

GREECE

Πρόγραμμα Αγροτικής Ανάπτυξης της Ελλάδας «ΑΛΕΞΑΝΔΡΟΣ ΜΠΑΛΤΑΤΖΗΣ» 2007–2013

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Other useful links:

Rural Development Programme (RDP):

<http://www.agrotikianaptixi.gr/index.php?obj=0f6d11a5f98dbcc4>

National Strategy Plan (NSP):

<http://www.espa.gr/el/Pages/default.aspx>

Greek National Rural Network (NRN):

<http://www.agrotikianaptixi.gr>

Climate Change and Renewable Energy issues in 2007-2013 RDP

Climate change (CC) is fundamental to the context for agriculture and policy making. EU agriculture must play an important role in mitigating this phenomenon by curbing greenhouse gas (GHG) emissions; at the same time it needs to adapt to the expected climatic adversities which will have serious consequences on production processes. Rural development offers a range of possibilities to support farming practices and investments that can contribute to climate change *mitigation* efforts (including the increase of the use of *Renewable Energy* (RE) resources) and additionally effect *adaptation* benefits. CC challenges have been recognized in the baseline analysis of the 2007-2013 EU Rural Development Programmes (RDP) and addressed in their strategies. Following the Health Check (HC) of the Common Agricultural Policy (CAP), the 'new challenges' of the RD policy include 'climate change' and 'renewable energy' for which an additional budget of approximately €1 billion¹ have been made available for Member States (MS) to spend on these issues². As a consequence, the operations related to these newly introduced Community priorities have been further strengthened in the RDPs.

¹ 19.8% of the total additional funds released.

² The budget allocated to the 'new challenges' includes the funds released by the HC of the CAP (including voluntary modulation and transfers according to Art. 136 of regulation (EC) No. 73/2009) and the European Economic Recovery Package (EERP).

Introduction - overview of Member State RDP

All three dimensions of CC (mitigation, adaptation and the potential for renewable energies) are addressed by the baseline analysis provided in the Greek RDP. The relative importance of each of these three aspects has been considered and correspondingly addressed in the RDP strategy and within the implemented measures.

One of the main challenges clearly identified by the RDP following the adoption of the HC relates to adaptation to CC in order to address the adverse effects of forest fires, a recurrent phenomenon in Greek rural areas during summer months. Another key challenge concerns water management, especially in relation to water storage, given the scarcity of this resource in rural areas and its importance for irrigation purposes. These challenges are addressed specifically under axes 1 and 2 of the RDP.

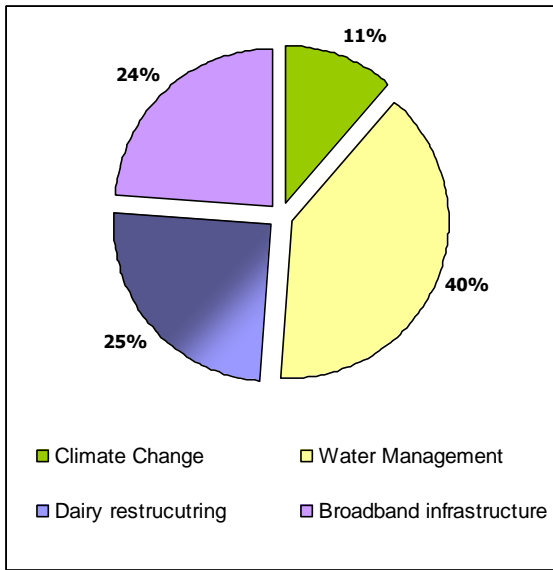
Rural areas form a significant part of the Greek territory: 97.1% of the state is classified as rural areas according to the OECD definition (73.9% of those areas are predominantly rural). The importance of mountain areas that cover around two thirds of the country and the existence of one of the longest coastlines in Europe and of about 3,000 islands make Greece particularly exposed to CC threats, especially, rising sea levels, higher levels of emissions, natural disasters such as forest fires and the resulting soil erosion (leading in particular to desertification). The relative importance of rural areas in Greece is confirmed by the fact that, according to 2005 RDP baseline data, 64.4% of its population lives in rural areas, which justifies why sustainable rural development is a major issue given the CC challenges.

