favouring outputs. If food security played an important role in the beginnings of the CAP, it soon became a second objective. Paradoxically while annual level of food production could be secured, availability of drinking water for human consumption was increasingly becoming problematic. At the same time, environmental damages were being perceived and recorded more accurately than before. It took unfortunately too much time for political actors to start developing an environmental policy. More time was lost in integrating environmental

issues within agricultural considerations since the gap between agriculture and nature was vast. Though environment became a pillar of the CAP, damages have also been greater than expected.

In this context it is surprising to note that Central and Eastern countries are converting their agriculture into industrial agriculture whereas Western European countries are increasingly turning to agri-environment programmes. Some of them have decided to cut down on their agricultural productions for ecological reasons. It could be argued that Central and Eastern European countries' goal is to develop a "semi-industrial" agriculture in an attempt to combine competitiveness with environmentally-friendly practices. The question that arises here is whether it would be a right solution in the long-run?

In fact, the CAP's reaction has always been rather belatedly and inadequate. As long as the CAP maintains an exclusive environmental policy divorced from agriculture, measures to protect the environment would only be for namesake. Some politicians claim that it is not the responsibility of the CAP to address environmental concern. Here it could be demanded how agriculture can remain cut off from the natural cycles when it is meant to work in symbiosis with nature? The CAP instead should go further in promoting green incentives. To begin with, agri-environmental schemes lack assessment and research on it. It would be beneficial to design AES in an adequate way with regular evaluations. Damage caused by agriculture come at a heavy price. In the last two decades, the EU and Member-States have spent considerable amount of

money and developed cleaning water programmes, created natural areas etc. In time it is hoped that agri-environment policy may not cost much. The main problem is economic competitiveness. It needs to be understood that environmental policy over-rides market-oriented outlook. We face a general problem of socio-economic transformation as it has been repeated over the last decade. Researchers propound the idea that intensive agriculture should be dropped on a large scale to make way for extensive farming methods which, according to them, is the only efficient way to reduce contamination adequately.

The environmental concern has also entered the domain of ethical concern such as hunger. One can note that ethics for staple commodities is rather new. The right to food and water appeared after the Second World War (article 25 of the Universal Human Rights Declaration) but today food security is still a major issue for most people around the world while for others, food safety has become another major issue. Distrust in it stems not only from environmental damages-sometimes invisible to naked eye. It also stem from major food crisis, most notably BSE crisis occurring in the mid-1990's. It is certain that such crisis helped shaping new environmental concerns within CAP reforms. Besides, the CAP does garner support from an increasing public consciousness that is resulting in the formation of consumers associations and NGOs. Irrespective of that repercussions of industrialization remain: there is indeed differentiation between production and consumption and between producers and consumers.

