CHAPTER I: Agriculture – Rural Development

■ Status

Overview

In Greece the primary sector has and still is occupying an important position in the economy. Nevertheless, it has followed a less intensive development path, involving lower environmental pressures in comparison to other European Union (EU) countries. However, important advances towards agricultural intensification as well as the use of fertilizers and pesticides have also increased in Greece over last decades and this has had noticeable impacts on the long-term efficiency of agricultural land, aquifer quality and biodiversity. Irrigation has expanded to cover larger areas of agricultural land causing severe pressures on wetlands and accelerating phenomena such as erosion and soil salinity. Only recently there has been a remarkable reduction in fertiliser use along with an exponential growth of organic farming. Animal breeding, which represents one third of the total agricultural production poses a limited threat to the natural environment, since the largest percentage of ruminants are free-range animals. There are local problems of animal waste, caused by the recent increase of pig and poultry breeding farms in some regions of the country. Thus, the sustainable development of the primary sector in Greece requires a focus on farming as the intensification of production is accompanied by the abandonment of less fertile soils. This dual trend is reflected in the nature of the pressures on the natural environment. Moreover, the mechanisation and intensification of agricultural production of the last decades, aiming at the maximisation of efficiency, has led to an increase of pressures on the environment, which in some cases approach the carrying capacity of the ecosystem.

Selected qualitative indicators on Agriculture, Animal breeding and Fisheries from the National Centre for Environment and Sustainable Development's (NCESD) "Report on Sustainable Development Indicators of Greece" (2004), provide a broad introductory indicative picture of the trends in the sector:

- The intensity and "mechanisation" of Greek agriculture show upward trends, resulting in a considerable improvement in productivity. Much of the country's agricultural produce is intensively grown on a limited area of fertile, irrigated lowlands, giving rise to localised environmental pressures.
- During the last decade the quantity of fertilizers used in the country was reduced by 33%; thus, the consumption per 1000 m^2 became equal to the EU average. On the contrary, the use of pesticides has shown trends of increase.
- The continuous extension of irrigated land counterbalances the reduction in water intensity in agriculture and imposes a change in farming practices and crops.
- Agricultural added value appears to be relatively stable. Examination of the evolution of the other three parameters with a negative impact on the environment (total irrigated area, fertilizers, pesticides) shows that decoupling is observed, however, mainly in the case of fertilizers.
- The agricultural and animal breeding sector contributes to a low extent to the emissions of air pollutants, however more considerably to the emissions of greenhouse gases (GHGs).
- The share of organic farming in Greece became noticeable in Greece after 1993. Since then and until the year 2000, the respective area has increased by a factor of ten. In 2004 it slightly exceeded 1.5% of the total permanent crop area where as in 2007 this percentage raised further to reach 4% of permanent crop area. Thus, emphasis is given to accelerating the development of organic farming and increase its share in agricultural production.
- The total fishery production increased by 30% between 1990 and 1995 and remained almost constant thereinafter. Meanwhile, there has been a more rapid development of aquaculture (45% of total fisheries production, in 2000). Thus there is a trend to promote well-planned aquaculture development with a view to contribute to the conservation of marine fish stocks.

Moreover, it should be noted that there are no Genetically Modified Organisms' (GMOs) cultivations in Greece.

Physical context

In more detail, and starting from the physical context of the country, the land territory of Greece totals 13,195,700 hectares (ha), and according to OECD's criteria for classification, 97.1% of it accounts for agricultural land (73.8% mainly agricultural and 23.2% semi-agricultural), where the 64.4% of the total population resides. Overall, 40.2% of the total country's surface area corresponds

to agricultural regions, 17.9% to forest regions, 38.5% to natural regions, 2.2% to artificial regions and 1.2% to inland waters.

Table 1.1: Land distribution

	Surface area (ha)	%
Agricultural areas	5,304,671.40	40.2%
Forest	2,362,030.30	17.9%
Natural	5,080,344.50	38.5%
Artificial	290,305.40	2.2%
Inland Waters	158,348.40	1.2%
Total	13,195,700.00	100.0%

Source: Common Monitoring and Evaluation Framework. Draft data set for context related baseline indicator. Technical meeting on CMEF 30 January 2006

The geophysical characteristics of the country limit the competitivity of the sector with regard to other EU countries. On the contrary, the intense horizontal fragmentation and intense vertical relief of Greece, creates a wide variety of local micro-climates and production conditions which must be developed holistically, turning these restrictions into positive prospects for development and diversification.

The limited natural sources are also a restraining factor. The agricultural land that is utilised amounts to 30.1% of the total land, whereas the equivalent percentage in the EU-25 is 42%. From this land, the percentage of 82.7% is at unfavourable areas, therefore it cannot be productive without appropriate institutional, financial and technical measures in place promoting competition. The data provided by the National Statistical Service of Greece (NSSG) for the sector, in 2007, indicate that almost 87.8% of the country's agricultural land corresponds to cultivated areas while the rest, around 12.2%, corresponds to fallow land which are increased in 2006 due to the fact that it included areas not used for production but maintained at a good agricultural and environmental status eligible for future integrated support.

Table 1.2: Crop areas, fallow land and irrigated areas by categories of crops areas and groups of level, semi-mountainous and mountainous communes municipal departments, for years 2005-2006

Categories of Crops by kind *in thousands stremmas*	Total 2005	2006			
		Total	Level communes	Semi-mountainous communes	Mountainous communes
Total crop areas of Greece	37,589	37,333	20,802	10,064	6,467
Total crops areas and fallow land	38,017	37,803	21,136	10,148	6,518
of which irrigated	14,789	14,374	10,216	2,728	1,430
Crops on arable land	21,308	20,738	13,783	4,660	2,296
of which irrigated	9,633	9,273	7,267	1,428	578
Garden crops	1,121	1,103	715	256	132
of which irrigated	1,077	1,056	686	245	126
Areas under trees	10,048	10,052	4,349	3,316	2,387
of which olive trees	7,845	7,867	3,101	2,857	1,909
of which irrigated	3,635	3,612	2,032	934	646
Vines (grapes and raisins)	1,272	1,271	581	383	306
of which irrigated	442	433	231	121	81
Fallow land 1-5 years	4,268	4,639	1,708	1,533	1,398
Cereals for grain	12,643	12,136	7,827	3,086	1,223
Edible pulse	152	160	70	34	56
Industrial plants (e.g. tobacco, cotton, sesame, soya, sunflower, etc)	4,659	4,397	3,787	512	98
Aromatic plants	14	14	6	6	2
Fruit plants	3,145	3,322	1,624	882	816
Melons, watermelons and potatoes	695	710	469	139	102
Vegetables	1,119	1,128	726	272	130
Commercial flower gardens and greenhouses	56	55	28	18	9

Source: NSSG, 2007

However, the total number of private holdings has increased from 817,060 in 2000, to 824,460 in 2003 and to 833,079 in 2005 (see Table 1.4 below) with a parallel increase in the size of the holdings to the total utilised agricultural area of a little over 9% between 2000 (average holding size to total utilized area at 4.4 ha) and 2003 (at 4.8 ha). This increase in holdings is the result of the appearance

of new / young farmers and the allocation of new additional land to agriculture in rural areas. To some extent, this increase is due to the splitting up of the existing holdings in smaller ones according to the currently in place inheritance legislation. Thus, despite the implementation of structural programmes and reforms, the gap between the average Greek land exploitation and the EU average (15.8 ha) still remains large. Therefore an important inhibiting factor to increased productivity relates to this very fact, i.e. that exploited land consists of numerous, small and distant split-up holdings resulting in an ineffective use of resources and thus reduced competitivity.

Economic characteristics of the agricultural sector – Trade

In Greece, the primary sector, as mentioned above, remains one of the most important economic sectors that plays a special role from both a social and environmental perspective. The percentage of contribution of the primary sector to the total Gross Added Value (GAV) of the country amounted to 7% in 2002 and to 5.2% in 2005 (compared to 2% of EU countries), whereas its contribution to the Gross National Product (GNP) of the country amounted to 5.7% in 2002 and to approximately 4.9% in 2005. Trends show that these percentages are likely to decrease further in the years to come to approximate the related percentage of other more developed countries, of the EU or non-EU.

Likewise, agricultural occupation has been dramatically reducing, since the 1980s when it corresponded to a 35% of total occupation, whereas in 2000 it only reached 17% and in 2004 it was even further decreased to 12.6% of total occupation rates. In 2003, the number of employed persons in holdings owned by natural persons was 1,495,662 and in 2005 1,510,446 (see Table 1.3, below) (NSSG). However, the national percentage of 12.6 compared to 3.8% in the EU-15 for the same year, indicate that the sector in Greece continues to offer employment to a large number of people, in a country where unemployment remains on the forefront of issues.

The most important structural change in the sector over the last two decades, has been multi-employment for the diversification of income: in agricultural/rural regions, 12.3% of holdings' owners is exclusively occupied in the primary sector, whereas the rest is also occupied in other sectors in order to ensure more sustainable livelihoods.

Table 1.3: Persons employed in the total of holdings by category and working days, per Region (2005)

Region of Greece	Managers of holdings owned by legal persons	Number of employed persons in holdings owned by natural persons		Permanent workers		Seasonal workers		
		Holdings	Employed	Holdings	Employed	Holdings	Employed	Working days
Greece Total	511	833,079	1,510,446	16,752	24,861	363,804	1,241,295	23,477,884
Eastern Macedonia and Thrace	50	65,340	131,588	1,631	2,236	18,229	91,357	1,490,478
Central Macedonia	146	117,624	218,245	4,053	5,963	49,668	173,782	4,902,289
Western Macedonia	6	30,387	54,484	1,209	1,441	6,809	17,995	499,398
Thessaly	25	80,141	145,345	2,335	2,954	30,667	113,236	1,669,911
Ipiros	49	43,267	71,398	1,077	1,462	11,496	37,049	487,293
Ionian Islands	10	31,873	54,409	194	338	11,033	21,659	522,308
Western Greece	25	94,738	167,362	705	1,082	46,463	192,403	3,298,539
Central Greece	34	81,143	145,377	1,201	1,975	39,906	155,699	2,479,349
Peloponnesus	36	105,849	188,338	830	1,369	61,097	201,324	3,600,959
Attica	53	26,596	44,888	1,385	2,699	15,176	44,115	709,933
North Aegean	11	33,788	58,515	230	351	12,924	29,798	641,097
South Aegean	42	24,298	41,085	182	280	3,533	7,149	118,233
Crete	25	98,037	189,411	1,719	2,710	56,803	155,729	3,058,096

Source: NSSG, 2007

The actual agricultural income was increased to 1.97% in the period 2005-2006 reversing the decline of the previous years. Despite the fact that in 2000 a large amount (5-6%, i.e. a percentage double

the average of EU-15 at 3%) of the Fixed Capital Gross Investments (FCGI) of the country were directed to the agricultural sector, in 2003 this percentage decreased to 3.3%, indicating a decrease of investment in the sector.

More analytical data on the country's areas by category of crops, on the output of agricultural, husbandry and aquaculture (in both marine and fresh water) as well as on the employment levels in holdings are presented in the tables of NSSG below, for years 2005-2006.

Table 1.4: Production of Agricultural and Livestock products, year 2006 (provisional)

Categories of crops by kind *in tons*	2005	2006
AGRICULTURE		
Crops on arable land		
Cereals for grain	5,095,749	4,695,632
Edible pulse	27,792	29,533
Industrial plants	3,939,379	2,886,042
Aromatic plants	1,663,892	1,631,151
Fooder plants	1,944,530	2,147,442
Vegetables	3,998,335	3,323,803
Vine products	709,160	677,131
Tree crops		
Citrus trees	1,169,239	1,123,127
Fruit trees	1,289,245	1,157,806
Nuts fruit	70,797	69,817
Other	2,995,168	2,690,151
PRIMARY LIVESTOCK PRODUCTS		
Milk	1,987,280	2,004,809
Meat	462,276	495,832
Lard	1,396	1,407
Sheep's wool	8,647	8,784
Honey	15,639	16,526
Eggs (in thousands)	1,961,994	1,954,983
LIVESTOCK BY-PRODUCTS		
Cheese soft	116,915	122,421
Cheese hard	38,979	38,039
Butter fresh	2,434	1,833
Butter melted	852	809
INNERS WATERS' FISH		
Inner waters' fish	28,200	28,126

Source: NSSG, 2007

Regarding trade, although agricultural trade plays an important role in the country's export trade activities, its percentages are decreasing. In 2000, imports of agricultural products amounted to EURO 3.91 billion (12.7% of total imports), whereas exports amounted to EURO 2.90 billion (25% of total exports), with the agricultural balance amounting to EURO 1.02 billion. In 2004, the imports amounted to EURO 5.27 billion (12.5% of total imports), exports amounted to EURO 2.80 billion (22.9% of total exports) and the commercial agricultural balance amounted to EURO 2.47 billion indicating an increasing trend in imports versus exports.