The baseline analysis stresses the dichotomy between very dry areas with water shortages/scarcity (south and east Greece and island areas) and areas with sufficient water resources (north and west of Greece). Irrigation takes place with inefficient old-fashioned systems (irrigation by gravity which implies higher water losses). In islands, where water and rainfall is already scarce, almost 20% of surfaces are irrigated. More efficient water management is targeted by the RDP strategy under the development of *'infrastructure for the adaptation of agriculture and forestry'* in axis 1. The revised RDP strategy following the CAP HC recognises the need for further rationalisation of available water resources.

According to the baseline analysis and in line with the Kyoto Protocol, Greece has committed to cutting emissions by 25% during the 2008-2012 period, in comparison with the base year 1990. Agricultural activity in Greece is responsible for 8.7% of GHG emissions. In particular, nitrous oxide (NO₂) is released to the atmosphere mainly due to the microbial transformation of nitrogen fertilisers in soils and manure management and account for around 70% of total emissions from agriculture. Methane emissions (CH₄) stem from digestion processes of ruminant animals (enteric fermentation) and from manure handling and account for around 30% of total emissions from agriculture. In order to address this issue, the RDP strategy gives emphasis on *'organic farming and livestock production'* under axis 2. The RDP also focuses on the forestry sector through *'restoring forestry potential and introducing preventive actions'* under axis 2, in particular, reforestation of areas afflicted by forest fires. There is renewed emphasis on reforestation and the adoption of preventive measures against natural disasters in the revised RDP. The effects of these measures will be noted in the reduction of CO₂ emissions and in the reduced surface threatened by desertification due to forest fires.

Renewable energies are covered in the baseline analysis with particular reference to energy crops, which are considered a key factor for the reduction of GHG emissions. EU and national regulations already support the production of bio-fuels, while the reactivation of declining energy crops is suggested, provided water efficiency criteria are applied. The RDP strategy targets the production of renewable energies for farm use under the *'modernisation of agricultural holdings'* measure in axis 1 and the *'support to business creation'* in axis 3.

Allocation of the additional resources per type of priority



The overall budget of the Greek RDP in terms of total public expenditure amounts to €4,662,066,488, of which €3,906,228,424 is the EAFRD contribution. This includes an additional allocation of €176,124,000 (EAFRD contribution) as a result of the new challenges raised by the HC and the adoption of the EERP.

Following these changes, additional financial support to the RDP objectives relate to water management (additional €70 million, representing 40%, of the new EAFRD funds allocated to the programme) and CC (additional €20 million, 11%). This new financial support is additional to the initial financial allocation of the RDP which was already addressing water management and CC.

Targeting investments to further rationalisation of water resources available as well as further afforestation and preventive measures for the protection of forests are the main CC related actions supported under the enhanced RDP strategy. These are aimed at addressing the effects of adverse weather conditions observed all over the country during 2006 and 2007, such as heat waves and strong winds causing droughts and forest fires, which increased the CO₂ emissions.

Full details of the overall RDP budget allocation can be found in the RDP fiche for Greece that is available at:

http://enrd.ec.europa.eu/rural-development-policy/country-information/rural-development-policy-fiches/en/rural-development-policy-fiches_home_en.cfm

Mitigation

Activities aimed at reducing agricultural GHG emissions

The Greek RDP provides comprehensive support for a range of activities which could contribute to reducing agricultural emissions, in particular through the promotion of organic farming practices and the establishment of agro-forestry systems on agricultural land.

The main measure through which the RDP seeks to support efforts to reduce agricultural GHG is **measure 214** - *agri-environment payments* although other measures also contribute. A considerable number of operations are referenced under this measure which could help to reduce emissions, including: organic farming and livestock production which comprise payments for reduced fertiliser use and improved management; extensification of livestock (e.g., reduction stocking density, increase grazing); protection of water resources; protection of nitrate sensitive areas; permanent set-aside (long-term fallow) of agricultural land; integrated production of products not addressed to human food consumption (such as cotton); and protection of the Sea Park of the island of Zakunthos including the promotion of organic production, promotion of fallow and crop rotation practices in this island.