Document 1: Example of major environmental impacts associated with agriculture

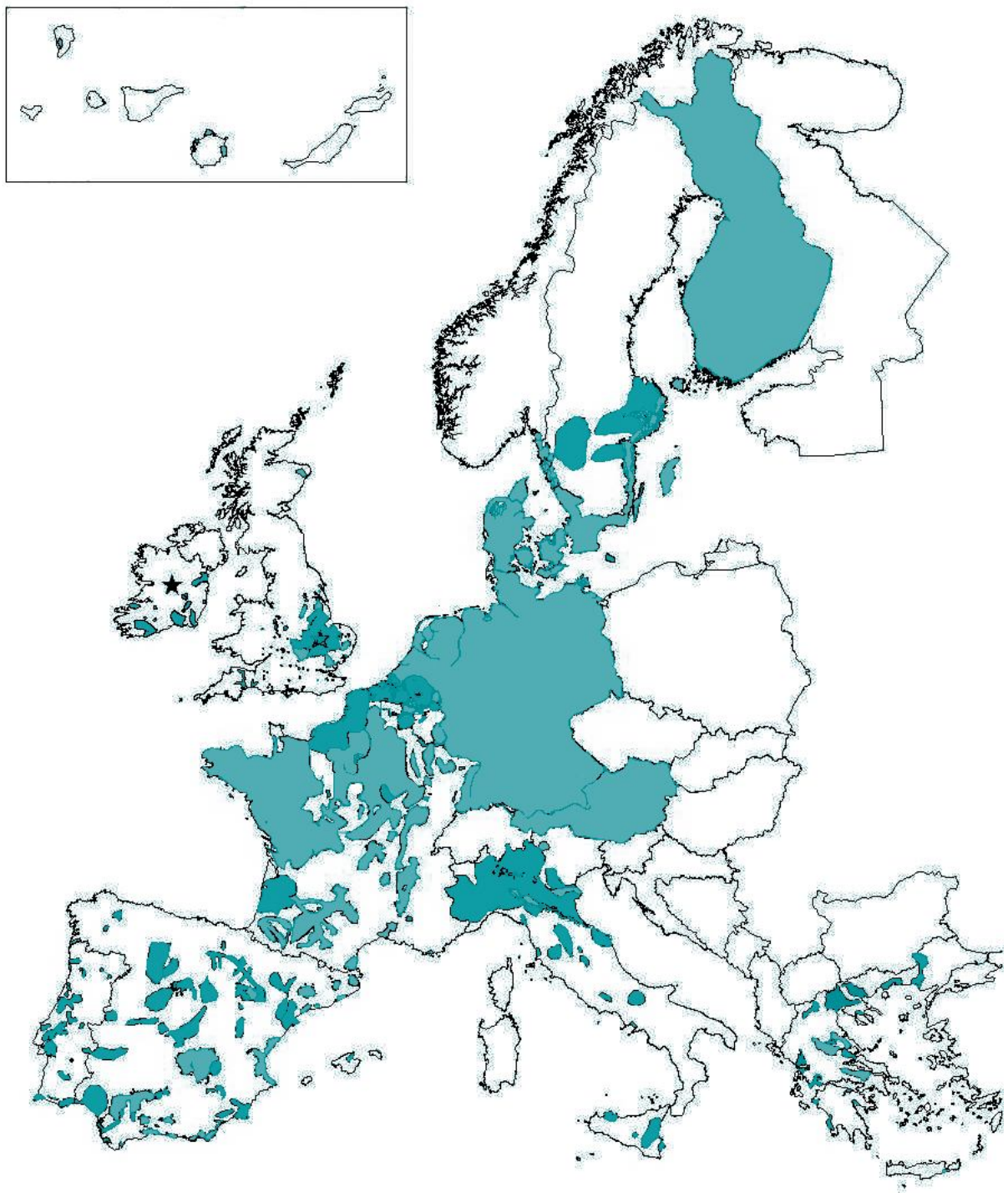
Examples of major environmental impact associated with agriculture

- Soil quality erodibility-nutrient supply, moisture balance, and salinity and land conservation.
- Water quality-nutrient pollution, water use efficiency, irrigation and flood prevention.
- Air quality-ammonia emissions, green house gas emissions, and carbon sink.
- Biodiveristy-animal and plant species.
- Wildlife habitats and landscapes.

Source: Sustainable Agriculture. Concept Issues and policies in OECD countries, OECD, 1995.

From EPA Associates. 1999. Agriculture and the Environment. Development of European Union Agri-Environment. London: Agra Europe

Document 2: Nitrate vulnerable zones in the EU



From European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

Document 3: The area of land designated as NVZs in 2001 (km²)

Country	Area designated	% Land cover
Belgium	2700	9
France	240 900	48
Greece	13 900	11
Ireland	0	0
Italy	5 800	2
Portugal	900	1
Spain	32 000	6
Sweden	41 000	9
United Kingdom	7 800	3

Source: CEC (2002). Austria, Denmark, Finland, Germany, Luxembourg and the Netherlands designated 100% of land cover as NVZs.

From Warren, John, Lawson, Clare, and Belcher, Ken. 2008. *The Agri-Environment* Cambridge: Cambridge University Press.

