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# Current situation and end-user needs analysis

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**TABLE OF ACRONYMS/ABBREVIATIONS**

| | |
|---|---|
| ARI | Agricultural Research Institute |
| BPS | Basic Payment Scheme |
| CAP | Common Agricultural Policy |
| CAPO | Cyprus Agricultural Payments Organization |
| CATS | System the Clearance Tracking System |
| CF | Cohesion Fund |
| CGAP | Codes of Good Agricultural Practice |
| CMES | Common Rural Development Monitoring and Evaluation |
| CMEF | Common Monitoring and Evaluation Framework |
| CwRS | Control with Remote Sensing |
| DG AGRI | Directorate-general for agriculture and rural development |
| EAFRD | European Agricultural Fund for Rural Development |
| EAP | Environmental Action Programmes |
| EC | European Commission |
| EEA | European Environment Agency |
| EFA | Environmental Focus Area |
| EGTC | European Grouping of Territorial Cooperation |
| EIA | Environmental Impact Assessment |
| EIONET | European Environmental Information and Observation Network |
| EIP | European Innovation Partnership |
| EMAS | Eco-Management and Audit Scheme |
| EMFF | European Maritime and Fisheries Fund |
| E-PRTR | European Pollutant Release and Transfer Register |
| ERDF | European Regional Development Fund |
| ESA | European Space Agency |
| ESF | European Social Fund |
| ESI Funds | European Structural and Investment Funds |
| ESS | European Statistical System |
| ETS | Emissions Trading System |

| | |
|---|---|
| EU | European Union |
| EU SDS | European Union Sustainable Development Strategy |
| FAS | Farm Advisory System |
| FBI | Field Bird Indicator |
| GAEC | Good Agricultural and Environmental Condition |
| GAEP | Good Agricultural and Environmental Practices |
| GHG | Greenhouse Gas |
| GIS | Geographic Information System |
| GLRV-1 | Grapevine Leafroll Virus Strain 1 |
| GLRV-3 | Grapevine Leafroll Virus Strain 3 |
| GNSS | Global Navigation Satellite Systems |
| GPS | Global Positioning System |
| HNV | High Natural Value |
| I | Indicator |
| IACS | Integrated Administration and Control System's |
| ICT | Information and Communication Technologies |
| IMPEL | Implementation and Enforcement of Environmental Law |
| IT | Information Technology |
| JRC | Joint Research Centre |
| LAGs | Local Action Groups |
| LDS | Local Development Strategy |
| LIFE | French: L'Instrument Financier pour l'Environnement |
| LPIS | Land Parcel Identification System |
| LSU | Livestock Units |
| MC | Monitoring Committee |
| M1-20 | Measure 1-20 |
| NDVI | Normalized Difference Vegetation Index |
| NER | New Entrants' Reserve |
| OC | Organic Certification |
| OS | Organic Subsidies |
| OTSC | On-the-spot-checks |
| PA | Partnership Agreement |

| | |
|---|---|
| PAYT | Pay-As-You-Throw |
| RAA | Regulatory Administrative Act |
| RBMP | River Basin Management Plans |
| RDC | Rural Development Committee |
| RDP | Rural Development Program |
| RES | Renewable Energy Sources |
| SCI | Sites of Community Importance |
| SEA | Strategic Environmental Assessment |
| SEIAS | Strategic Environmental Impact Assessment Study |
| SMRs | Statutory Management Requirements |
| SPAs | Special Protection Areas |
| TFEU | Treaty on the Functioning of the European Union |
| UAA | Utilised Agricultural Area |
| UNFCCC | United Nations Framework Convention on Climate Change |

# 1 CHAPTER: ANALYSIS OF STRATEGIC AND LEGISLATIVE FRAMEWORK AS TO EUROPEAN STRATEGY 2020 AND EUROPEAN ENVIRONMENTAL DEVELOPMENT POLICY

## 1.1 Introduction

Sustainable development constitutes one of the overarching long-term goals of EU. The EU SDS is a structure for a long-term sustainability vision, where economic growth and social cohesion coexist with environmental protection. The objective of sustainable development has been included by the EU in a wide range of policies. The fight against climate change became a major issue and European Union was committed to promote a low-carbon, resource-efficient economy. However, in various sectors persist unsustainable trends, such as the rapid growth of demand of natural resources, the decline of biodiversity and the incensement of energy consumption in transport.

Needs of environmental protection do not constitute a simple component of other Community policies, but they must be considered during their formulation, in order to promote sustainable development, ie the combination of economic development, environmental protection and social justice.

This chapter will refer to the Europe 2020 strategy program, analyse European environmental policy and in particular rural development legislation. In addition, there will be mentioned programs, systems and organizations that implement, enforce the legislation and supervise their proper implementation. Additionally, Common Agricultural Policy, cross-compliance rules, direct payments and rural development policy will be analysed. Finally, future C.A.P. will be briefly presented.

## 1.2 Strategy “Europe 2020”

Europe 2020 strategy is EU’s development strategy. In a changing world, EU must become a smart, sustainable and inclusive economy. These three mutually reinforcing priorities are expected to help EU and Member States to achieve high levels of employment, productivity and social cohesion.