The National Strategic Plan for Agricultural Development (NSPAD) for the 4th Programming Period of EU Structural Funds 2007-2013 (see also under Chapter "Strategies, Plans, Programmes and Projects"), of the Hellenic Ministry of Rural Development and Food (MRDF), focuses on promoting, encouraging and maintaining increased exports of agricultural products, through promotion of transformation, manufacturing and quality control. In the medium run, Greek products, either fresh or manufactured, will face even more intense competition as a result of the gradual banning of all tax protective measures or other equally protective restrictive measures emerging from the ongoing negotiation in the framework of the World Trade Organisation (WTO) as well as from operationalisation of several Free Trade Zones that related EU Agreements (with Mediterranean and Latin American countries) in various contexts entail (e.g. Euro-Mediterranean Partnership Free Trade Zone by 2010, MERCOSUR, COTONOU). In this future more competitive context, the system of "Cross Compliance" introduced by NSPAD will become even more crucial for ensuring a market share for Greek products domestically and abroad (see also under Chapter "Decision-making, Legal and Regulatory Framework, Policy Instruments").

Apart from these direct results the opening up of international markets will have to the income of farmers, there is also a matter of distribution, trade and price setting for agricultural products within the country. Greek producers usually have little possibility to negotiate directly on the final price of their produce; as a co-signee member of one of the existing 6,350 Agricultural Associations in Greece, the producer consents a priori to the imposed conditions concerning the chain of distribution and trade of the products, without any direct gain for the consumer.

Social aspects – Age and Educational issues

The improvement of the competition prospects in the sector through improved production methods, certification and quality assurance of products, is impeded by the generally low level of professional training of the majority of farmer as well as their increasing age. In 2000, the percentage of the landowners aged up to 35 years amounted to 71,250, whereas those who aged 65 years and above amounted to 347,420. In addition, in 2003 the indicator (% farmers younger than 35 years, in relation to farmers older than 55 years of age) equalled to 0.13. This picture creates limits to the overall reform of the sector due to the fact that older farmers are inherently reluctant to quit their agricultural occupation as it represents their main source of their income, to shift to modern practices as they do not have academic knowledge of economic and technical management, to abandon traditional methods in favour of new technology ones and to cope with the continuous changes in a demanding market. Currently, almost 40% of farmers are 55 years old or more.

Likewise, the educational level of employees in the primary sector indicates that less than 1% has a University Degree while the majority, around 70%, has only an Elementary School Certificate whereas around 10% has a Certificate of Secondary Education, 10% has attended only some classes of Elementary School and around 5% has never gone to school.

The occupation in the agricultural sector of younger people adequately educated and trained, is limited by social factors relating mainly to the quality of life and to the accessibility of social services in rural regions and particularly in mountainous and remote areas as well as to the lack of adequate infrastructure for product and human transportation, education, e-commerce, child care and social care. Moreover, the lack of accessibility to information and consultation services for promoting innovation in agricultural production is also a determining limiting factor. Research in the sector in Greece still lags behind as regards the needs of farmers and the fast technological advancements for production of agricultural goods of increased added value or of biological farming. Moreover, there is a weak link between innovation and small-sized enterprises (often family-based) in the agriculture, forestry and foodstuff sectors.

Irrigation

Greece faces considerable water challenges in terms of its agricultural water use, which represents about 85% of overall water abstractions. Excessive pumping of groundwater has caused water levels to fall in some rural areas, as well as salt water intrusion in certain coastal aquifers and even though enforcement of regulations and water permit conditions for water abstractions for irrigation have considerably improved, there is still room for further amelioration.

Irrigated areas in Greece, according to estimates provided by the NSSG, occupy roughly 44% of cultivated areas. The distribution of methods of irrigation are as follows: 25% surface irrigation, 53% sprinkler and 22% drip irrigation. Irrigated areas are differentiated in collective and private irrigation networks, as indicated indicatively in Table 1.5 below.

Table 1.5: Indicative percentages of methods of irrigation used

	Surface irrigation	Sprinklers	Drip	total
Collective networks	38%	52%	10%	100%
Private networks	13%	54%	33%	100%

Source: NSSG (inventory 1999/2000), MRDF.

Estimates for the period from 2000 until today indicate that there is an increasing trend in drip irrigation in both private and collective networks aiming to gradually fully replace surface irrigation in private networks. However, surface irrigation in collective networks is very difficult to be replaced by other methods given on one hand the age of networks, some of which date back to the '60s, and on the other hand due to the nature of cultivations (e.g. rice) that require such irrigation. Regarding water resources used, efforts are intensified to shift from the use of groundwater to the use to surface waters, with very positive results so far.

With regard to the pricing and subsidies' system for irrigation, some general observations are:
- Generally, a resource price is not charged for irrigation water to farmers served by private nor by collective irrigation schemes.
- In private networks, the user undertakes completely the cost of construction and maintenance, whereas regarding the cost of electricity consumption, there is possibility for reduced tariffs if provisions of JMD 142196/87 on "Measures for Rural Electrification" are applied; in the case of diesel consumption, a tax refund is foreseen.
- In collective networks, administrators undertake the cost of management, operation and maintenance, with the possibility of special tariffs or tax refunds being applied for electricity or oil consumption required for their operation. Contributions per user are determined by the respective administrative body of each network and vary from EURO 70-400/ha with a most common price being fixed around EURO 150-200/ha.

However, in some cases like in the island of Crete a system of pricing of irrigation water per volume of consumption is already applied with positive results. Such systems are intended to be shortly applied to more areas throughout the country aiming at water resources protection.

Biodiversity

Greece, due to its geographic position and the traditional agricultural practices followed over the years, is one of the richest countries in biodiversity with 5,800 plant species, 436 birds and 535 fish species (88 in inland and 447 in sea waters). Agriculture plays a very important role in maintaining biodiversity, with hundreds of local husbandry varieties and species. More than half of utilised agricultural area in Greece is considered of high nature value, the highest share in EU-15 (2004). A quarter is part of the NATURA 2000 network. However, the impacts of farming on biodiversity have not always been adequately monitored, especially in previous years. The change of traditional farming activities has led in certain cases to the degradation of valuable landscapes and cultural features, particularly in rural mountainous areas, while the intensification of agriculture (use of fertilisers and pesticides and expansion of cultivated land) in fertile plains exerts increasing pressure on natural ecosystems and water resources.

Forestry

Forests and forest areas in Greece are characterised by high biodiversity while on EU level they have the highest genetic diversity. They cover 30% of Greek territory, two thirds of which are in public ownership and 58% are included in the NATURA 2000 Network in Greece, thus their sustainable management is critical for the functionality of the network and the protection of the Greek natural environment. Forests also contribute very positively in combating greenhouse effect and climate change as sinks of CO_2. They also contribute to the retaining of soils from erosion while enriching aquifers, enhancing water quality and reducing floods' and droughts' intensity. In parallel, forests products support local economies whereas they provide a popular recreational space and areas for the development of eco-tourism activities. Greek forests are almost entirely considered as semi-natural (i.e. influenced by human intervention) and appear relatively healthy: the share of trees affected by severe defoliation has been decreasing and is now 20% (compared to an EU average of 23%). Forest biodiversity has not been highly affected by invasive alien species, despite the presence of some tree species that displace the native vegetation (e.g. the Tree-of-heaven) and some fungi (e.g. the Dutch elm disease).

Table 1.6: Production of forest products, in 2004

Kind of product	2004
In cubic meters	
Round wood Total (in m^3)	380,931
Fir	72,844
Pine	151,349
Oak	3,782
Beech	90,311
Other trees	62,645
Fire wood (in tons)	
From forests	466,847
From agricultural holdings	509,854
Charcoal (in tons)	1,249

Source: NSSG, 2007

The strict legal framework for the protection and maintenance of forest in Greece has provided in several cases a protection shield for many natural functions and parameters; the renewed forest legislation in Greece fully adopts the principles of biodiversity conservation and multiple uses of forest lands. However, there are still considerable challenges being faced relating to encoding and modernisation of the existing legislation, addressing of the weaknesses of the current administrative system, finalising the National Cadastre and allocating definite land-uses in certain areas. In parallel, large works in mountainous areas still impact on forests while coastal, peri-urban and lower altitude forests have been considerably compromised due to urban sprawl and their transformation to agricultural land. The most important challenge that the sector should address and aim at is the increase of its competitiveness through a management more sustainable and able to meet the social, environment and economic values attributed to forests.

The extensive wildfires, mainly due to the prolonged water scarcity, drought and arson, during the summer of 2007, have been calculated to have resulted in the loss of 2,700 Km^2 of forest land and to be responsible for the emission of 4.5 million tones of CO_2 in the atmosphere (European Forest Fire Information System - EFFIS, 2007). These forest fires have not only threatened biodiversity but they also gave raise to the emission of several other air pollutants, like dioxins, particulate matter, VOCs and carbon monoxide, with adverse impacts to both the natural environment and human health.

Fisheries

Greece has a long-standing tradition in fisheries and aquaculture, owing to its geographical features and rich biodiversity of its surrounding marine areas, with nearly 450 marine fish species. The Greek fishing fleet is the largest in vessel numbers of all EU countries, however in terms of capacity reaches only 5% of the average EU. It consists of around 18,113 vessels with average vessel age at 24.5 years (Commission of the EU – CEU-, 2006). The break down is as follows: approximately 90% are small vessels for coastal fishing less then 12m long; approximately 2% are vessels longer than 12m with fishing-nets; approximately 1.5% are motored vessels with several smaller vessels for fishing-nets collection; 1.5% are bigger motored vessels that can fish in greater depths; whereas only 0.2% of total vessels fish in international waters.

From 2000 to date, the Greek fishing fleet is decreasing also due to the implementation of the EU's Common Fisheries Policy (CFP) and mainly after its 2002 reform, giving emphasis on the sustainability of the sector striking a balance between fishing activities and maintenance of fish stocks.

Total fisheries' production, for 2004-2005, amounted to 93,077 tons whereas the number of permanently occupied persons in collective fishing were 31,000. Fisheries in Greek waters target mainly small pelagic fish stocks, but also demersal species, bluefin tuna, swordfish and albacore. Despite its fishing legacy and commitment, Greece has been running a national deficit of fish products. Manufacturing and processing of fisheries' stuff is closely linked to fishing, particularly sea fishing, thus following its development and decline. Based on 2004 data, in the sector there are around 310 units producing 62,000 tons and with 3,000 employees. However a rapidly growing marine and freshwater aquaculture industry has been able to compensate for the fall in capture fisheries. The total annual yield from aquaculture in 2004 amounted to 105,650 tons, 42 and 1.2 times higher than that of 1986 and 2000, respectively. Greece ranks first among EU countries in production of marine species of intensive breed. The aquaculture sector, in 2004, occupied around 6,600 persons. In 2006, aquaculture accounted for close to 60% of total production of all fish products (sea bass and gilt head bream being the most important species), followed by shellfish.

The fisheries sector has a very prominent role in Greek economy not only because of its direct contribution to the country's GNP but also because of their critical role in maintaining economic and social cohesion of coastal and island communities. In parallel, sub-sectors like aquaculture are contributing considerably to exports and the consequent reduction of the negative commercial balance of the country.

However, in some of the large fishing areas of Greece, small open-sea fish stocks, benthic species as well as big migratory fish species are endangered while traditional aquaculture was decreasing and examples of unsustainable practices with adverse effects to coastal ecosystems were showing signs of increasing, over past decades. Greece's current policies, programmes and actions focus on rapidly reversing these trends and rehabilitating and protecting fish ecosystems.