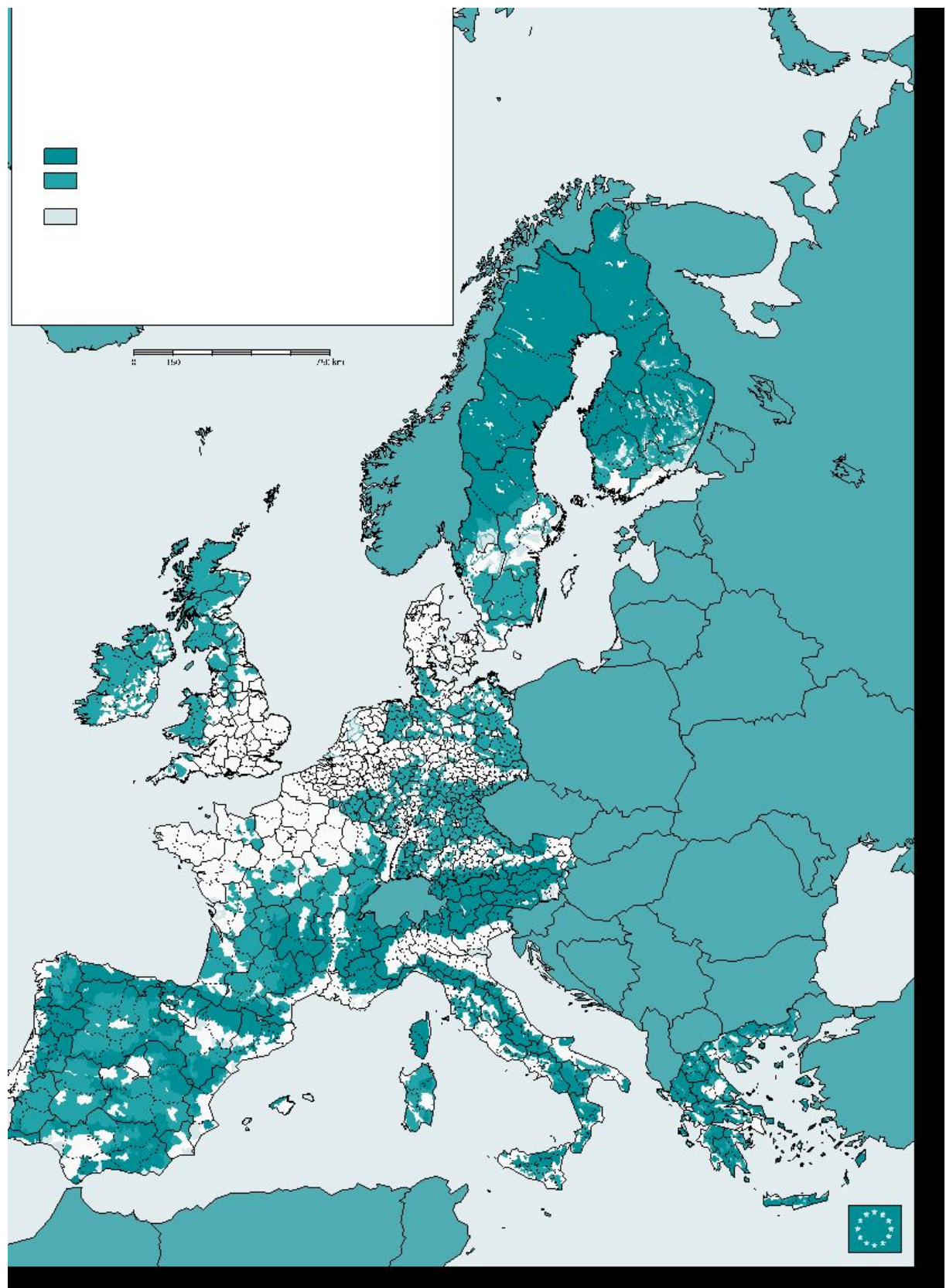
Document 4: Total emissions of methane and nitrous oxide in 2004 and
the proportion resulting from agricultural activities

Country	CH ₄	Agriculture	N ₂ O	Agriculture
Denmark	0.27	64.9%	0.02	82.5%
Germany	2.44	44.9%	0.21	63.6%
Netherlands	0.83	50.1%	0.06	53.7%
Spain	1.74	62.5%	0.10	76.0%
UK	2.46	36.0%	0.13	65.0%

Source: UNFCCC (2006)

From Warren, John, Lawson, Clare, and Belcher, Ken. 2008. *The Agri-Environment* Cambridge: Cambridge University Press.

Document 5: Less Favoured Areas (LFAs). Situation in 1997.



Darker blue: Mountain/hills areas

An Analysis of the Environmental Concern within the Common Agricultural Policy

Medium blue: Less favoured areas in danger of depopulation

Lighter blue: Areas with specific handicaps

Source: EUROSTAT-GISCO (Database construction by AGRI DG)

(c) EuroGeographics Association for the administrative boundaries

From European Commission Directorate-General for Agriculture. 2003. Agriculture and the Environment. Brussels.

Bibliography

Books and Articles

Avalon, Daphne, Institute of Applied Ecology, and Institute for European Environmental Policy. (December 2000). "Preparing for the Implementation of Agri-Environment Schemes in Central and Eastern Europe." Seminar. Bratislava.

Barass, R. and Madhavan, S. (1996). European Economic Integration and Sustainable Development: Institutions, Issues and Policies. London: McGraw-Hill Book Company.