European Union, trying to put its economy under sustainable development, has developed and implemented the strategic plan "Europe 2020". The plan brought forward the key objectives, the

priorities and the means to implement an economy based on sustainable development. Through this project, EU focuses its interest on the core of economy and society. Beyond economic goals, it sets social and environmental goals in order to contribute to long-term return on investment in knowledge and innovation. In the framework of this project, were set the following three key priorities: smart development - sustainable development - inclusive development.

Europe 2020 strategy is the follow-up to the Lisbon Strategy and the European Union's (EU) development strategy for the 2010-2020 period. This new strategy was adopted by the European Council on 17th of June 2010 in a Europe's effort to overcome the crisis, creating the conditions for a more competitive, more job-rich economy, aiming for growth:

The EU Development Strategy “Europe 2020” proposes three mutually reinforcing priorities as features of targeted development: 1) smart, knowledge-based and innovative; 2) sustainable, more green, more competitive and more resource efficient; and 3) without exclusion, with high employment and enhanced social and territorial cohesion.

By 2050, EU economy is growing respecting resource constraints and planetary boundaries, thus contributing to global economic transformation. Our economy is competitive, inclusive and ensures a high standard of living with much smaller environmental impacts. The management of all resources, from raw materials to energy, water, ambient air, land and soil, takes place in a sustainable way. Climate change milestones have been achieved, while biodiversity and ecosystem services that biodiversity supports, are being protected and significantly assessed and restored.

### 1.3 European Environmental Policy

The environmental policy and the framework of its future actions are defined by the multiannual environmental action plans, which are incorporated into horizontal strategies and play a significant role in international environmental negotiations.

The Treaty on the Functioning of the European Union states that EU is competent to act in all areas of environmental policy (Articles 11 and 191 to 193). According to Article 11 of the TFEU the "Environmental protection requirements must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development".

The TFEU principle of environmental integration states that in order to promote sustainable development:

- Environmental policy is not sufficient in itself to achieve the required environmental protection,
- Reducing environmental pressures is achievable only through integration of environmental protection in other sectors, such as agriculture, fisheries, transport, energy, etc.

European environmental policy rests on the principles of precaution, prevention, rectifying pollution on source, as well as on the principle "the polluter pays". The precautionary principle is a risk management tool that may be invoked when there is scientific uncertainty about a suspected risk to human health or to the environment emanating from a certain action or policy.

The principle of prevention is an important risk management tool. It can be triggered when there is scientific uncertainty of an alleged risk, which by a specific action or policy, could damage human health or environment. For example, if there is a suspicion for a product which may contain ingredients that have serious health consequences, and uncertainty remains even after objective scientific evaluation, then it is possible to stop the distribution of the product or withdraw it from the market. In any case, these measures should be proportionate, non-discriminatory and should be reviewed in case that additionally scientific evidence becomes available.

Environmental Liability Directive led to the implementation of "polluter pays" principle, which aims to prevent and repair potential environmental damage to protected species and natural habitats, water and soil. Operators engaged in certain occupational activities, such as trading hazardous substances or water discharge activities, must take precautionary measures in case of imminent environmental threat. If damage has already been caused, operators must take all necessary measures to repair the damage and cover expenses. The scope of the directive has been extended three times in order to include extractive waste management, geological storage sites operation and safety of offshore oil and gas activities.

An important concept of European policy is the integration of environmental aspects into other EU policy areas. In recent years, environmental policy integration has made significant progress. Significant progress has been made in the field of energy policy, as captured in the parallel measures development about EU Climate and Energy Package or the Roadmap for the transition by

2050 to a competitive low-carbon economy. European Union has integrated the goal of Sustainable Development into a wide range of policies, gained international leadership in tackling climate change and is committed to promote a low-carbon economy based on knowledge and resource efficiency.

European Commission, since 1973, has been adopting multiannual Environmental Action Programmes (EAP), setting out forthcoming legislative proposals and objectives for EU environmental policy, emphasizing the interdependence of three-pillar conception progress (economic, social and environmental) in order to build a dynamic and innovative sustainable economy. Europe's economic growth and future prosperity, among other things, depends on how better conditions for sustainable development and jobs are created and depends on responding appropriately to the opportunities and challenges emerging from globalization, demographic change and global environmental threats.

European Union has a great influence on international negotiations for the environment. Participates in innumerable global and regional environmental agreements covering a wide range of issues (climate change, biodiversity, nature protection, air and water pollution). Especially, its contribution on setting important international agreements adopted in 2015 at United Nations level, such as 2030 Agenda for Sustainable Development, Paris Agreement on Climate Change and Sendai Framework for Disaster Reduction, was of a major importance. The same year, the European Union also took part of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

### 1.4 Common Agriculture Policy

Common Agricultural Policy is a partnership between Europe and its farmers and provides a common policy for all EU countries. In 2013, CAP underwent another major reform. While the primary objective of this reform was to meet the evolving challenges facing the agricultural sector, CAP has also been adapted to contribute to Europe 2020 goals by promoting smart, sustainable and inclusive development.