■ Decision-Making, Legal and Regulatory Framework, Policy Instruments

Responsibility for agricultural issues in Greece falls under the Hellenic Ministry of Rural Development and Food (MRDF) while there is a close cooperation / co-competency on several issues including biodiversity, water resources, GMOs, land-use planning etc with the Hellenic Ministry of Environment, Physical Planning and Public Works (YPEHODE) as well as with other Ministries on other specific topics, e.g. with Ministry of Development on biofuels, with Ministry of Finance and Economy of financing policies, instruments and subsidies etc.

In the EU, the interaction of the rural sector with the environment is determined to a great extent by the framework set by the CAP. Although the initial CAP formulation favoured intensification, ignoring the environmental dimension, over the last two decades there has been a clear shift towards "agro-environmental development". In 1992, the CAP reform and EU Regulation 2078/92 set a basis for encouraging the promotion of agro-environmental practices. These policy instruments followed EU Regulation 2092/91 (currently repealed by EU regulation 834/2007), which set the framework for the development of organic farming in EU countries. However, restricted financial resources and low fund absorption did not allow for a full integration of environmental concerns in agricultural policy in the EU. Thus, increasing productivity has remained the main orientation of CAP. CAP's reform in 1999 and the implementation of EU Regulations 1257/99 and 1750/99 emphasise the integration of environmental concerns and recognise the multi-functional character of agriculture. In addition, in March 2001, the EU adopted the first Green Paper on the CFP and subsequently EU Regulation 2371/02, aiming at the restriction of over-fishing and the conservation of fish stocks, as well as the encouragement of alternative fishing forms, in an attempt to ensure the employment and the income of fishermen.

However, the most important progress in the agricultural sector in Greece that contributes substantially to the sustainable development of the country, has been the most recent revision of the CAP that occurred in 2003. This revision was necessary due to the commencement of the negotiations in the WTO context, i.e. the Doha Round or the Doha Development Agenda, in order to address more fairly the considerations of developing countries within the sphere of international trade of agricultural products, as well as the increasing awareness of citizens towards environmental protection and food safety. The main changes that the new CAP has brought, affecting the whole agricultural efficiency, include:

- The decoupling of subsidies to producers from the type and quantity of the products;
- The gradual shift from direct subsidies to the support for integrated agricultural development programmes;
- The compulsory application of the rules of the "Cross-Compliance" which constitutes a prerequisite for providing direct support to producers. Since 2005, all producers who are subsidised, according to the 2003 CAP revision and EU Regulation 1782/2003, are obliged to fully follow the "Cross-Compliance" scheme, which consists of standards for soil protection, maintenance of the organic matter and soil structure, maintenance of natural habitats, landscape protection, including protection of permanent grazing lands, thus keeping their lands in "good agricultural and environmental condition". In parallel, "Cross-Compliance" corresponds to the minimum obligatory statutory measures, applied in Greece, for the protection of environment, i.e. all farmers receiving a direct subsidy are compelled to abide by these set of measures aiming at a sustainable agricultural practice that will also impact positively on natural ecosystems, flora and fauna.

Thus, the new CAP provisions as a whole are expected to lead to a better, more efficient and more sustainable management of agricultural land and to the reduction of pressures on the environment while respecting social and nutritional requirements. More specifically, the new Greek policy objectives under the new CAP for a sustainable development of Greek rural areas and of the Greek agricultural sector, include inter alia:

- The promotion of integrated development of the rural land based on local resources and the reinforcement of its multifunctional character;
- The encouragement of farmers to adopt "wise" and environmentally friendly agricultural and fishing practices and to continue implementing land set-aside programmes;
- The improvement of land reclamation schemes and rational management of water resources.

Moreover, the gradual decoupling of subsidies from products' type and quantity (e.g. for olive oil, cereals, tobacco) is expected to lead several agricultural sub-sectors to the adoption of more comprehensive models of agriculture, with a consequent improvement in soil and water management.

The prerequisite for striking a balance between grazing land and cultivated land is expected to contribute to the same end. Moreover, the gradual reduction in subsidies is also expected to play a catalytic role that will lead farmers to direct their efforts more towards the current market trends and requirements thus giving emphasis on products that are in demand and not on those that are heavily subsidised but with a low market value.

Implementation of the CAP in Greece has encountered, however, opposition due to the particularities of Greek agricultural sector. Nevertheless the implementation of the agro-environmental EU Regulation 2078/92 and of EU Regulation 1782/03 even though are still on-going, their results and environmental performance are already satisfactory as key elements promoted under the Operational Programme for the "Agricultural Development and Reform of the Country-side" (OPADRC) 2000-2006. The environmental performance of the agricultural sector is expected to improve even further by the implementation of the new Operational Programme entitled "National Strategic Plan for Agricultural Development, 2007-2013" (NSPAD) for the fourth Programming Period, 2007-2013, (see also under Chapter "Strategies, Plans, Programmes and Projects").

Finally, Greek policy aspires to adequately address the need for creating strong public-private partnerships (PPPs) and for a proactive multi-sectoral strategic planning in order to achieve the set objectives for the sector's sustainable growth.

More specific policy issues are presented analytically, below.

Certification of practices and products

"Agricultural Products Certification and Supervision Organization" of Greece, or commonly known as "AGROCERT", is a Private Law Legal Entity operating for the public benefit under the supervision of the MRDF, and its establishment dates back in 1998 (Law 2637/98). AGROCERT is responsible for the implementation of national policy objectives regarding quality assurance and control in agriculture, aiming at a safe production of high quality agricultural products while safeguarding the environment. Its competencies cover, inter alia: certification of agricultural production systems; certification of agricultural products; evaluation, approval and supervision of Control and Certification private bodies that are accredited by the National Accreditation System and are active also in the field of verifying compliance with standards AGRO 2.1 and AGRO 2.2. on "Integrated Management System for agricultural production"; preparation and publication of optional sectoral standards for both farming and husbandry as well as development of specifications towards quality assurance of agricultural products (i.e. breeding, production and packaging of fish farming products, beef-veal, pork, poultry products).

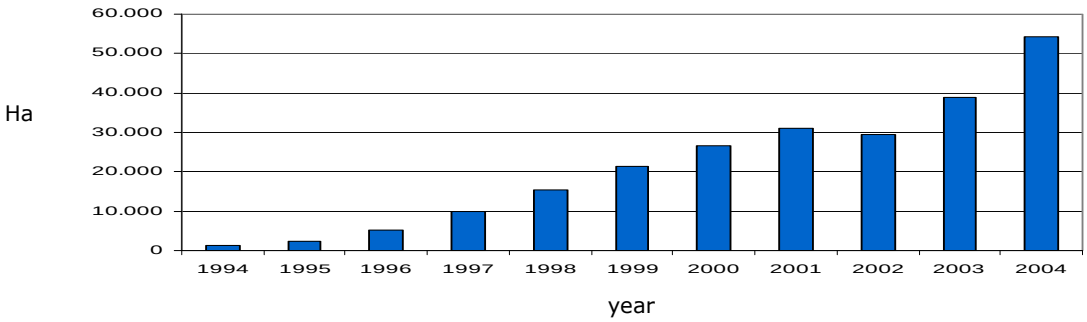
In this context, AGROCERT is responsible for the certification and labelling of organics products (see below under "Biological-organic farming and husbandry") as well as for the certification of products and foodstuff of "designations of origin" (PDO) and of "protected geographical indication" (PGI), aiming at protecting the exceptional properties and quality of some products that derive from their place of origin and/or from their production process itself. In particular, regarding PDO and PGI products, current institutional context comprises EU Regulation 510/2006 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs, coupled by JMD 261611/2007 on the determination of supplementary measures for its application in Greece as well as EU Regulation 1898/2006 laying down detailed rules for its implementation. Up to now, Greece has established 86 products as PDO and PGI. The identification of agricultural products and foods as PDO and PGI on one hand enables producers, in particular those of disadvantageous and remote areas, to promote products presenting special characteristics more easily, improving in this way their income with better prices in the market, while on the other hand enables consumers to buy high quality products with guaranties for their production, processing and geographical origin. Moreover, certification of PDO and PGI products by AGROCERT enables the use of acknowledged special labels, which ensure full compliance with EU and national legislation requirements.

Biological-organic farming and husbandry

Organic farming and husbandry is characterised as a management and production system based on the minimal use of pesticides and on practices sustaining and supporting balance between agricultural and natural environment which leads to the production of high quality competitive products, without chemical residues. The shift to biological-organic farming as well as biological husbandry, fisheries and forestry constitute important priorities in the sustainable development of the sector in Greece. Data

for 2003 and 2004 indicate a big increase in the biologically cultivated fields (especially olives, cereals, vines, fruits).

Figure 1.1: Progress of the total biologically cultivated land in Greece per year



Source: Hellenic Ministry of Rural Development and Food, Directorate of Biological Farming, 2005

In 2007, organic farming that developed rapidly over recent years, reached 4% of permanent crops area.

Greece has a comparative advantage regarding biological husbandry due to its rich natural resources, mainly in mountainous areas, and the fact that it can easily be converted and certified as biological. The lack of required infrastructure, however, poses limits to organic practice, farmers' access to markets and adequate income. Biological husbandry is directly linked to biological agriculture since animals are fed not only through grazing but also through biologically cultivated animal feed. However, a limiting factor to the further increase of biological farming and husbandry still remains the access to markets that could be further improved. Recently, with the promotion of slaughterhouses for biologically bred animals as well as with more effective mechanisms for the certification of biologically cultivated/bred produce, significant progress has been achieved in the overall manufacture, transport and market supply of organic farming products in the country, that will be further intensified in the coming years. An important step towards this direction is the intensification of controls for compliance with the standards set for biological agriculture by AGROCERT, with a view to increase market and consumers' reliance on these products' quality and thus increase their market share. Moreover, through the growing cooperation between AGROCERT and the "National Organisation of Agricultural Vocational Education, Training and Employment", commonly known as "DIMITRA", farmers' education and training on biological production practices is enhanced aiming at a better application of all related standards and certification requirements.

In particular, regarding certification requirements for biological-organic agriculture, the current institution context is composed by EU Regulations 834/2007 and 889/2008, JMDs 245090/2006 and 157B/10.02.2006 as well as Evaluation Regulation R-01/0200 of AGROCERT. Without proper certification, no product can be marketed as organic agricultural product. AGROCERT elaborates and manages the "National Label" regarding the identification of certified Greek organic agricultural products. Marketing of organic products requires that they have been previously controlled by competent certification bodies. The organic agricultural products Control and Certification System is managed by the Directorate of Organic Agriculture of the MRDF, as supervising body, as well as by AGROCERT, along with six approved Inspection bodies. Organic products should bear on their labels a series of indications, i.e. "Organic agricultural product" or "Agricultural product in transition" or "% of agricultural ingredients is organic" and the "approval code number of the Inspection and Certification Body" as well as the "National Identification Label of Certified Organic Agricultural Products". Any indication and claim regarding organic production that could mislead consumers is prohibited and prosecuted. The list of Bodies that are eligible to certify organic agricultural products comprises 11 companies (i.e. DIO, Fysiologiki E.P.E., BIO HELLAS S.A., Q Ways S.A., A Cert, IRIS A. CHATZIDAKI & Co., GREEN CONTROL, GEOTECHNICAL LABORATORY, LACON, GMCERT, FILIKI CERT).

Conservation of physical and cultural characteristics of Greek rural areas

In Greece, the traditional agricultural practices have created landscapes like hedgerows, traditional olive groves and vineyards, layered plateaus etc, that constitute a great part of the country's wild flora and fauna. These elements constitute simultaneously landscapes of great historical and cultural value and an appropriate basis for the development of agro-tourism and other recreational activities. However, the latest registry of phytogenetic sources in Greece (HMRDF/National Agricultural Research

Foundation-NAGREF, 2003) indicates a considerable loss in local traditional varieties in cultivated areas due to the change of land uses and the abandonment of traditional agricultural practices. In certain cases, overgrazing and deforestation, farming on steep slopes and excessive use of water for irrigation, have contributed considerably to soil erosion, loss of semi-natural habitats and wetland degradation. Thus, agriculture activity has had both positive and negative environmental impacts. Greek policies, during the last decade, have focused strongly on reversing negative impacts and maintaining the physical and especially cultural characteristics of croplands as a key parameter of the Greek traditional practices and cultural heritage.

Water resources protection

Greece, inherently a water scarce country, focuses strongly its policies on protecting water resources, both in terms of quality and quantity from unsustainable agricultural practices.