Berendse, Frank, Chamberlain, Dan, Kleijn, David, and Schekkerman, Hans. (December 2004). "Declining Biodiversity in Agricultural Landscapes and the Effectiveness of Agri-environment Schemes". Royal Swedish Academy of Science. Vol. 33. N°8, 499-502.

Burrell, Alison and Oskam, Arie Eds. (2000). Agricultural Policy and Enlargement of the European Union. Wageningen: Wageningen Press.

EPA Associates. (1999). Agriculture and the Environment. Development of European Union Agri-Environment Policy. London : Agra Europe.

European Commission (1994a). Europe 2000- A Framework for European Cooperation on Territorial Development. Brussels.

European Commission. (1994b). The Situation of Agriculture in the Community. Report 1993. Luxembourg: Office for Official Publications of the European Communities.

European Commission (DCXI). (1988). Environment and Agriculture COM 338. Brussels.

European Commission Directorate-General for Agriculture. (March 2005). Agri-environment Measures. Overview on General Principles, Types of Measures, and Application. Brussels.

European Commission Directorate-General for Agriculture. (2001). The common agricultural policy-review 2001. Brussels: Publications Office.

European Commission Directorate-General for Agriculture. (2003). Agriculture and the Environment. Brussels.

European Commission. (2003c). European Union and the Common Agricultural Policy. Public Opinion in the Member States. Special Eurobarometer 190. Brussels: European Commission Directorate-General for Agriculture.

European Commission. (1997). Report to the European Parliament and to the Council on the Application of Council Regulation (EEC) No. 2078/92 on Agricultural Production Methods compatible with the requirements of the protection of the environment and the maintenance of the countryside. Brussels: European Commission Directorate-General for Agriculture.

European Commission. (2003b). Rural Development Programmes, 2000-2006. Brussels: European Commission Directorate-General for Agriculture.

European Environmental Advisory Council. (Feb. 1999). Environmental Aspects of the Agenda 2000 Proposals on Agriculture.

European Parliament Agriculture Committee. (1992). The Impact of Modern Farming on the Rural Environment.

Fearne, A. (1991). "The History and Development of the CAP 1945-1985", in *The Common Agricultural Policy and the world economy: Essays in honour of John Asthon*. Ed. Christopher Ritson. Wallingford: CAB International. 21-66.

Firbank L. G. (2005). "Striking a new balance between agricultural production and biodiversity". *Annals of Applied Biology*. Lancaster: Lancaster Environment Centre.

Gardner, Brian. (1996). *European Agriculture. Policies, production and trade*. London: Routledge.

Institute for European Environmental Policy. *Environmental Integration and the CAP. A report to the European Commission DG Agriculture*.

Kay, Adrian. (1998). *The Reform of The Common Agricultural Policy. The Case of MacSharry Reforms*. Wallingford: CABI Publishing.

Kleijn, David *et al.* (2006). "Mixed biodiversity benefits of agri-environment schemes in five European countries". *Ecology Letters* 9. 243-254.

Kleijn, David, Berendse, Frank, Smit, Ruben, and Gilissen, Niels. (Oct. 2001). "Agri-environment schemes do not effectively protect biodiversity in Dutch agricultural landscapes." *Macmillan magazines Ltd*. Vol. 413.

Kleijn, David and Sutherland, William J. (2003). "How effective are European agri-environment schemes in conserving and promoting biodiversity?". *Journal of Applied Ecology*. 40, 947-969.

Köster, Tiina, Vask, Katrin, Kooberg, Pille, Selge, Iiri, and Viik, Eneli. (2009). "Do We Need Broad and Shallow Agri-environment Schemes? –

Outcomes of Ex-post Evaluation of Estonian Rural Development Plan 2004-2006. Rural Development 2009. Estonia: Agricultural Research Centre.

Latacz-Lohmann, U. and Hodge, I. (2003). "European agri-environmental policy for the 21st century". The Australian Journal of Agricultural and Resource Economics, 47. Pp. 123-129.

Lowe, Philip, Falconer, Kathrin, Hodge, Ian, Moxey, Andrew, Ward, Neil and Whitby, Neil. (July 1999). Integrated the environment within CAP reform. Department of Agricultural Economics and Food Marketing. University of Newcastle upon Tyne: Centre for rural economy.

Marsh, J.S. (1989). "The Common Agricultural Policy", in The European Community and the Challenge if the Future. Ed. Juliet Lodge. London: Pinter Publishers. 148-166.