Thus, they have been set three main objectives for CAP 2014 – 2020, while existing CAP instruments need to be adapted in order to achieve these long-term policy objectives:

- Sustainable food production: contributing to food security by enhancing the competitiveness of EU agriculture and at the same time providing the means to meet the challenges facing the sector related to market disruptions and the food chain operation. It helps farmers improve agricultural productivity, guarantee a steady and affordable food supply and revive rural economy through job promotion in farming, agro-foods industries and associated sectors.
- Sustainable management of natural resources and action on climate change: ensuring the long-term sustainability and potential of EU agriculture by safeguarding the natural resources on which agricultural production depends.
- Balanced territorial development: contributing to the socio-economic development of rural areas, while promoting the right conditions to ensure structural diversity across the EU. It helps fight climate change and protect rural areas and landscapes across the EU.

CAP has three clear environmental goals: combating climate change, safeguard natural resources and reinforce biodiversity. Overall, CAP contributes to those three general objectives, which together feed into Europe 2020 objectives of smart, sustainable and inclusive growth. The performance of CAP shall be measured in relation to the following general objectives:

- Viable food production to contribute to food security by enhancing the competitiveness of EU agriculture while providing the means to address the challenges faced by the sector related to market disruptions and the functioning of the food chain.
- Sustainable management of natural resources and climate action to ensure the long-term sustainability and potential of EU agriculture by safeguarding the natural resources on which agricultural production depends.
- Balanced territorial development to contribute to the socio-economic development of rural areas, while fostering the right conditions for safeguarding structural diversity throughout EU.

CAP represents a large part of EU budget over the years. It concerns 37.7% of the total EU's expenses planned for 2014-2020. It is an amount that is spent in three different ways:

1. Supporting farmers' incomes and assisting them in complying with sustainable farming practices: farmers receive direct aid, provided under the presupposition that they adhere to

strict standards on food safety, environmental protection and animal health and welfare. This aid represents about 70% of the CAP budget. After 2013 reform, 30% of direct payments is linked to European farmers' compliance with sustainable farming practices that are beneficial to soil quality, biodiversity and environment in general, such as crop diversification, conservation and permanent pastures or the maintenance of ecological catering areas on farms.

2. Market support measures: they are applied mainly when adverse conditions tend to destabilize markets. Payments for these measures represent about 5% of CAP budget. Income and market support measures constitute "pillar I" of CAP.

3. Rural Development Programs (RDPs): these measures are based on a thorough analysis of the planning area and on a selection of measures designed to help farmers modernize their farms, become more competitive, protect the environment, contribute to the diversification of agricultural and non-agricultural activities and conduce to the vitality of rural communities. These programs constitute "pillar II" of CAP. They are multi-annual, co-financed by Member States and are equivalent to about 25% of CAP budget.

Important parts of CAP are the environmental rules and the measures that encourage green farming, such as cross – compliance standards, green direct payment and rural development policy.

### 1.4.1 Cross-compliance

Cross-compliance standards encourage farmers to comply with high European Union standards for public, plant and animal health, so that European farming will become more sustainable. Therefore, farmers have to respect some basic rules, in order to receive income support from EU. Accordingly, farmers must comply with SMRs, as well as with GAECs. Otherwise, they will have their EU support reduced and may face other penalties.

The SMR include general food law (EU regulation 178/2002), hormones ban directive (Council Directive 96/22/EC), regulations on identification and registration of pigs, bovine, ovine and caprine animal (EU regulation 1760/2000, Council Directive 2008/71/EC, EU regulation 21/2004), regulation on prevention, control and eradication of transmissible spongiform encephalopathies (TSE) (EU regulation 999/2001), regulation on plant protection products (EU regulation

1107/2009), directives on the protection of calves, pigs and animals kept for farming purposes (Council Directive 2008/119/EC, Council Directive 2008/120/EC, Council Directive 98/58/EC), nitrates directive (Council Directive 91/676/EEC), NATURA 2000 directive on wild birds (Directive 2009/147/EC) and NATURA 2000 directive on natural habitats (Council Directive 92/43/EEC). Additionally to SMR, GAEC are designed to prevent soil erosion, preserve soil organic matter and soil structure, maintain permanent grassland, safeguard biodiversity, ensure the retention of landscape features and protect and manage water.

The scope of cross compliance is to conduce to the growth of sustainable agriculture and improve the compatibility of CAP according to the expectations of society. Cross-compliance is important for defining agri-environmental commitments and for calculating proportionate payments.

Farmers should respect cross-compliance throughout their whole holdings, especially when they receive payments to maintain their income as well as when they receive support for the implementation of measures that contribute to rural development. In case they do not comply with cross-compliance measures, their financial support is cancelled or reduced.

Within cross-compliance, have been established Good Agricultural and Environmental Conditions (GAEC), which concern water resource issues, soil issues, minimum levels of maintenance and maintenance of permanent pasture areas.

### 1.4.2 Green Direct Payment

Greening supports farmers who adopt agricultural practices that contribute to achieving environmental and climate goals. European Union (EU) rewards through Green Direct Payment, the farmers for maintaining permanent grassland, crop diversification and for dedicating 5% of arable land to ecological focus areas, which are beneficial for biodiversity.