More specifically, after the 1997 incorporation of EU Directive 91/676 "for the protection of waters from nitrate pollution caused by agriculture" (arising mainly from the use of nitrogen fertilisers), in the Greek national legislation with Joint Ministerial Decisions (JMD) 16190/1335/1997 (Official Journal of the Government/OJG B519/1997), JMD 19652/1906/1999 (OJG B1575/1999) and JMD 20419/2522/2001 (OJG B 1212/2001), criteria for determining the level of risk of nitrate pollution of inland waters by agriculture were drawn up and specific areas to be particularly protected due to their vulnerability were designated as follows:

i. Surface waters (especially water used or allocated as drinking water), the nitrate load of which exceeds or may exceed the threshold values set by JMD 46399/1352/1986 regarding "drinking water". This category features the basin of river Pinios of the Ilia Perfecture in Peloponnesus.

ii. Ground waters, the nitrate load of which exceeds or may exceed 50 μg/l. This specific category features the aquifers of the Thessaly plain, the aquifers of the Kopaida and Argolic plains, the groundwater of the basin of Pinios river in Ilia, the groundwater of the basin of Strimonas river as well as the aquifers of the Arta – Preveza plain (i.e. the groundwater of the basins of Louros and Arahthos rivers).

The first two categories (i and ii) also include the surface and ground waters of the Pella – Imathia plain around Thessaloniki that encompass the basins of the Aliakmonas, Loudias, Axios and Gallikos rivers, the lakes of Lagada and Volvi as well as the surface and ground waters of South Kilkis area.

iii. Lakes and river deltas as well as coastal and sea areas that are prone to eutrophication. This category includes the waters of Pagasitikos bay.

According to JMD 19652/1906/1999, a catalogue featuring at first 4 zones vulnerable to nitrate pollution was compiled, in accordance to the article 3 of EU Directive 91/676, which included the areas of i. Eastern and Western Thessaly, ii. the Kopaida plain, iii. the Argolic plain and iv. the basin of Pinios river of Ilia. Furthermore, according to JMD 20419/2522/2001, the catalogue was updated with 3 more areas: v. the area of the Thessaloniki-Kilkis-Pella-Imathia Perfectures, vi. the basin of Strimonas river and vii. the Arta–Preveza plain. Therefore, 7vulnerable zones have been enacted to date.

In compliance with article 5 of EU Directive 91/676, Greece, as part of its agro-environmental policies, has enacted and set up 7 Action Plans, one for each of the abovementioned 7 overall designated vulnerable areas, aiming at the protection of the aforementioned designated vulnerable zones to nitrate pollution. These specific Programmes incorporate a set of rules and obligations of farmers situated within the designated vulnerable zones. More specifically, they enact:

- the application of a threshold for maximum nitrogen fertilisation of soils according to the type of cultivations, the soil type, climatic conditions, the ground's slope, irrigation needs and practices etc in order to prevent fertilisers' excess, surface runoffs or leachates;
- the deployment of sustainable irrigation practices and well designed irrigation schemes to prevent irrational use of water and soil sliding;
- the safe and sustainable disposal of agricultural / animal breeding waste aiming at reducing nitrate point pollution;
- the maintenance of wild flora during autumn and winter especially on slopes so as to reduce nitrate surface runoffs;
- the deployment of high safety measures for fertilisers' transport and storage.

In compliance with article 4 of the EU Directive 91/676 on nitrate pollution in Greece and aiming at safeguarding the quality of all water bodies in the country, Ministerial Decision (MD) 85167/820/2000 (OJG 477/B/2000) established the "Code of Good Agricultural Practise related to the protection of

water bodies against nitrate pollution caused by agriculture". The measures foreseen in the Code are compulsory within the vulnerable zones to nitrate pollution (as specified above under bullet points i, ii, iii), whereas for the rest of the country, the implementation of the Code is on voluntary basis its aim being the safeguarding of a generally good quality status of all water bodies of the country. The Code also aims to assit farmers to shift to more environmentally-friendly practices which will allow them to secure their income while reducing nitrate pollution mainly as result of fertilisers used in cultivations. More specifically, the Code aims at:

- Reducing nitrate concentrations in surface and groundwater due to agricultural runoffs and leachates;
- Providing guidance and regulations as regards to the storage and transportation of the fertilisers, the quantity, use and application to nitrogen fertilisers;
- Providing guidance to farmers on proper water management practices, i.e. irrigation schemes, water conservation etc;
- The proper and safe use of pesticides;
- The proper handling and disposal of agricultural/animal breeding waste so as to safeguard both environmental quality and public health.

Moreover, regarding irrigation water, national policy focuses on formulating and implementing an integrated national scheme, encompassing agronomic, water and environmental policy objectives, which promotes the rational use of water, aims to improve irrigation efficiency and practices in both communal and private irrigation networks and ensures that all water abstractions are properly licensed. This scheme focuses at gradually replacing groundwater takes by surface waters.

Climate Change

Agricultural practices have been calculated to contribute to by 8.7% to overall GHG emissions in Greece (2004), without accounting for "Land-Use, Land-Use Change and Forestry" (LULUCF). More specifically, emissions arise in the sector due to:

- N_2O emissions from soils due to the use of nitrogen fertilisers and manure management. N_2O emissions in 2004, in Greece, were mainly attributed to agriculture contributing to 70.7% (8,439.25 $ktCO_2$ eq) of total emissions from agriculture;
- CH_4 emissions from livestock digestion process and manure management contributing to 29.3% (3,497.46 $ktCO_2$ eq) of total emissions from agriculture.

According to the "2nd Revised National Action Plan for the Abatement of CO_2 and other Greenhouse Gas Emissions 2000-2010" (NAPCC, originally drawn up in 2002 and revised in 2007) and the "National Strategic Plan for Agricultural Development" (NSPAD), 2007-2013, that will substitute current ongoing Operational Programmes (for further details see under Chapter "Strategies, Plans, Programmes and Projects") the main policy options for reducing GHG emission from agriculture relate to the increase in the effectiveness of animal waste management, the further promotion of biological farming and animal breeding (according to the target set under the NSPAD of 99,997 ha to be cultivated until 2012 according to the principle of organic farming resulting to a reduction in emissions of 432 $ktCO_2$ eq for the period 2008-2012) and the further promotion of reforestation/afforestation (according to the target set under NSPAD for 90,811 ha of forested land by 2012 taking also into account the forest areas lost during the devastating wildfires of summer 2007, the reduction in emissions is calculated to 4,115 $ktCO_2$ eq for the period 2008-2012).

Genetically Modified Organisms (GMOs)

The Greek policy towards GMOs as expressed through the competent authority, i.e. the Hellenic Ministry for the Environment, Physical Planning and Public Works (YPEHODE), regarding the entry into market of genetically modified hybrids as well as the release in the environment of products based on genetic modifications, has been and still is negative, based on both an environmental and a precautionary perspective. The concerns voiced by YPEHODE regarding the use and release of GMOs do not only stem from scientific findings on the possible adverse effects on non-target or even useful insects, on other animal species, on the natural environment as a whole as well as on human health but are also based on the negative public opinion of Greek citizens towards the use of GMOs and biotechnology, as "potential harmful". Thus, there are no GMO cultivations in Greece.

Forestry

The main piece of forest legislation is the 2003 Forest Law, which adopts the principles of sustainable forest management, biodiversity conservation and multiple uses of forest lands. A Forest Functional Plan is in place, including measures for burnt land restoration, fire protection, improvement of degraded forests, designation of protected forests, and completion of the National Forest Registry by 2012. Moreover, a Thematic Strategy for Forests and Mountainous Ecosystems is currently being developed to improve the integration of biodiversity issues in forest management.

Regional Forest Services are in charge of managing forested areas, including ranger services, and of developing ad hoc management plans. These plans regulate tree cutting, grazing, hunting (on the basis of annual ministerial decisions), use of chemicals, collection of herbs and other plant species. Around 4% of forested land (about 160,000 ha) is managed for biodiversity protection, 20% of which for in situ conservation of genetic resources. Even though, to date, only one productive forest is eco-certified (by the Forest Stewardship Council), covering about 31,500 ha, national policy strongly promotes the implementation of a national forest certification system.

Fisheries

Greek fisheries policy is based on sustainable management objectives, including rational exploitation of fisheries resources and protection of vulnerable areas and species, along the lines of the EU CFP. The CFP establishes catch quotas for EU MSs for each type of fish, and supports the fishing industry by various market interventions, for example by regulating the quality, grading, packaging and labelling of fish and fish products; encouraging the establishment of producer organisations to protect fishermen from sudden market volatility; the establishment of minimum fish prices and finances the buying up of unsold fish; and setting rules for trade with non-EU countries. Apart from the above-entioned measures induced by the CFP, there are several policy instruments adopted by Greece's own initiative, on national level. These national measures aim at regulating fishing by setting minimum landing size of commercial species, mesh size, closed areas and seasons, minimum depths and distances from shore for fishing and penalties for infringements. To minimise the impacts of fishing activities on the protected aquatic fauna (e.g. random capture of sea mammals and water birds), the usage of drift nets and pelagic trawling have been banned. For the conservation of the habitats of endangered aquatic organisms, protection zones restricted to fishing have been defined. Particular attention has been given in recent years to the environmental aspects of the aquaculture industry, both to ensure the quality of the product and to maintain high water standards in the coastal waters.

MRDF's General Directorate for Fisheries is responsible for exercising fisheries policy at the national level. This involves implementing the rules of the EU CFP by issuing regulatory measures for fisheries in Greek territorial waters, and developing and managing the aquaculture sector. The Ministry of Mercantile Marine, Aegean & Island Policy's Directorate of Port Police, along with local port offices and the Fisheries Divisions of Local Authorities of the Prefectures, implement the provisions of the fishing legislation (EU and national) and, in the case of infringements, imposes administrative penalties (fines, temporary withdrawal of vessels and licenses). Responsibility for the inspection of the market for fisheries products is vested in the Ministry of Development/General Secretariat of Commerce. Participation of the fishing industry stakeholders in the design, examination and introduction of new fisheries legislation is arranged through a Fisheries Council that includes, inter alia, representatives of the central administration and research institutions.

All aquaculture operations (including fish and shellfish farming) in Greece require approval by an array of Ministries; i.e. an Environmental Impact Assessment that is submitted to YPEHODE and a license from a Regional Fisheries Authority. A system of limited entry for new applicants is in place to control production and to support the overall policy objective of achieving a balance between environmental and health concerns as well as economic benefits. The licensing procedure for aquaculture farms controls the introduction of alien species. There are also plans underway to establish Areas of Organised Aquaculture Development, to increase efficiency of aquaculture activities and to better integrate them in coastal zone management. It should also be noted that one important benefit of the mariculture effort has been the new employment and income generated in previously uninhabited island areas normally excluded from commercial activities.

Agrofuels

Agrofuels have become a major issue in recent years, not only because of the adverse developments in the energy sector worldwide, but also due to their environmental and economic benefits. In this

respect, Greece, together with all other EU MSs has committed in 2007, in the context of the adopted by the EU Spring Summit "Energy Policy for Europe" to increase the use of biofuels to 10% of total fuel use by 2020. More specifically, according to Law 3423/2005 that has incorporated EU Directive 2003/30 into the national legislation, biodiesel and bioethanol consumption in Greece should reach 160,000 ton and 400,000 tons respectively. According to the climatic and physical context of Greece, a feasible yield is calculated to 12 tons per ha per year of energy crops. Already 4 biodiesel production plants are in operation in Greece (in Kilkis, Volos, Patra and Lamia) that have already supplied 300,000 Klt of biodiesel to the market through refineries. Most of them use frying oils as a main source of production coupled with smaller quantities of seed oils mainly from crambe, thus giving a boost to the reform of crops' allocation in the country.

However, from a development perspective, more recent global concerns regarding the competition between agrofuels and food security constitutes a determining factor of the Greek policy towards the issue which is currently being remodelled, formulated and adapted, based on purely sustainability criteria. In this respect, Greek policy fosters the reuse of agricultural by-products in the energy sector with direct benefits for both energy efficiency and environmental protection.