Under axis 2, **measure 221** – *first afforestation of agricultural land* supports the establishment of forests and their maintenance also directly contributes to the uptake of CO₂

emissions. The measure reinforces anti-erosion support and contributes to the maintenance of biodiversity and the fight against CC.

Further support for activities which could help to mitigate CC are possible under **measure 111** – *vocational training and information actions*. Under this measure explicit reference is made to training on environmentally friendly production methods and the implementation of agricultural practices that promote sustainable rural development, with particular emphasis on organic farming and livestock production.

Adaptation

Prevention of, and coping with, potential impacts of climate change on agriculture

In terms of preventing and coping with the potential impacts of CC a number of actions are supported, specifically: investments in water efficiency and management and preventive actions against natural disasters. The rational use of water resources and the improvement of land management practices are the main elements in the revised RDP strategy for addressing the CC adaptation priority. They benefited from additional financial resources released by the HC and targeted specifically at water storage capacity, the restoration of forestry potential and the introduction of preventive measures.

One of the main measures through which the RDP addresses adaptation to CC is **measure 125** - *infrastructure related to the development and adaptation of agriculture and forestry*. This measure includes an action on water efficiency and management which supports operations for the improvement of irrigation technology through the substitution of irrigation by gravity (which entails higher water losses) with more efficient irrigation techniques. Operations include: studies for water management, for the construction of water storage and distribution (dams, lakes, etc.), for the monitoring and control of dams and other water storage infrastructure; creation of water retention infrastructure (dams, reversal of flows, etc.); infrastructure works on the irrigation network, creation of pumping stations, accessibility infrastructure, stream control works, afforestation works; studies and works for the enrichment of underground resources; water extraction works and water quality and quantity control works. This measure is reinforced following the CAP Health Check, in particular, sub-measure 125A1 (water storage) is allocated additional funding for water storage works, in order to rationalise the water use as well as its storage capacity.

Another key measure is found under axis 2, **measure 226** -*restoring forestry potential and introducing prevention actions*- which has been specifically addressed in the revised RDP following the CAP Health Check. Additional funding has been allocated to new operations in relation to preventive actions against forest fires and natural disasters related to CC and to existing operations for reforestation and mountain anti flood actions for burned forest areas. These new funds represent a response to a particularly acute problem in Greek rural areas, namely, forest fires in summer months, often followed by floods in winter months. In addition to adaptation, reforestation actions also contribute to CC mitigation by increasing the retention of CO₂ and reducing CO₂ emissions.

Other measures under axes 1 and 2 complement the above actions for adaptation to CC.

Under axis 1, for its nature, **measure 126** - *restoring agricultural production potential damaged by natural disasters* plays a role in addressing 'adaptation' needs as a direct response to CC impacts, with particular reference to forest fires, mainly addressed by measure 226. The measure offers financial support for the restoring plant, animal and physical capital of farms that has been damaged by natural disasters (floods, earthquakes, forest fires). To complement restoration actions, **measure 121** – *modernisation of agricultural holdings*- covers preventive actions against natural disasters such as investments to protect natural capital from drought or fire.

Again under axis 1, **sub-measure 123A** – *adding value to agricultural products*- supports the improvement of cattle rearing conditions and welfare. Furthermore, **measure 111** - *vocational training and information actions*- include topics related to the rational use of water resources.

Under axis 2, **measure 214** –*agri-environment payments*- supports a range of operations such as: protection of wetland areas, by reducing pressures from agricultural activities through the reduction in water consumption by at least 25%, creation of ecological spaces that represent 5% of eligible areas (actions like fallow and crop rotation apply); maintenance of extensive crops that are under risk of genetic erosion; maintenance of threatened autochthonous livestock animal breeds, including the maintenance of traditional extensive feeding systems; maintenance of genetic resources in livestock production applying to certain bovine, ovine, goat and equestrian breeds; and promotion of agricultural practices for the protection of wildlife. Such actions help reduce the risk of having genetic material destroyed by diseases, which is essential for coping with adverse conditions potentially caused by CC.