Direct payments support farmers' income, provide a basic protection against certain constraints to which agriculture is exposed (e.g. weather or price related pressures) and constitute an almost stable share of farmers' incomes. Direct payments are better focused and the distribution of payments is more fair, because of the new layered payment methods, which meet the special needs of young farmers, smaller farmers and specific regions or sectors facing difficulties. As direct payments are disconnected from production, the production decisions of farmers are based rather

on market signals than on efforts to maximize support payments.

Also, direct payments improve competitiveness, contribute to the provision of environmental public goods, mitigate climate change and adapt to it. Market support measures enable a safety net mainly when there is a crisis or market disruption, maintaining thereby the market stability, and helping to meet consumer expectations.

### 1.4.3 Rural development policy

The Rural Development policy of EU preserve rural areas to respond to a wide range of economic, social and environmental challenges. Rural development policy reinforces market measures and income supports of the CAP through three objectives for the 2014 – 2020 period; enhancing agricultural competitiveness, securing sustainable natural resource and climate action management and achieving a steady territorial development of rural communities and economies, subsuming the creation as well as the maintenance of employment. Rural Development policy is mentioned as the 'second pillar' of the EU's CAP, complementing the first pillar, which concerns farmers' direct payments and measures for the management of agricultural markets.

The broader objectives of Rural Development policy are further formulated through six priorities, thus providing the basis for policy implementation. These six policy priorities are divided into specific areas of intervention (Focus Areas).

Priority 1: Knowledge Transfer and Innovation

Focus Area 1A: Promote innovation, cooperation and foster the growth of knowledge in agricultural areas;

Focus Area 1B: Reinforce ligament between agriculture, food production, forestry, research and innovation;

Focus Area 1C: Promote agricultural and forestry lifelong learning and vocational training.

Priority 2: Farm Viability and Competitiveness

Focus Area 2A: Amelioration of farm's financial performance and facilitation of farm's restructuring and modernisation;

Focus Area 2B: Facilitating the entry of adequately skilled farmers into the agricultural sector and generational renewal.

Priority 3: Food Chain Organisation and Risk Management

Focus Area 3A: Improving competitiveness of primary producers by better integrating them into the agri-food chain;

Focus Area 3B: Supporting farm risk prevention and management.

Priority 4: Restoring, Preserving and Enhancing Ecosystems

Focus Area 4A: Restoring, preserving and enhancing biodiversity;

Focus Area 4B: Improving water management;

Focus Area 4C: Preventing soil erosion and improving soil management.

Priority 5: Resource-efficient, Climate-resilient Economy

Focus Area 5A: Increasing efficiency in water use by agriculture;

Focus Area 5B: Increasing efficiency in energy use in agriculture and food processing;

Focus Area 5C: Facilitating the supply and use of renewable sources of energy;

Focus Area 5D: Reducing greenhouse gas and ammonia emissions from agriculture;

Focus Area 5E: Fostering carbon conservation and sequestration in agriculture and forestry.

Priority 6: Social Inclusion and Economic Development

Focus Area 6A: Facilitating diversification, creation and development of small enterprises, as well as job creation;

Focus Area 6B: Fostering local development in rural areas;

Focus Area 6C: Enhancing the accessibility, use and quality of information and communication technologies (ICT) in rural areas.

Rural Development policy is performed through Rural Development Programmes (RDPs) in each European Union Member State. These programmes are muniments compiled by countries and regions, defining strategic approaches and actions in order to meet the needs of the specific

geographical area they cover.

Rural development strategies and projects are being funded by EAFRD. EAFRD budget is being distributed according to six priorities; promotion of knowledge and innovation in agriculture, forestry and rural areas; fostering sustainability and competitiveness of every agricultural type and enhancing innovative technologies on farming and sustainable forest management; fostering the organization of the food chain, the welfare of animals and the risk management in agriculture; enhancing resource efficiency and supporting the transition to a low-carbon and climate resistant economy in agriculture, food and forestry sectors; restoration, conservation and promotion of ecosystems related to agriculture and forestry; enhancing social integration, poverty reduction and economic growth in rural areas. EU member states are implementing RDPs covering at least four of the six priorities of the EAFRD.

Concomitantly, at least 30% of each RDP's funding should be devoted to environmental and climate change measures, while at least 5% should be dedicated to LEADER method actions. The LEADER programme is a European Union initiative to promote projects of rural development, managed by LAGs, in order to revitalise rural areas and create jobs.

EAFRD, including some additional national contributions, funded 118 national and regional RDPs during the 2014-2020 programming period. EAFRD funding for rural development in the current seven-year period is approximately €100 billion, while public funding in the Member States is €61 billion.

Rural development funding through EAFRD is included in a wider framework ESI Funds, which is formally governed by a set of basic legal rules, the Common Provision Regulation and they are coordinated under the Common Strategic Framework. ESI Funds is a substantial investment policy tool of European Union, which except EAFRD (Rural Development), includes EMFF (Fisheries Development), ERDF (Regional Development), CF (Cohesion Development) and ESF (Social Development) and dispose for the programming period 2014-2020 an overall budget of €454 billion. Those five ESI Funds are strategic plans indicating goals and investment priorities of each EU Member State and they are managed nationally, by each country, relying on Partnership Agreements with European Commission. This European-level coordination ensures that the ESI Funds contribute to the Europe 2020 strategy.