As an internationally recognised certificate and agreement for the sustainable production of biofuels including balancing GHGs from all possible options, is still lacking, Greece is aiming at achieving its climate change mitigation commitments by giving primarily emphasis on the further promotion of Renewable Energy Sources (RES). Moreover, some of the concerns with both local and global extend Greece is addressing and counterbalancing at the moment include: the increasing competition over farmland and water, the increased global demand for foodstuff, the displacement of food production and the increase in food prices, the displacement of smallholders that might weaken local social cohesion etc. Thus, the tendency currently in Greece, apart from the promotion of RES, also focus towards prioritising research on second generation biofuels and exploitation of biomass from agricultural by-products and waste. More specifically, Greece explores, through applied research programmes, methods to process olive oil industry by-products, which are difficult to manage in an environmentally sound manner, for the production of biofuels, thus also benefiting the environment. Moreover, forest biomass is also intended to be used further in Greece, in a sustainable manner, as a second generation biofuel.

Trade

In order to maintain the competitivity of Greek agricultural products, especially vis-à-vis the growing completion that the full operationalisation of several Free Trade Zones that the EU has committed to (e.g. Free Trade Zone in the Euro-Mediterranean Partnership framework by 2010, MERCOSUR, COTONOU etc) as well as the growing competition that the banning of protective export subsidies will bring about within the context of the on-going negotiations of the "Doha Round" of the WTO, Greek policy focuses, inter alia, on the certification and quality control of agricultural products through the promotion of food labelling, e.g. organic farming products, PDOs and PGI products etc (see also above under "Certification of practices and products" and "Biological-organic farming and husbandry"). This type of labelling already widespread and growing, is expected to contribute even further to the increase of the portion of Greek products in international markets, building on the growing awareness and selectivity of consumers in developed countries regarding the high quality standards and safety of manufactured foodstuff.

■ Strategies, Plans, Programmes and Projects

Operational Programmes (OPs)

In the context of the various CSFs, Greece has drawn up several Operational Programmes aiming at the sustainable development of the agricultural sector, of fisheries and of rural areas. More specifically, during the 3rd Programming Period 2000-2006, i.e. the 3rd CSF, with regard to agricultural, rural development and fisheries, priority has been given to the overall rural competitiveness in a sustainable and balanced way, with particular emphasis on the mobilisation of private investment, the promotion of quality, improvements in manufacturing and marketing of agricultural products as well as the protection of natural resources and the environment. Regarding fisheries, priority has been given to the reorganisation of the fleet, aquaculture, and product processing.

Based on the above general objectives, during the 3rd Programming Period 2000-2006, the MRDF has been responsible for the drawing up, together with the related CEU Services, and the management of 4 OPs:

i. The Operational Programme for the "Agricultural Development and Reform of the Country-side" (OPADRC),
ii. The "Agricultural Development Plan Document" (ADPD)
iii. The Operational Programme for "Fisheries" (OPF) as well as
iv. The Operational Programme of the Community Initiative "LEADER+" (LEADER+).

In specific:

i. The general development objectives of the OPADRC for 2000-2006 were:

- The first general objective was to "improve the competitiveness of Greek agriculture in view of the challenges of an increasingly competitive international environment". Within this framework, the aim was to improve the competitive conditions of fresh and processed Greek agricultural produce, so that production can cope with the pressures of a possible increase in imports and also enhance its exporting capacity.
- The second general objective was "the sustainable and integrated development of the countryside in order to increase its competitiveness and attractiveness and to restore its social and economic function". This objective aimed to revive the declining regions whose local economy is directly dependent on the primary sector. The specific objective was to create in these areas the appropriate terms and conditions in order to reverse the unfavourable demographic trends, by promoting opportunities for multi-activity, equal opportunities on a balanced gender approach and use of natural resources in ways that will ensure sustainability.
- The third general objective was to "conserve and improve the environment and the countryside's natural resources". This objective aimed to develop the appropriate infrastructure to combat isolation in combination with other environmental protection programmes – such as those combating forest fires and other natural disasters – in order to improve the attractiveness of rural areas, with a view to reverse the current trend of countryside abandonment through an improvement of services provided.

In order to achieve the above objectives, 7 priority axes and 34 measures, i.e. concrete projects are implemented, that include assistance to small farm investment plans, construction of small public works projects etc.

The basic results expected from the completion of the OPADRC include the following:

- Investment aid to 13,100 agricultural holdings, which correspond to 5.2% of the total number of agricultural holdings in the country that meet the requirements of the programme;
- 24% increase in agricultural productivity (family income per work unit);
- 1,100 assisted investment plans related to the processing and trade of primary sector products, including forestry products;
- Creation of 3,800 new jobs in the processing and trade of primary sector products, including forestry products;
- 29% contribution to assets created in the agro-industry sector;
- 20,300 new farmers assisted, which corresponds to 9% of all individuals over the age of 45 who are employed in the agricultural sector
- Improvement of 20% of the existing agricultural education structures;
- 5% increase in sector exports;
- 5% improvement in milk-producing capacity for sheep and goats included in livestock breeding and reproductive improvement programmes; 10% improvement for cows;
- Over 20% drop in plant protection costs in fields included in the OPADRC;
- Increase in reservoir water storage capacity to 8 million m^3;
- Improvement in irrigation conditions for 10,000 hectares of cultivated land;
- Implementation of 40 integrated agricultural development programmes with interventions targeting 800,000 inhabitants of mountainous, disadvantaged and island regions.

ii. With regard to the ADPD, its general development objectives for 2000-2006 were 4, analysed across 4 axes of actions:

- Support for the early retirement of farmers;
- Equalising balancing compensation for farmers aiming at the improvement of the Greek agricultural sector within the current competitive international context as well as at the enhancement of social cohesion in rural areas in harmony with environmental protection principles;
- Promotion of agro-environmental measures;

- Afforestation of agricultural lands.

iii. With regard to the OPF, its general development objectives for 2000-2006 were:
- Achieve a sustainable balance between fishing production and conservation of fisheries resources;
- Apply the principles of responsible fisheries and aquaculture;
- Enhance sector competitiveness and contribute to the development of economically sustainable businesses;
- Improve market supply quality and make good use of fisheries and aquaculture products;
- Contribute to local development, particularly of regions dependent on fisheries;
- Use domestic water resources rationally based on sustainability principles;
- Promote equal opportunities in respective labour market.

These overall objectives are defined more specifically as follows, per theme:
- Regarding sea fisheries: protection of fisheries resources, restructuring of the fishing fleet, improvement of living conditions of fishermen as well as support in terms of vocational reorientation for fishermen and related professionals.
- Regarding aquaculture: product quality upgrading, modernisation and restructuring of enterprises in the sector, modernisation of the data monitoring and entry for the production, trade and employment system, increase in the production of aquaculture products, improvement of conditions in fish farms located in inland waters, environmental protection ensuring sustainability as well as aquaculture product market research and location of new markets according to consumer demands.
- Regarding processing and trade of fisheries produce: re-orientation of the sector towards high value-added products, increased productivity of processing and trading enterprises and increased product exportability, expansion of the geographic coverage of the sector activities, provision of suitable support infrastructure and services to sector as well as improved sector contribution to maintaining and/or increasing employment rates in parallel with environmental protection.

The basic results expected from the full completion of the OPF include, inter alia, the following:
- Construction of fishing vessels with a total capacity of 800 GT and/or power of 8,300 kW, namely approximately 0.76% of the total capacity and 1.28% of the total power of the country's fleet;
- Modernised vessels with a total capacity of 20,100 GT and/or total power of 77,000 kW, namely approximately 19.10% of the total capacity and 11.90% of the total power of the country's fleet;
- Increased aquaculture production capacity by 10,000 tonnes for marine species, by 1,750 tonnes for fresh water species, by 3,450 tonnes for shellfish and by 50 million for spawn fish;
- Increased fisheries product processing and trade capacity by 600 tonnes for fresh or refrigerated products, by 200 tonnes for canned or semi-preserved products, by 11,000 tonnes for frozen or deep-frozen products and by 2,500 tonnes for other processed products;
- Increased production in processed products by 11,000 tonnes per year.

iv. With regard to the sustainable development of rural areas, the LEADER+ Programme constitutes an EU initiative designed to improve the quality of life of the population of the rural areas and to attract young people into the rural economy, by implementing a set of actions which meet both national and EU priorities under the 3rd Programming Period, namely employment, equality, environmental protection, etc. In this respect, the Greek LEADER+ Operational Programme, had two general development objectives:
- Promote an integrated, high-quality, sustainable development of the rural areas, by means of pilot implementations;
- Support efforts to end the isolation of various regions, on all levels of economic and social life.

It should be stressed that for the new (i.e. 4th) Programming Period 2007-2013, all 3 abovementioned OPs for Agriculture that are at completion stage will be encompassed under one single OP, i.e. the "National Strategic Plan for Agricultural Development" (NSPAD), 2007-2013. NSPAD which has already been drawn up, approved and amended also to include particular activities for addressing the results of the devastating wildfires that occurred in Greece in the summer of 2007, will be focusing on 3 objectives: the promotion of the competitiveness of agriculture, forestry and food production; the improvement of environmental quality and landscape, the enhancement of the quality of life and the diversification of income in rural areas, coupled with a 4th objective under the new LEADER for the promotion of bottom-up approaches in support of small scale local communities' initiatives. NSPAD has been designed to interlink effectively with the various related national sectoral OPs within the overarching "National Strategic Reference Framework" (NSRF) 2007-2013 that represents the new CSF Framework for Greece for the period 2007-2013 (e.g. the new Operational Programme on Environment and Sustainable Development / OPESD 2007-2013 of YPEHODE) as well as with the

"National Reform Programme for Development and Employment" (NRP) 2005-2008 in the context of the implementation of the EU Lisbon Strategy in Greece. It is also fully aligned with the provisions of the latest CAP revision, especially as regards to agro-environmental issues.

Regarding Fisheries, for the 4th Programming Period 2007-2013, a similar "National Strategic Plan for Fisheries" (NSPF) has been elaborated as the new Operational Programme through which the country's strategy for the fisheries sector and fisheries areas will be implemented. The new NSPF and its resulting OP will be co-financed by the European Fisheries Fund (EFF) and national funds. This Programme too is entirely coherent and complementary with the NSRF and the rest of related sectoral OPs, at a strategic level, for the period 2007-2013. Its main goals include: the improvement of competitiveness in the fisheries sector, the protection of the environment and sustainable management of aqueous resources and the diversification of the economies of areas that rely on fisheries.

It should be additionally highlighted that both NSPAD and NSPF have undergone a Strategic Environmental Assessment that will guide their implementation and its monitoring in practice; moreover they both present strong synergies, complementarity and consistency with the various ROPs to be implemented under the same period 2007-2013, focusing on the sustainable and balanced development of all the country's Regions.

Finally, it should be noted that Greece currently implements ad hoc integrated programmes and actions, as an emergency priority, for the protection and restoration of all burnt forest areas (e.g. Parnitha Mountain north of Athens, Olympia, Kaiafas etc) by the 2007 devastating wildfires. These actions are planned to be continued also during the 2007-2013 period.

Specific Measures and Actions promoted by the OPs 2000-2006

These indicatively include, among others, the following Measures and Actions, as grouped hereby by general strategic objectives:

i. Strengthening of good agricultural practices

- Codes of good agricultural practice (CoGAP) for the implementation of agri-environmental measures
With the CAP revision with Agenda 2000, the implementation of CoGAPs started aiming at a sustainable management of agricultural land, conservation of natural resources, protection of agricultural landscape and safeguarding of farmers' and consumers' health. CoGAPs represented the minimum requirements for environmental protection based on which the potential loss of income of farmers abiding to these stricter environmentally friendly practices could amount to so as to calculate their consequent state financial support. CoGAPs have been revised and updated in Greece, through JMD 125347/2004 as amended by JMD 140920/2005, to satisfy current demands for environmental protection and to ensure compatibility to the CAP's most recent revision. CoGAPs implementation is obligatory for all farmers receiving direct subsidies according to EU Regulation 1259/1999 as well as to those that the measure of "equalising balancing compensation" applied (2nd axis of action under the ADPD) or those that implemented "agro-environmental measures" (3rd axis of action under the ADPD).