McCornick, J. (1996). The European Union. Politics and Policies. The New Europe: Interdisciplinary Perspectives. Ed. Stanley Hoffman. Colorado and Oxford: Westview Press, Inc.

Meyer, Barbara Franziska. (1993). The Common Agricultural Policy of the EC: With special regard to the 1992 reform and the Uruguay Round of GATT negotiations. Wien: Diplomarbeit.

Nychas, A.E. (1995). "Integrating Agricultural and Environmental Policies in the European Community", in Ecology and Integrated Farming Systems. Eds. D.M. Glen, M.P. Greaves, and H.M. Anderson. Chichester, UK: John Wiley and Sons Ltd. 1-8

OECD. (2005). Evaluating Agri-Environmental Policies. Design, Practice and Results. Paris: OECD Publishing.

Osterburg, Bernhard. (2005). "Assessing long-term impacts of agri-environmental measures in Germany", in Evaluating Agri-Environmental Policies. Design, Practice and Results. Ed. OECD. Paris: OECD Publishing.

Pierce, J. (1992). "The Policy Agenda for Sustainable Agriculture", Contemporary Rural Systems in Transition. Vol. 1.: Agriculture and Environment. Eds. Christopher Bryant, Ian Bowler, and Duane Nellis. Wallingford: CAB International. 221-237.

Redcliff, M. (1993). "Sustainable Development: Concepts, Contradictions, and Conflicts", in Food for the Future. Conditions and Contradictions of Sustainability. Ed. Patricia Allen. New York and Canada: John Wiley and Sons, Inc. 169-193.

Robson, N. (1997). "The evaluation of the Common Agricultural Policy and the incorporation of environmental considerations", in *Farming and Birds in Europe: The Common Agricultural Policy and Its Implication for Bird Conservation*. Eds. J.D. Pain and M.W. Pienkowski. London: Academic Press. Pp. 43-78

Sharpley, A.N., Daniel, T., Sims, T.J. *et al.* (2003). *Agricultural Phosphorus and Eutrophication*. 2nd Edition. United States Department of Agriculture. Agricultural Research Service ARS-149.

Stachelberger, Dagmar. (1998). *The Development of European Agriculture and Its Impact on Life-With a Special Reference to Common Agricultural Policy*. Wien: Diplomarbeit.

Staniszewska, Maria. "An overview of the SAPARD Programme. Does SAPARD Programme help sustainable rural development and nature conservation in CEECs?" Conference Paper. Polish Ecological Club.

Swinbank, A. (1997). "The CAP Decision-making process.", in *The Common Agricultural Policy*. Eds. C. Ritson and D. Harvey, 2nd Edition. Wallingford: CABI International.

Tracy, M. (1989). *Government and Agriculture in Western Europe 1880-1988*, 3rd Edn. London: Granada.

Troughton, M.J. (1991). "Agriculture and Rural Resources", in *Resource Management and Development*. Ed. Michel, B. Toronto: Oxford University Press.

Verhulst, Jort, Kleijn, David, and Berendse, Frank. (2007). "Direct and indirect effects of the most widely implemented Dutch agri-environment schemes on breeding waders." *Journal of Applied Ecology* 44. 70-80.

Warren, John, Lawson, Clare, and Belcher, Ken. (2008). *The Agri-Environment*. Cambridge: Cambridge University Press.

Wilson, Geoff A, and Hart, Kaley. "Farmer participation in Agri-Environment Schemes: Towards Conservation-Oriented Thinking." London: King's College.

Wilson, Geoff A., and Hart, Kaley. (2000). "Financial imperative or conservation concern? Eu's farmers motivations for participation in voluntary agri-environment schemes." *Environmental and Planning*. Vol. 32. 2161-2185.

Whittingham, Mark. J. (2007). "Will agri-environment schemes deliver substantial biodiversity gain, and if not why not?. *Journal of Applied Ecology*. 44, 1-5.

Documentary

Schmidt, Markus and Meinhart, Camillo. (2009). DIVERSEEDS. Plant Genetic Resources for Food and Agriculture. Vienna: Documentary Film produced by Idialog.

Websites:

European Commission

http://ec.europa.eu/agriculture/envir/report/fr/terr_fr/report.htm

European Commission. 2006. Agriculture and Environment.

http://europa.eu.int/comm/agriculture/envir/index_en.htm.

OECD.

<http://stats.oecd.org/glossary/detail.asp?ID=2074>

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