Rural Development policy and RDPs are regulated by a number of basic EU Regulations and

implementing and delegated acts.

The EU Regulations, which define the legal framework of Rural Development policy in the programming period 2014-2020, are presented below:

- Common Provisions Regulation (EU) No 1303/2013, which includes a number of basic rules describing the common strategic approach for the European Structural and Investment Funds.
- Rural Development Regulation (EU) No 1305/2013, which includes a number of particular rules to preserve rural development under the EAFRD
- Horizontal Regulation (EU) No 1306/2013, which includes a number of basic rules on financing, management, monitoring and evaluation of Common Agricultural Policy (CAP)
- Transitional Regulation (EU) No 1310/2013 which includes legal provisions supporting rural development under the EAFRD, adjusting the transition between funding periods of 2007-2013 and 2014-2020.

The implementing and delegated acts, which regulate specific aspects of Rural Development policy and ensure the uniform application of EU Regulations across all Member States in the programming period 2014-2020, are presented below:

- Implementing Regulation (EU) No 809/2014, which establish rules on the integrated administration and control system, rural development measures and cross compliance for the application of Regulation (EU) No 1306/2013.
- Implementing Regulation (EU) No 808/2014, which establishes rules on support for rural development by the EAFRD for the application of Regulation (EU) No 1305/2013.
- Delegated Regulation (EU) No 807/2014, which support rural development by the EAFRD and introduce transitional provisions, supplementing Regulation (EU) No 1305/2013.
- Implementing Regulation (EU) No 834/2014, which establish rules for the application of the common monitoring and evaluation framework of the CAP
- Delegated Regulation (EU) No 640/2014, which concerns integrated administration and control system and conditions for refusal or withdrawal of payments and administrative

penalties applicable to direct payments, rural development support and cross compliance, supplementing Regulation (EU) No 1306/2013.

### 1.4.4 The future CAP

The future CAP, beyond 2020, will be enriched by legislative proposals, which will help EU to achieve goals towards a more sustainable and green system of agriculture. The new proposals were presented by the European Commission on June of 2018 and their goal is to form one more sensitive policy to current and future challenges, while at the same time will manage to support farmers for a sustainable and competitive agriculture. The communication on the future of food and farming define the route for the CAP, ensuring the best value for money. The European Commission traces the priorities which must be confronted from the future CAP and adopt a more flexible approach to policy implementation, so that the results occur more effective.

The future CAP will be based on nine objectives: continuing climate change action and caring for environment, safeguarding fair income to farmers, increasing competitiveness, balancing food chain power and preserving food and health quality, maintaining biodiversity and landscapes, supporting generational renewal and preserving vibrant rural areas.

The future CAP will include a more targeted and flexible approach and small to medium-sized farms will be prioritized, in order to encourage young farmers to join agriculture. Furthermore, farmers will be rewarded for contributing more and exceed compulsory requirements in tackling climate change, protecting the environment and preserving landscapes and biodiversity. The Commission proposes and new measurements will emphasize on performance and results towards rules and compliance.

More specifically, the main elements for the modernization and simplification of the CAP are the following:

1. A new way of working: Member States will have more flexibility in how they use their funding, enabling them to design customized programs that respond to their farmers' concern and to their rural communities' concerns. Member States will also be able to transfer between direct aid and rural development, and vice versa, up to 15% of their CAP funds, in order to ensure that their priorities and measures can be funded.

2. Fairer conditions through better targeting of support: Direct payments will continue to be an essential part of the policy and ensure stability and predictability for farmers. Priority will be given to supporting small and medium-sized farms, which make up the bulk of agricultural sector, as well as assistance to young farmers. The Commission remains committed to the goal of a fairer distribution of direct payments between Member States through external convergence.

3. Greater ambitions for action on the environment and climate: The EU currently proposed objectives cover climate change, natural resources, biodiversity, habitats, and natural landscapes. Income support for farmers is already linked to the implementation of environmentally friendly and climate-friendly practices, while the new CAP will require farmers to achieve more ambitious goals, through mandatory measures and incentive-based measures.

4. Making the most of knowledge and innovation: The new CAP will leverage all the latest technologies and innovations, thus helping both farmers and public administrations.

# 2 CHAPTER: ANALYSIS OF A STRATEGIC AND LEGISLATIVE FRAMEWORK TOWARDS THE NATIONAL STRATEGIC FRAMEWORK OF CYPRUS AND THE NATIONAL ENVIRONMENTAL POLICY REGARDING CODES OF GOOD AGRICULTURAL PRACTICES

## 2.1 Introduction

The majority of scientists today agree on the growing impact of economy and society on the earth's climate from activities such as burning fossil fuels, deforestation and livestock. Efficient use of natural resources, such as water, forests and mineral resources, is of a high priority, and results from EU environmental legislation and from the need to use resources sustainably in order to ensure their long-term contribution to the national economy. Of particular importance is the efficient use of all available water resources (conventional and non-conventional), as their scarcity is expected to be exacerbated by the effects of climate change.

Member States are obligated to compile a National Framework for the development of general conditions for environmental action. This framework provides in particular that these actions must meet the appropriate requirements of Regulation (EC) 1698/2005, including the requirements of complementarity, consistency and compliance.