- CoGAP for the protection of water resources from nitrate pollution of agricultural origin
In the context of implementing EU Directive 91/676 on nitrate pollution in Greece, and in particular its article 4, the "CoGAP for the protection of water resources from nitrate pollution of agricultural origin" was enacted. The Code's main aim is to assist farmers to apply more environmentally friendly practices regarding use of nitrogen fertilisers and, in parallel, safeguard their income. More particular, the Code focuses on preventing water resources pollution from nitrates; promoting a sustainable pattern of water resources management for irrigation aiming at water savings; safe application of pesticides and; safe management of animal waste. The application of these measures is obligatory in the 7 areas that are designated as "vulnerable zones to nitrate pollution" (see also under Chapter: "Decision-Making, Legal and Regulatory Framework, Policy Instruments", "Water resources protection") whereas for the rest of the country its application is optional. It should be noted that the designing of the related Action Plans within the above mentioned vulnerable zones is a prerequisite for designing and approving a subsidised agro-environmental measure under the ADPD; farmers active within a vulnerable zone are obliged to fully implement the related Action Plan without being subsidised.

- "Cross-Compliance"
Since 2005, within the revised CAP, all farmers that are a being directly subsidised under EU Regulation 1782/2003 have to comply with the "Cross-Compliance" provisions that includes standards for soil protection, conversation of its organic matter and structure as well as conservation of natural habitats and landscape, including permanent grazing lands. Subject to full and good application of these measures, the extent to which farmers can actually benefit form the direct support that they are potentially able to receive, is calculated. (see also under Chapter: "Decision-Making, Legal and Regulatory Framework, Policy Instruments").

ii. Sustainable management of water resources

Over and beyond the above mentioned measures for implementation of EU Directive 91/676 on nitrate pollution in Greece and the consequent application of CoGAP for the protection of water resources from nitrate pollution of agricultural origin, additional agro-environmental measures are being implemented on a voluntary basis, mainly under the 3rd axis of the ADPD for "Environmental protection and Sustainable Development of the Agricultural sector" aiming at the qualitative and quantitative protection of surface and ground water, the protection of wetlands and natural habitats, the reduction of soil loss etc. More analytically, these Measures and Actions include:

- Reduction of nitrate pollution of agricultural origin (Measure 3.5 of ADPD)
In the context of implementing EU Directive 91/676 on nitrate pollution in Greece, 7 vulnerable zones prone to nitrate pollution have been designated and enacted coupled by 7 respective enacted Action Plans for their protection (see also under Chapter: "Decision-Making, Legal and Regulatory Framework, Policy Instruments"). Measure 3.5 corresponds to these activities: initially, in 2000, activities would cover 35,100 ha whereas today they are implemented by 10,900 farmers for an area of 114,000 ha, indicating that the initial aim was over-covered by 225%. During 2001-2004, 2,480 contracts were signed for participation to these activities corresponding to 24,800 ha whereas during 2005-2006, 10,768 additional contracts were signed, corresponding to 112,800 ha, thus indicating an increase in contracts in two years that exceeds 330%. Activities similar to the ones included under Measure 3.5 for the reduction of nitrate pollution will be continued under NSPAD 2007-2013.

- Protection of wetlands (Measures 3.6, 3.9, 3.10, 3.16, 3.17 of ADPD)
Significant wetlands in Greece, such lakes Volvi-Koroneia, several lagoons of the Region of Thrace, lake Doirani etc have managed to preserve their ecological functions and values throughout the centuries due to the traditional and environmentally friendly agricultural practices that farmers followed. However, over recent decades, intensive patterns of cultivation resulted in a deterioration of their environmental status that required the enactment and implementation of specific Measures for restoration of the ecological status of these wetlands through, inter alia, promotion of environmentally friendly practices (fallowing, development of ecological compensation areas, crop-rotation etc) and reduction of the use of water for irrigation and fertilisers' run-offs. Measure 3.6 regards the protection of lake Pamvotis, with a total original budget for five years amounting to EURO 4 million and an area coverage of 1,300 ha. Measure 3.6 will be continued under NSPAD 2007-2013 covering an area of 3,000 ha. Measure 3.9 regards the protection of the lakes and lagoons in the Region of Thrace. During 2000-2006, 870 farmers participated in the Measure with an area coverage of 9,726 ha, while for 2007-2013, the expected area to be covered will reach 20,000 ha. Measure 3.10 regards the protection of lakes Volvi & Koronia and during 2000-2006, 120 farmers representing an area of 1,400 ha participated in its implementation. During 2007-2013, this Measure will be incorporated into the above mentioned Action Plans for the protection of water resources vulnerable to nitrate pollution of agricultural origin. Measure 3.16 regards the protection of lakes and lagoons of the Region of Western Macedonia, with emphasis on lakes Vegoritida, Himaditida and Zazari. In 2006, a total of 29 beneficiaries representing an area of 229.5 ha participated in the Measure that will be continued under NSPAD 2007-2013 with an area coverage of 10,000 ha. Measure 3.17 regards the protection of lake Doirani, a transboundary lake shared with FYROM. In 2006, a total of 42 beneficiaries representing an area of 450.8 ha participated in the Measure that for the period 2007-2013 will be incorporated into the above mentioned Action Plans for the protection of water resources vulnerable to nitrate pollution of agricultural origin. All these Measures will cover new additional areas, apart from the ones currently designated, under NSPAD 2007-2013.

iii. Promotion of biological farming

Biological farming constitutes an integrated approach to agriculture contributing to achieving higher environmental standards in several related aspects, e.g. protection of soil and water resources,

biodiversity conservation, low energy demand due to a low demand of fertilizers and pesticides. Implementation of the two related Measures (3.1 and 3.2) under ADPD, is subsidied.

- Biological Farming (Measure 3.1 of ADPD)
Financial support for its promotion begun in Greece already in 1996. Beneficiaries are supported annually according to the type and area of cultivation, and for 5 years, provided their full compliance with standards set for biological farming by EU Regulation 2092/1991. In 2005, this measure was applied at 87,000 ha with 12,000 beneficiaries participating. In 2006, 10,000 beneficiaries entered the programme with 77,000 ha covered. This very rapidly increasing trend is also indicated by accumulative percentages: in 2004-2005, the number of new beneficiaries increased by 57% whereas in 2005-2006 the increase was 62%, with an increase by 75% and 48% respectively in the surface area covered. This successful Measure will be continued during the period 2007-2013.

- Biological husbandry (Measure 3.2 of ADPD)
Financial support for its promotion begun in Greece already in 2001. Participating beneficiaries are obliged to comply with the standards set by EU Regulation 1257/1999 for a minimum of five years. In 2004, there were 956 participating breeders covering an area of 88,513 ha whereas in 2006 there were 3,210 covering an area of 248,726 ha, indicating a very rapidly increasing trend. This successful Measure will too be continued during the period 2007-2013.

iv. Preservation of the plant and animal genetic resources (Measures 3.7, 3.8, 3.11, 3.13 of ADPD and Measure 6.3 of OPADRC)

The plant genetic resources feature the plants' multiplying material (i.e. seeds, genes, etc), which may be agriculturally utilised for the production of food. The material features traditional species, nowadays disdained by the modern agriculture system of nutrition, wild species (the ancestors of species cultivated today), as well as local species (original material). These resources need to be protected and systematically monitored. Measure 3.7 regards the protection of endangered local wild animal species (e.g. sheep, cattle, goat, horse, pig and poultry species), so that their numbers are maintained or increased above a threshold so that are no longer considered endangered. Some indicative results so far show that local sheep species in the island of Chios are above safety level and are no longer considered endangered whereas goats in the island of Skopelos are reaching safety level; 12 species are extinct; the increase rate of the rest 22 species under protection is at 134%. During 2000-2006, 1,034 contracts corresponding to 12,807 Units of Animal Capital (UAC) were signed while the Measure is about to continue for the period 2007-2013. Measure 3.8 regards the conservation of local plant resources threatened by "generic erosion". Under this Measure that is being financed though the ADPD and the European Agricultural Guidance and Guarantee Fund - Guidance Section (EAGGF-G), in 2006, 300 farmers, corresponding to 570 ha, participated with 40 local varieties (mainly annual cultivations) selected for protection. This Measure, with a much enlarged scope, will too be continued during period 2007-2013. Measure 6.3 regarding the establishement of a Sample Bank of plant genetic material (covering both construction of new modern facilities as well as collection of a large part of the remaining genetic material of the country, targeting at an annual of 5,000 plant samples), is funded by 69.3% from EAGGF-G and by 30.7% from the National Public Investment Programme of MRDF, with a total budget amounting to EURO 2.13 million and with finalisation date in early 2009. Measure 3.11 regards the conservation and restoration of traditional hedgerows in the boundaries of farming fields, aims at the protection of biodiversity and habitats of wild fauna in agriculture areas; the preservation of feeding, resting and nesting fields of predators and immigrant birds; the conservation of agricultural landscape; and the development of ecological compensation areas. This activity, even not so highly valuated by farmers so far, is of critical ecological importance for competent Authorities, targeting mainly remote and disadvantaged areas, e.g. the Evros and Ioannina Prefectures in Northeast and Northwest of Greece. Finally, Measure 3.13 regards the conservation of cultivated areas that have become, over the years, a wildlife habitat or are providing food to endangered and rare wildlife species, and focuses primarily to achieving a harmonic coexistence between farmers and wildlife. This Measure is implemented in several NATURA 2000 sites under protection network as well as in their surrounding areas, located in mainland Greece as well as in the islands.

v. Maintenance of areas of high ecological value and of traditional agriculture landscapes (Measures 3.3, 3.14, 3.15 of ADPD as well as related activities under OPADRC)

Measure 3.3 regards the long-term fallow of agricultural lands for their transformation to natural habitats aiming at increasing biodiversity and soil retention, through provision of incentives and financial support to farmers for long-term setting aside their cultivation lands. Even not so popular to

farmers with only 6,200 ha covered currently, the Measure will be continued also during 2007-2013. Measures 3.14 and 3.15 regard the protection of the traditional olive grove in the area of Amfissa near the famous Delphi archaeological site (Central Greece) and the preservation of the traditional vineyards in the Aegean island of Santorini, respectively. Both agricultural lands offer ecological and high cultural/traditional functions as they are areas where both practices, i.e. olives and vines growing, are considered historically ancient and are conducted through traditional methods. Farmers participating in these Measures are subsidised to preserve traditional agricultural practices facing extinction, help protect the soil from erosion and land use change and development of ecologic compensation areas. Moreover, in the context of OPADRC, 2 pilot management plans for 2 areas protected under NATURA 2000 (i.e. the Zakinthos Sea Park and the lake Pamvotis) where agricultural activities take place, have been compiled and are being implemented. These plans intend to achieve a high ecological protection status for these 2 areas while continuing the conduction of agricultural practices in an environmentally friendly manner: the sites' Management Bodies are equipped with computing tools and models that provide guidance to the planning (type, extend etc) of agricultural activities so as to safeguard the natural habitat at all times.

Finally, in the context of OPADRC 2000-2006 and in particular under its Measure 4.3 on promoting activities for improving exports, there have been 557 entities participating, with a total budget amounting to EURO 29.06 million. Its general objectives include promotion of environmentally friendly production practices as well as promotion of organic, wholesome, PDO and PGI products, mainly through better marketing strategies and faster adaptation to international market prices so as to increase competitiveness and exports of quality products. Marketing strategies include organisation of and participation in regional and international Expos, tasting events and road shows, production of promo material etc. Main products selected for these activities are wines, olive oils, vinegar, fruits, dried nuts, olives, cheeses etc. Similar Measures are being implemented in the context of OPF 2000-2006, for increasing the market value and visibility of Greek fish products abroad, e.g. for the promotion of gilthead and sea-bass some EURO 3,2 million have already been allocated.