Still under axis 2, **measure 216** addresses adaptation through the restoration of hedgerows and terraces that have been destroyed / damaged by forest fires or floods. Actions include planting, preservation and irrigation of trees and bushes.

Main RDP measures which contribute to address CC mitigation/adaptation issues

Axis/ Measure	Description	Type of operation	Potential effects
Axis 1			
Measure 125	Infrastructure related to the development and adaptation of agriculture and forestry	Water storage (water storage works, creation / upgrading of primary, secondary and tertiary irrigation/water drainage/road networks	Improvement of water management (use and storage capacity
Measure 126	Restoring agricultural production potential damaged by natural disasters and introducing appropriate prevention actions	Restoring damages to plant and animal capital as well as to physical capital (farm buildings, greenhouses, agricultural machinery and equipment, fences, walls, irrigation and water transport pipes, irrigation networks etc.)	Restoration of agricultural production potential
Measure 111	Vocational training and information actions	Includes training topics related to organic farming, rational water use and sustainable farming and livestock breeding practices	Improved awareness of farmers on aspects that contribute to climate mitigation and adaptation
Measure 123	Adding value to agricultural products	Modernisation of cattle breeding units	Improved animal welfare
Axis 2			
Measure 226	Restoring forestry potential and introducing preventive actions	Action 1 - Preventive actions against forest fires and natural disasters related to CC. Action 3 - Reforestation – mountain anti flood actions for burned forest areas	Carbon retention from forests and reduction of (CO ₂) emissions, mitigation of CC impact to forests

Measure 214	Agri-environment payments	Action 1.1 - Organic farming Action 1.2 – Organic livestock production Action 1.3 -- Extensification of livestock Action 2.1 - Protection of nitrate sensitive areas Action 2.2 – protection of wetland areas Action 2.3 – Integrated production system for cotton Action 3.1 – Maintenance of threatened autochthonous livestock animal breeds Action 3.2 – Maintenance of extensive crops that threat of genetic erosion Action 3.3 – Promotion of agricultural practices for the protection of wildlife Action 3.4 – Maintenance of livestock genetic resources Action 3.5 - Protection of the Sea Park of the island of Zakunthos Action 3.6 – Long-term fallow of agricultural land	Reduced use of fertilisers and phytosanitary products, improvements in environmental protection and restrictions on pollution caused by agriculture. Reduced GHG emissions. Successful land management of 2,727,600 hectares that contributes to the fight against CC
Measure 221	First afforestation of agricultural land	Extension and improvement of forest resources through the establishment of forests in designated areas	Counteracting CC through the uptake of CO ₂

Note: Measures are presented by axis and by order of importance in terms of their contribution to CC mitigation/adaptation.

Renewable energies

Electricity, heating and transport fuels produced from biomass (such as biofuels, biogas) and other renewable sources (solar, wind, geothermal).

The Greek RDP integrates in particular the aspect of renewable energies from the cultivation of energy crops and the production of renewable energy for farm use.

There are two main measures for supporting renewable energies. Under axis 1, **measure 121** – *modernisation of agricultural holdings* -, aims at the cultivation of energy crops, especially corn. Under axis 3, **measure 312** – *support to business creation and development* - foresees the development of renewable energies for use on the farm. This stems from the need to promote entrepreneurship in a sustainable development context and to instil a culture of rational use of natural resources amongst existing and new entrepreneurs in rural areas.

Those entrepreneurs therefore that introduce renewable energies in the running of their business are given priority in the programme. Operations to this end include the installation of photovoltaic energy, use of biomass for energy purposes and geothermal energy production.

Main implemented RDP measures related to the development of renewable energy sources

Axis/Measure	Description	Type of operation	Potential effects
Axis 1			
Measure 121	Modernisation of agricultural holdings	Support to the cultivation of energy crops.	Increased use of bio-fuels to reduce GHG emissions
Axis 3			
Measure 312	Support to business creation and development	Support to installations of renewable energies from biomass and from other renewable sources (photovoltaic, geothermal) for own farm use	Increased use of renewable energies to reduce GHG emissions.

Note: Measures are presented by axis and by order of importance in terms of their contribution to renewable energies.