Cyprus is an island characterized by a unique natural environment, which is a valuable heritage that need to be protected. At the same time, important synergies towards the protection of natural environment recommend activities that contribute to the economic development of the country. Cyprus is facing the challenge of developing its economy in a way that reduces greenhouse gas emissions, while taking appropriate measures and actions to adapt to climate change. Given that a substantial part of Cyprus' greenhouse gas emissions comes from fluorinated greenhouse gases, emphasizes the need for full and correct implementation of the institutional legal framework for their reduction and / or recovery. At the same time, the exploitation of the environmental advantages of Cyprus can contribute to the economy, taking into account the environment from a new perspective and recognizing the dynamics of the environmental peculiarities of Cyprus.

Proper management of both domestic and industrial waste, solid and liquid, to protect the environment, while contributing to economic growth. New areas of entrepreneurship in the field of environmental protection, which were previously neglected, have come to the fore again, as a result of the laws and policies that have been implemented in recent years.

This chapter will develop the strategic planning of the environmental policy of Cyprus in relation to its four central objectives, mitigation and adaptation to climate change, environmental protection, resource efficiency and enhancing the institutional capacity and impressing the effectiveness of the department. Also, it will be described the Rural Development Program 2014 - 2020 of Cyprus and in particular there will be analysed the geographical scope of the program, the agri-environmental measures, depending on its priorities and there will be listed the contributing measures and regimes. In addition, the current status of regulatory requirements, arising from national and European commitments, will be assessed and in particular the strengths and weaknesses of the implementation of the agri-environmental measures of the Rural Development Program, which contribute to the achievement of the objectives of priority 4 and will be identified opportunities and risks that lurk in the foreground.

## 2.2 Strategic Environmental Policy Planning of Cyprus

One of the most important pillars of environmental policy is tackling climate change and the measures to be taken, both to mitigate the effects and to adapt to it. The objective of the strategy is to develop a set of principles for formulating an action plan in accordance with international challenges, and in line with EU policy guidelines, in order to adjust to specific national circumstances.

Along with the protection of environment and natural resources, sustainable development can be achieved through policies concerning all three pillars, id est social, economic and environmental. Therefore, it is significant that policies developed within this objective, aim at protecting the environment, while at the same time, through synergies with other government policies, they aim to achieve an inclusive society and economic development.

The environmental strategic plan of Cyprus focuses on mitigation and adaptation to climate change, environmental protection, resource efficiency and enhancing the institutional capacity and improving the effectiveness of the department.

### 2.2.1 Mitigation and adaptation to climate change

Activity 1.1: Reduction of greenhouse gas emissions

Regarding the cost-effective reduction of greenhouse gas emissions the basic tool is EU greenhouse gas ETS. In order to achieve the objectives of ETS, it is necessary to license, control and monitor the stationary installations participating in the System and aviation, as well as to maintain the National Greenhouse Gas Emissions Trading Register and the auction of emission allowances.

For sectors not included on ETS, member States have committed as part of the European climate and energy package of 2009, to targeted national emission reduction. Commitments imposed by international and community legislation on climate change, protection of the ozone layer and regulation and monitoring of fluorinated greenhouse gases include the submission of inventory reports, projections on greenhouse gas emissions, reports on funding, the policies and measures and a biannual report, under the Framework Convention on Climate Change.

In order to achieve national goal of Cyprus for reduction of 5% by 2020 compared to 2005, it is necessary to prepare a strategic plan for the reduction of greenhouse gas emissions, in accordance with the provisions of the relevant Decision (No. 406/2009 / EC ), which was prepared.

In order to achieve objectives for reducing greenhouse gas emissions, they are exploited available financial and other tools, such as the possibility of concluding transnational agreements for greenhouse gas emission allowance trading and exploring the possibility of characterizing geology of Cyprus in terms of its suitability for implementation of technology for geological storage of carbon dioxide and the projects that receive funding from NER300 program, as well as the allocation of at least 50% of the proceeds from the auction of greenhouse gas emission allowances to specific actions related to climate change.

A significant change in 2017 was the adoption of the Governance System for Climate Change and Energy, as policies and measures to reduce emissions are effectively coordinated with other state policies and contribute substantially to emission reduction, through appropriate integrated planning.

Activity 1.2: Adaptation to climate change

Adaptation to climate change presupposes the creation and implementation of a national strategy and appropriate action plans in all sectors of economy, integration of adaptation measures in all relevant sectoral policies (health, water resources, agriculture, fisheries, forests, biodiversity, soils, tourism, coasts, energy and infrastructure) and ex-ante evaluation of the risk from the effects of climate change.

In order to promote and implement action plans and adaptation measures they are used financial programs and tools offered by the EU, such as the LIFE program and the NER 300 program, the CF and the allocation of at least 50% of the proceeds from the auction of greenhouse gas emission allowances to specific actions related to climate change.

In May 2017, the Council of Ministers approved the National Strategy for Adaptation to Climate Change and the relevant Action Plan. This Decision designates specific implementing bodies for the adaptation actions, while at the same time at the same time designates as Monitoring Body the Department of Environment. During 2017, the Department of Environment held meetings with stakeholders to coordinate the implementation of measures of the Action Plan, including their review / updating.