Strategic Objectives, Measures and Actions for the period after 2007

Greece's NSSD initially elaborated in 2002, is currently under revision, along the reviewed EU Strategy for Sustainable Development of 2006. The main strategic objectives, goals and targets that the revised NSSD will aim at encompassing for the issues of agriculture, forestry and fisheries, in line with the goals and targets set under the NSPAD and the NSPF, are broadly as follows:

i. Agriculture

The key strategic goal for the sector is to continue the increase of employment and income generation in the sector with a view to further enhance its quantitative and qualitative growth and to assist farmers further, especially young ones, not to abandon their places of origin, while ensuring environmental protection in a sustainable manner that will allow for an efficient, productive and coherent balance between competition for agricultural land and natural ecosystems' conservation. To this end, a series of actions that are already on-going, will be continued and further strengthened, such as:

- Efforts to more efficiently address the structural problems the sector faces, through the implementation of related economic measures and instruments.
- Promotion of education and vocational training on economic, technical and environmentally friendly practice issues while orientating farmers to more profitable and sustainable cultivations.
- Promotion of a system of "agricultural consultants" to technically support producers.
- Build capacity of producers to negotiate better market prices for their products and to effectively establish and operate cooperative bodies with distribution of expenses and raising of profits
- Continue products' labelling and their marketing both in domestic and foreign markets.
- Enhance research to adapt practices and products to new trends while benefiting from modern technological advances.
- Effectively adapt land use planning to meet growing demand for land by young farmers while avoiding degradation and multi-fragmentation of land.
- Improve social services of high quality for farmers, especially those in remote areas, young ones and women, for improved social cohesion, repopulation of the country-side and reversing of the negative trends of an aging population occupied in the agricultural sector.
- Continue efforts for long-term fallow of agricultural lands for their transformation to natural habitats aiming at increasing biodiversity and soil retention.
- Intensify efforts to adapt the sector to the impacts of climate change, in terms of water scarcity and resilience of cultivations.

- Intensify measure to protect water resources from agricultural activities, both in terms of overexploitation and thus need for conservation especially of groundwater as well as in terms of decreasing agricultural run-offs and nitrate pollution.
- Improve quality and safety of vegetable products by minimising fertilisers' traces.
- Coupling of subsidies to the impacts the subsidised activities have on environment so that only sustainable activities are supported.
- Continuing promotion of biological agriculture by various means, such as financial incentives to farmers or regular elaboration of feasibility studies for the introduction of new organic cultivations or biological stock-breeding.
- Simplification of the certification, packaging, transport, distribution and trading chain of organic products so as to increase their market share, producers' income, visibility and popularity.
- Continue efforts to protect and preserve traditional agricultural practices, local varieties and species of plants and stock as well as plant and animal genetic sources, aiming to positively contribute to maintaining the Greek agricultural biodiversity.
- Protection and enhancement of natural and cultural landscapes created by traditional agricultural activity (dry stone walls, terraces, hedgerows, traditional olive groves, vineyards) that constitute an important part of the cultural identity of the country and a habitat for its wild flora and fauna.

ii. Forestry

- Reverse of forest loss and protection of forest biodiversity while increase surface area of sustainably managed forests and the percentage of wood products resulting from integrated forest management practices. Such practices should be well defined with criteria and standards, monitored and certified and should be applied widely with priority to NATURA 2000 forest sites, as a part of a national thematic strategy on forests to be soon finalised. To this end, training and recruitment of specialised staff is further intensified. Moreover, particular emphasis is given to the strict protection of peri-urabn or degraded forests and their rehabilitation through natural reforestation and afforestation with local plant species.
- Improve the competitiveness and added value of forestry outputs while enhancing further the economic, social and environmental functions and services of forests such as the enhancement of livelihoods of populations depended on forests.
- Increase information and awareness of society on issues and targets pertaining to the protection and sustainable management of forests, such as the tremendous adverse effects that forest fires have on the overall forest ecosystem. To this end, the inventorying of the existing levels of forest biomass and of its fluctuations in time is promoted together with the final compilation of the national Forest Cadastre aiming at protecting various types of forest land from pressures such as overgrazing, illegal logging, land-use change, unauthorised building etc.

iii. Fisheries

- Enhance fish-stock management and avoid overexploitation so as to achieve a maximum sustainable output by 2015.
- Protect the aquatic environment and sustainable management of coastal formations, e.g. lagoons that are important to aquaculture.
- Reinforce support mechanisms for the implementation of an even more sustainable fisheries policy and the creation of more and highly competitive viable businesses for processing and trading of fish products as well as by increasing distribution points and minimising time requirements of the market supply chain so that marketed products are fresh and of high quality. In parallel, improve aesthetic conditions in fish-ports and public fish markets.
- Adopt an ecosystem approach for the management of fish-stock, by rehabilitation of fish reserves and establishment of areas of controlled fishing, so as to conserve the structure and functions of these ecosystems as well as to support conservation and further growth of marine flora and fauna. Reorient fishing fleet's activities to more sustainable ones that respect fragile ecosystems and habitats (e.g. spawn, alevin areas) while increasing the sector's competitiveness.
- Promote integrated land-use planning for the site allocation of aquacultures, designate areas of Organised Aquaculture Development to increase efficiency of aquaculture activities and to better integrate them in coastal zone management, support traditional methods of aquaculture and of biological aquaculture and introduce innovative schemes for products certification and labeling.
- Promote marketing of additional aqueous products apart from fish such as sea-weed etc while maximising benefits from technological advancements for modernizing fish breeding.
- Further intensify inspections to control and abate illegal fishing (i.e. methods, catches, period, areas) and aquaculture activities.

Finally, is should be highlighted that YPEHODE is at the final stages of compiling, for the first time, the draft of a comprehensive integrated "National Strategy for Biodiversity" along the lines of the UN Convention of Biological Diversity (UNCBD). The Strategy's main objective is the halting of biodiversity loss in Greece with an implementation period of 15 years, 2009-2023. The Strategy, once finalised through a public consultation process and officially adopted by the Government, will encompass 23 policy targets categorised in 4 broad strategic objectives: protection of genetic resources, species and habitats; integration of biodiversity protection objectives into climate change adaptation policies, into physical planning, into urban planning and into tourism policies; cross-sectoral objectives like research, information, awareness raising, public participation, funding, governance strengthening etc; prevention of impacts from alien invasive species sprawling and GMOs. Implementation oversight and monitoring of the Strategy will be undertaken by a new special Inter-Ministerial Committee of 10 co-competent Ministries (YPEHODE, MRDF, Merchantile Marine and Aegean Islands, Foreign Affairs, Interior, National Economy and Finance, Education, Culture, Tourism).

■ Information, Capacity-Building, Education, Training and Awareness-Raising

In Greece, the National Organisation of Agricultural Vocational Education, Training and Employment, i.e. "DIMITRA" (http://www.ogeeka-dimitra.org.gr/) is responsible for organising and carrying out secondary education programmes in the field of agriculture as well as for vocational training of those occupied in the sector, aiming at increasing knowledge and capacities of farmers to fulfil their demanding and challenging occupation in a manner that is environmentally friendly, while economically profitable and socially viable, thus contributing to the sustainable development of the Greek rural land and sector's economic regeneration. DIMITRA fulfils its mission through operation of 4 Professional Schools for secondary education as well as 71 Centres for Training and Information throughout the country. These Schools and Centres provide an occupational alternative to populations living in rural remote or disadvantaged areas to either fight unemployment or raise their income; they conduct studies and promote research and life long knowledge updating to new trends, methods and products in the field of agriculture (e.g. biological farming, PDO, PGI, agro-tourism, etc); they also provide qualifications' certification through the "Green Certificate". Since 2004, public financing (EU and national funds) of DIMITRAS' activities increased from 50% to 75% that resulted in an upgrading in quantity and quality of all implemented programmes; trained farmers are thus alleviated from participation fees and are instead granted financial support for their attendance at EURO 3.23/hour. DIMITRA in cooperation with AGROCERT is carrying out specialised training on biological agriculture and the certification processes of these products. Secondary education and training is increasingly targeting women of all ages aiming at their empowerment, retention of their active social involvement in participatory and productive processes and creation of additional income by means of capacity raising for forming of women's cooperatives to effectively trade local traditional products.

MRDF (http://www.minagric.gr) itself is carrying out massive information, capacity building and awareness raising activities of farmers and of the general public. In particular, the Codes of Good Agricultural Practice (CoGAP) for the implementation of agri-environmental measures as well as the CoGAP for the protection of water resources from nitrate pollution of agricultural origin, the implementation of which is supervised by MRDF, are a significant step towards this direction. The CoGAPs (see also under Chapter "Strategies, Plans, Programmes and Projects") address all farmers, growers and land managers, offer practical interpretation of legislation and provide good advice on best practices, i.e. "good agricultural practice" that minimises the risk of causing pollution while protecting natural resources and allowing economic agriculture to continue (e.g. they include specific requirments for cultivating, plowing etc of lands of over 10% slop). They intend to inform all persons occupied in farming and stock-breeding who handle, store, use, spread or dispose of any substances that could pollute water, soil or air about their responsibilities and about the causes and results of pollution to the natural environment of agricultural origin. In this respect, the CoGAPs provide an important point of reference, based around the main operations that farmers, growers and land managers might undertake, from the activities carried out in the field or in management plans to waste management. Their implementation is inspected, enforced and obligatory for all farmers conducting activities in vulnerable for nitrate pollution zones or for those implementing subsidised agro-environmental Measures.

With an aim to successfully implement the new national irrigation policy and promote a new "irrigation culture", both Ministries of RDF and YPEHODE are intensifying activities to raise greater public awareness and understanding, particularly among farmers, of the economic, social and environmental aspects of water management.

Capacity building efforts of MRDF also focus on increasing farmers' abilities to successfully negotiate their products' prices, since, currently, the possibility for the Greek producer to unilaterally negotiate the price of his production is limited; notwithstanding the 6,350 Agricultural Associations that exist, producers consent to a series of "imposed conditions" of a chain of distribution and trade of their products, without any prominent gain for the consumer. In order to reserve these trends, Agricultural Associations now focus much more on educating and training their employers in order to be able to negotiate successfully, in domestic and subsequently in foreign markets, the conditions of products' distributions, with direct benefits also for the consumers. Moreover, farmers and growers are supported, through the OPs, to participate in "life-long learning" programmes that assist them to adapt their technical capacities to the production of products presenting a high market demand and high additional value (e.g. foodstuff) as well as organise the provision of technical consultation and support mechanisms.

Regarding fisheries, thanks to the continuous efforts of MRDF, Greek fishermen are becoming increasingly aware that fisheries are highly dependent on healthy ecosystems. To this end, several associations have favoured the designation of fisheries-restricted reserves as a way to restore natural habitats and increase abundance and diversity of fishstock. The Hellenic Society for the Study and Protection of the Monk Seal promoted, in 2005-2009, a project (co-funded under the EU LIFE-Nature programme) to draft and implement an action plan to mitigate the seal-fisheries conflict, with the active participation of fishermen, whose fishing practices might cause serious threats to the seal but who in parallel bear income losses due to damage of their gear by seals. The project also aims at evaluating and revising the National Conservation Strategy for the Mediterranean Monk Seal. Similar programmes of cooperation with fishermen have been undertaken by the Sea Turtle Protection Society of Greece (ARCHELON) in several parts of the country

A wide series of national entities conduct advanced research and pilot applications in the field of agriculture (e.g. explore the feasibility of applying new methods of cultivations, new technologies and new products, explore interlinkages and synergies between climate change and agricultural practices, explore and develop innovative and profitable methods of managing agricultural waste and residues etc) including the National Agricultural University of Athens (AUA) (http://www.aua.gr/), NAGREF (http://www.nagref.gr/), the Benaki Phytopathological Institute (BPI) (http://www.bpi.gr/), the Centre for Renewable Energy Sources (CRES) (http://www.cres.gr/), the National Centre of Scientific Research DIMOKRITOS (http://www.demokritos.gr/) etc.

Particular emphasis should be given to the activities of the Mediterranean Agronomic Institute of Chania (http://www.ciheam.org/mai-chania. 8 39296 .php) that has been pursuing an active policy of cooperation for many years. Education and training in collaboration with various institutions in other CIHEAM (Centre of Advance Mediterranean Agronomic Studies) member countries, multidisciplinary orientation and scientific excellence (including a Master of Science degree), networked research, E-learning and joint publication of scientific work are some of its innovative and highly successful trademark activities.

AGROCERT's (http://www.agrocert.gr/) activities, unilaterally or jointly with DIMITRA, also strongly focus on information and awareness raising of farmer and growers on new trends in the sector and in particular on the various certification labels used so as to further widespread them, raise their visibility and enhance their marketing options. Through its activities, it also targets general public so as to make, inter alia, the labels of organic products, PDO and PGI more widely known and recognised, inform on the various benefits for choosing these type of products by the consumers for both consumers and producers and generally make consumers more aware, conscious of their choices and more active participants to delivering the strategic targets of national agriculture and rural development policies. In this context, the various bodies that carry out certification procedures for organic products also have their share of responsibility and benefits within the information and awareness raising efforts of both producers and consumers; these include DIO (http://www.dionet.gr/), Fysiologiki E.P.E., BIO HELLAS S.A. (http://www.bio-hellas.gr/), Q Ways S.A. (http://www.qways.gr/), A Cert (http://www.a-cert.org), IRIS A. CHATZIDAKI & Co (http://www.irisbio.gr/), GREEN CONTROL (http://www.greencontrol.gr), GEOTECHNICAL LABORATORY (http://www.bio-geolab.gr), LACON (http://www.lacon-institut.com), GMCERT (http://www.gmcert.gr), FILIKI CERT (http://www.filikicert.gr).

In terms of information, NSSG (http://www.statistics.gr/) conducts an enormous work of collecting, processing and presenting, through the publication of its "Annual Agricultural Statistic Survey" a large number of data regarding, inter alia, surface area of cultivated lands per various categories; farming

and stock breeding activities per type, output, etc; employment in the sector, age ranges of people occupied in the sector, domestic and external trade activities and related income etc.

Selected qualitative indicators on Agriculture, Animal breeding and Fisheries were also presented and analysed by NCESD's (http://www.ekpaa.gr/), supervised by YPEHODE, "Report on Sustainable Development Indicators of Greece" (2004); a similar more extended and comprehensive report is currently being finalised. NCESD is also conducting a wide range of information and awareness raising activities on related issues by organising Roundtables, consultation events, publications and distribution of printed material etc; a recent very successful campaign focused on the production of biofuels, encompassing issues pertaining to their sustainable production, integrated assessments and criteria for their characterisation including ethical/social aspects, inter-linkages between climate change adaptation and mitigation to agriculture etc.

■ Financing

A key funding source for the agricultural sector and the sustainable development of the country side in Greece has been provided, since 1985, through the various CSFs. In 2000-2006, MRDF has been responsible for the management of 4 Operational Programmes:
1. The Operational Programme for the "Agricultural Development and Reform of the Country-side" (OPADRC);
2. The "Agricultural Development Plan Document" (ADPD);
3. The Operational Programme for "Fisheries" (OPF) as well as
4. The Operational Programme of the Community Initiative "LEADER+" (LEADER+).

In more detail and with regard to OPADRC, it consists of 7 priority axes. The total budget for the period 2000-2006 is around EURO 3.6 billion, out of which the public expenditure (i.e. EU funding and National funding from Greece's own resources) amounted to EURO 2,136.2 million while the rest corresponds to private participation. Under the 7 priority axes of OPADRC, 34 measures have been identified under which several concrete projects are implemented. Assistance to 880 small farm investment plans, the public cost amounting to EURO 130 million, and 478 small public works projects, the public cost amounting to EURO 115 million, as part of the Integrated Rural Development Programmes.

Progress until June 2007 indicated that 721 projects have been approved, their total public cost amounting to 82.6% of the overall public cost of the programme. Total budget contracted (legal commitments) corresponds to 49.7% of the overall public cost of the programme, while expenditure to date on the whole programme amounts to 27.5% of the overall public cost of the OP.

Actions undertaken and financed by the same above mentioned date, under the OPADRC, included:
- Support to more than 44,000 beneficiaries;
- Funding for 12,554 investments in agricultural holdings, the public cost of which amounting to EURO 345 million;
- Single premium paid to 22,800 young farmers for first-time setting up on an agricultural holding, the public cost amounting to EURO 225 million;
- 850 agricultural product processing and trading firms assisted, the public cost amounting to EURO 400 million;
- Construction of 22 major land reclamation schemes with a total public cost of EURO 265 million;
- Assistance to 880 small farm investment plans, the public cost amounting to EURO 130 million, and 478 small public works projects, the public cost amounting to EURO 115 million, with additional 192 projects already commenced, as part of the Integrated Rural Development Programmes for the improvement of infrastructure in 40 rural areas;
- Implementation of integrated activities in mountainous and generally disadvantaged areas with an overall public expenditure amounting to approximately EURO 420 million, at 47 areas, aiming at the realisation of small public works projects, activities for supporting the human context and capacities as well as for supporting private investments;
- More that 6,500 small and major investment plans for processing and trading wood products were supported.

With regard to ADPD, its total public expenditure for the period 2000-2006 amounts to EURO 2.69 billion, distributed to the programme's 4 objectives; in this context, funds spent for the implementation of Agro-environmental Measures reached EURO 122 million for the same period.

With regard to the OPF, its total budget for the period 2000-2006 is EURO 483.1 million, out of which the public expenditure (i.e. EU funding by EAGGF-G and national funding from Greece's own resources from the National Public Investment Programme of MRDF) amounted to EURO 343.51 million while the rest corresponds to private participation. Progress until June 2007 indicated that 187 projects were approved, their total public cost amounting to 77.2% of the overall public cost of the programme. Total budget contracted (legal commitments) corresponded to 84.4% of the overall public cost of the programme, while expenditure on the whole programme amounts to 57.7% of the overall cost of the OP. Until that date, OFP benefited around 4,590 beneficiaries; the dismantling of 2,577 old fishing boats (of public expenditure of over EURO 140.77 million) and the building of 306 new ones (of public expenditure of around EURO 9.54 million) was supported while 702 boats (of public expenditure of over EURO 14.28 million) were modernised; 195 aquaculture establishment and 103 processing and trading of fish products' plans were funded while 650 professional fishermen were included in the socio-economic measures of the programme. Moreover the refurbishment of public infrastructure in 63 fishing ports and reserves has been promoted and funded; rehabilitation works in 3 lagoons were carried out of public expenditure of EURO 1.23 million; 8 research projects were conducted of public expenditure or EURO 1.17 million; projects for the creation of 3 artificial reefs and one for monitoring of an existing one were funded with EURO 3.3 million.

With regard to LEADER+, by August 2007, EURO 158.17 million were already disbursed reaching a 61.8% of programme's overall budget.

For the period 2007-2013, for the implementation of the NSPAD, EURO 5.078 billion have been overall committed; from these, around EURO 870 million is earmarked already for the implementation of agro-environmental activities with priority to NATURA 2000 sites, such as conservation of biodiversity and soil quality, development of agricultural sustainable practices, protection of traditional rural landscapes and rational management of water. Similarly for the NSPF 2007-2013, its public expenditure part will amount to EURO 274.11 million, for the same period.

Apart from the OPs supervised by MRDF, under the Operational "Environment" Programme (OEP) 2000-2006 of YPEHODE, there are several budget lines broadly linked to the sustainable development of rural areas as well as promotion of sustainable agriculture and fisheries while safeguarding ecosystems' integrity in land and in water. These include, inter alia, Measure 3.2 for landscape protection and rehabilitation (of a total budget of around EURO 10 million); Measure 6.2 for the development of basic infrastructure works for the sustainable management of water resources (of a total budget of EUR 166 million); and Measures 8.1 and 8.2 for the protection of special protected areas and biotopes (of a total budget of around EURO 165 million). During the 4th Programming Period of Financial Perspectives 2007-2013, the OPESD, i.e. the new Operational Programme on Environment and Sustainable Development of YPEHODE (of a total budget for public expenditure covering both EU and national funds of EURO 2.8 billion) that will succeed OEP, will similarly continue the funding of several activities like the ones above mentioned broadly related to the sustainable development of agriculture and fisheries also by giving priority to new fields, such as assisting sectors like agriculture to adapt to climate change impacts and to the new geophysical conditions e.g. of water scarcity; strengthening mitigation of climate change through forestry and concerted land-use planning; promoting innovative RES from biomass etc.

Finally, it should be noted that under the National Private Investments' Law (Law 3299/2004 on "Incentives for Private Investments and Economic Development and Regional Convergence) funding of up to 60% of total investment cost is provided by the state as subsidies for private investments in all economic sectors (including primary sector) for supporting sustainable activities in line with the principles of environmental protection, such as production of biofuels or solid fuels from biomass.

■ Cooperation

Greece, as an MS of the EU, the FAO, the WTO and other related regional and international Organisations and Agencies is bounded by and closely follows all related international Treaties, Agreements and Negotiations.

For instance, in the context of Greece's international commitments to FAO and the Rome Treaty regarding Plantation Resources related to Food and Agriculture, MRDF is implementing various measures and activities for conserving the various wild indigenous plant species existing in Greece. Greece has also been an active participant in fisheries-related activities of the FAO and has ratified a variety of multilateral conventions and agreements that address fisheries management issues.

Moreover, Greece follows closely, as an EU Member, the negotiations of the "Doha Round" in the context of the WTO, giving particular emphasis on the needs and demands of developing countries, aiming at poverty eradication, by opening up EU markets to developing countries' agricultural products and by gradually abating subsidisation of exports of EU products in such a way that international market balance is distorted and developing countries are financially and socially excluded. Moreover, Greece is committed to abide to EU decisions, within the same context and in the context of the Johannesburg Plan of Implementation of the World Summit on Sustainable Development (WSSD) (2002), for phasing out gradually agricultural subsidies with adverse environmental effects.

Greece is strongly committed to the UNCBD Cartagena Protocol's objective of ensuring the safe handling of GMOs to protect biodiversity and human health.

Greece is regularly contributing to all the replenishments of Global Environment Facility (GEF), the international independent financial mechanism which provides developing countries with grants for programs that aim at the improvement of environment globally and promote sustainability of local communities through activities related to biodiversity, climate change, international water resources, land degradation, ozone depletion and persistent organic pollutants. For its current fourth replenishment (2007-2010) is contributing EURO 5.73 million in four equal annual instalments.

Furthermore, Greece as a country that is mainly relying on its primary sector, is regularly organising (e.g. the Thessaloniki annual international exhibition) and participating (e.g. the Berlin annual "Fruitlogistica" exhibition) to various international Expos concerning the promotion of agricultural products, foodstuff, agricultural technologies etc.

On the regional level, Greece is a member of and actively participates to the activities of CIHEAM and is hosting one of its four Mediterranean Agronomic Institutes in the city of Chania, island of Crete.

On a bilateral level, Greece's bilateral development assistance activities benefiting developing partner countries, in the fields of agriculture and rural development, amounted in 2007 to approximately EURO 2.9 million. Indicatively, bilateral cooperation activities with Egypt include a twining of the Mediterranean Agronomic Institutes of Chania with the Agronomic Institutes of Egypt through a Bilateral Memorandum of Understanding (MoU) between the two countries signed at Ministries of Foreign Affairs level (2006), aiming at experience, expertise and information exchange on agronomic and environmental issues common to the two countries due to their similar climatic conditions. In the context of this MoU, an activity entitled "GI@MED" of a EURO 555,300 budget is carried out aiming at the electronic networking of all agronomic schools throughout Southeast Mediterranean, based on geo-information systems, for the promotion of joint strategies for the management of agricultural areas, water resources and environmental issues in general.

Another example is the bilateral cooperation of Greece with Ethiopia; the two countries have signed an MoU at Ministries of Agriculture level, for providing to Ethiopia expertise and know-how on issues pertaining to the cultivation of cotton, through the Greek NAGREF.

Cooperation with other African countries also includes the creation of a farm in Zambia encompassing an agronomic school for education and training as well as two units of plant cultivation and animal breeding, that will also be conducted by NAGREF, through a multi-year project that has already disbursed, in 2008, EURO 30,000.

Other Bilateral Cooperation Agreements that Greece has signed include, indicatively, those with South Korea, with Japan and with Russia, at Ministries of Foreign Affairs level, for the promotion of technical cooperation between the countries on issues pertaining to agriculture and husbandry and for supporting the commercial dissemination of the agricultural products and foodstuff of one country in the other, respectively.

Greece is currently further intensifying its efforts focusing on financing adaptation to climate change programmes of all sectors, inter alia, agriculture and water resources, in Least Developed Countries and in regions that, due to their geographical locations, are under severe danger from climate change (Africa and Small Island States). In order to ensure best possible utilisation of funds and distribution to programmes according to the most significant needs of the threatened regions, the Greek plan will be implemented in coordination with regional organisations of the areas under consideration and especially with the African Union (EURO 3 million in 2007, EURO 1 in 2008), the CARICOM (EURO 1 million in 2007 and EURO 1 million in 2008) and AOSIS (EURO 1 million in 2007).