Activity 1.3: Implement international and European commitments on climate change, protection of ozone layer and regulation and monitoring of fluorinated greenhouse gases

Commitments under the international and European legal framework include submission of emission inventory reports, greenhouse gas emission forecasts and reports on funding, policies and measures implemented to adapt to climate change and reduce greenhouse gas emissions. In addition, under the UNFCCC, a national report and a biennial report are required. Participation in international conferences and preparatory meetings at European level, which is necessary for the safeguarding of national interests and objectives, entails additional requirements and obligations.

The regulation and monitoring of fluorinated greenhouse gases requires the implementation of financial plans in order to withdraw and destroy prohibited refrigerants and in addition the creation of plans for recovery and destruction of gases in accordance with the relevant legislation, which provide the necessary incentives to equipment operators.

### 2.2.2 Environmental protection

Activity 2.1: Environmental licensing to prevent and control pollution and waste management

Cyprus' environmental strategic plan also focuses on environmental protection. The main objective of this action is to prevent and control pollution from various activities and manage waste, through a vertical legal and regulatory package. In particular, water and soil pollution control issues are regulated through the Water Pollution Control Laws, as well as the Industrial Emissions Law which

concerns the most potentially polluting installations, aimed at integrated pollution prevention and control, the minimization of the environmental impact and the application of Best Available Techniques. Waste management is governed by the Waste Law, to ensure public health and environmental protection. Waste from the mining industry is regulated by the Law on Waste Management of the Mining Industry.

Under this legal framework, industrial, livestock and other activities are licensed, as well as waste management activities. Specifically, there are three types of licenses granted: Waste Disposal License, Waste Management License and Industrial Emissions License.

Efforts are underway to improve and modernize the legal framework for more effective implementation, reduction of administrative burden and more efficient service of economic operators and companies in terms of environmental licensing.

Activity 2.2: Inspections / controls for the implementation of legislation related to pollution control and waste management

In the context of environmental protection and public health, various controls and inspections are carried out on operators, management bodies and waste producers in order to enforce provisions of the legislation and promote the "polluter pays" principle. Specifically, inspections are carried out for the purpose of controlling compliance with the terms of Waste Disposal Licenses, Waste Management Licenses and Industrial Emissions Licenses in licensed facilities. As part of the implementation of the legislation, inspections are carried out on producers or holders of waste and on facilities that operate without licenses. An important part of the inspections is the investigation of a large number of complaints and grievances, as well as the monitoring of discharges from waste treatment plants. Also, controls of the export and import of waste are carried out in cooperation with the Cyprus Police, the Customs Department and the Ports Authority, as well as controls concerning the management of the quality of the bathing waters. A relevant report is prepared after each inspection. In case of violations of the law, letters of compliance are sent. In addition, an out-of-court settlement may be imposed or a report may be sent to the Attorney General for criminal prosecution.

In addition, in the context of improving compliance with environmental legislation, protected areas are defined and management plans and action plans are prepared, as required by European Directives and International Conventions.

Effective pollution control and waste management require significant financial resources and properly trained staff. Part of the necessary financial resources are raised from Community funds, through the LIFE Program.

Activity 2.3: Species and habitat management aiming on accelerating the rate of conservation status degradation

The main objective of this action is the implementation of the Habitats Directive through the protection and management of the NATURA 2000 Network, including the mapping of species and habitats, the implementation of management measures for network areas, the monitoring and surveillance of designated areas and the implementation of protection actions. Other important actions outside the Natura Network include measures for the movement of species and genetic resources, the reduction or elimination of invasive species, and the release into the environment of Genetically Modified Organisms.

The aim of this activity is also the preparation and implementation of a broader strategy for biodiversity, the maintenance and improvement of ecosystem services and the restoration of degraded ecosystems through the promotion of green infrastructure.

The protection and management of natural capital requires significant human and financial resources. Therefore, part of the required financial resources is raised from Community funds such as the LIFE program and the ERDF.

Activity 2.4: environmental impact assessment from plans / programs / projects and other actions

The activity covers the overall process of environmental impact assessment for new plans and projects, which include assessment of individual environmental aspects, coordination and cooperation with other Departments, etc. For the coastal areas, the strategy for their integrated management, determines the land area of the coastal zone and plans the start of the implementation of the relevant Action Plan for the period 2018-2028. Regarding environmental noise, there are strategic noise maps (Nicosia, Limassol, Larnaca, Paphos) and action plans are being promoted to reduce noise from roads, airports and industrial facilities to protect citizens from noise.

It is planned to enter into force the new legislation on Environmental Impact Assessment from projects that will provide the necessary tools for more efficient and effective implementation

(decree on study contents, register of researchers, mandatory monitoring). It is being Promoted the creation of an environmental impact assessment platform for environmental legislation, SEA, EIA and computer software for the environmental assessment process.

In addition, the institutional framework will be appropriately formulated, in particular with regard to the management of environmental aspects concerning licensing in the field of hydrocarbon mining impact management.

Part of required financial resources for the implementation of the above actions is derived from the Structural Funds (Cohesion Fund technical assistance and the European Maritime and Fisheries Fund).

### 2.2.3 Resource efficiency

Activity 3.1: efficient waste management, use of resources and actions for a greener and more circular economy

An additional objective on Cyprus' environmental strategic plan concerns resource efficiency and eventually the transition to a green economy. A series of actions, such as measures for the appropriate waste management, the implementation in cooperation with local authorities of separate collection systems and waste prevention are being promoted by the Municipal Waste Management Plan and the National Waste Prevention Programme.

Promotion of green economy is achieved through transposition and implementation of various initiatives promoted through the European Commission's package for Circular Economy and new goals and provisions adopted through the amendment of the waste directives.

The implementation of Waste Management Strategy in the context of circular economy will be achieved through the revision of institutional framework, the strengthening of local authorities, the improvement of infrastructure, and the provision of incentives, the implementation of extended producer responsibility and the full utilization of mechanisms to raise public awareness and educate stakeholders.

The National Waste Prevention Program and the Municipal Waste Management Plan promote a series of legislative measures for the rational management of waste, the establishment of producer

responsibility for additional waste streams, the responsibility of local authorities for the implementation of preventive measures and the conclusion of voluntary agreements with companies for the implementation of prevention programs and the establishment of a sponsorship plan to support the improvement of waste management infrastructure and industries that can use recyclable materials in their production cycle. The implementation of the above actions is one of the top priorities of the Department of Environment, in view of the narrow timetables that exist for compliance with the relevant European obligations.

The "Oil and Liquid Fuels", "Tires" and "Other Waste" Management Plans promote measures, which are mainly legislation and other actions for the better implementation and monitoring of proper and, according to the hierarchy, waste management.

For the implementation of obligations related to waste management, the Department of Environment draws financial resources from community funds, participating in co-financed programs. Specifically, the Department of Environment participates in several European competitive programs, such as LIFE, INTERREG, etc. In addition, significant financial resources are being raised from the CF for the implementation of separate collection programs on the coastal fronts and the promotion of PAYT programs by local authorities, and CF technical assistance.

Activity 3.2: promoting the implementation and wider adoption of environmental significance tools in the market (emas, ecolabel, green contracts)

It is also being promoted the conclusion with businesses into voluntary agreements to implement waste prevention programmes and create a funding program to countenance progress in waste management industries and infrastructure which could potentially use, in their production cycles, recyclable products. The above actions are a top priority of the Department of Environment, which promotes the implementation of environmental market tools and labelling, such as ECOLABEL, EMAS and Green Public Procurement.

Through a series of measures and campaigns, the Department of Environment actively promotes the wider application of EMAS for environmental management of businesses and other service sectors and ECOLABEL for products, as well as the Green Public Procurement for the integration of environmental parameters in public procurement and the market of green products and services in the public sector.

### 2.2.4 Enhancing the institutional capacity and improving the effectiveness of the Department of Environment.

Finally, Cyprus' environmental strategic plan focuses on enhancing the institutional capacity and improving the effectiveness of the Department of Environment. Developing, monitoring, evaluating and reviewing the Strategic Plan of the Department of Environment is an important factor in improving the institutional framework and therefore in modernizing the Department. Primary step to this is the consolidation and centralization of responsibilities in a single department.

The amelioration of the legal environmental permits framework constitutes a significant perspective of upgrading the institutional framework of the Department and can lead to a diminution of workload in public service as well as in private sector.

Productivity and quality amelioration of provided services is a continuous task. The efforts are mainly focused on enhancing the Department's procedures operations, by installing automated procedures, developing databases and spatial and constantly upgrading websites and the providing continuously further information through e-government.

Simultaneously, the electronic submission of information is fostering, as well as the standardization. Efforts will be facilitated by the Department's modification, while at the same time it must emphasize on employees' lifelong learning and continuous training. The Department emphasizes on absorbing Community funds by coordinating and promoting actions and programmes funding by the European Cohesion and Investment Funds and the management of the LIFE Programme, in order to strengthen the implementation of its objectives in every area. In addition, the effectual aim's performance is fortified by the constant assessment of environmental condition and the preparation of relevant reports, which proves the effectiveness of measures and conduct the formulation of future policy.

## 2.3 Environmental protection Measures sourcing from the Rural Development Programme of Cyprus

The Environmental protection Measures sourcing from the Rural Development Program 2014-2020 (RDP 2014-2020) of Cyprus is the main tool of agricultural policy for the development of the primary production sector and the Cypriot countryside. The strategy of RDP aims to serve a General

Objective which is "the adaptation of Cyprus Agriculture to the new economic conditions and the increase of the environmental challenges created by climate change". It consists of a series of measures aimed at enhancing the competitiveness of agriculture and agri-food products, ensuring the sustainable management of natural resources and improving the vitality of rural areas and achieving balanced territorial development, including employment.

Improving competitiveness does not concern only the economic dimension, but as well the environmental sustainability of Cyprus Agriculture. Therefore it is necessary to give significant financial weight to the restoration, conservation and strengthening of ecosystems that depend on agriculture and forestry and in promoting resource efficiency and supporting the transition to a low-carbon economy with climate change resilience, as they serve in parallel two of the three key objectives of the program (environment & climate change). The interventions will jointly aim at meeting targets for biodiversity conservation, improving water and soil management and using energy in agriculture and livestock more efficiently.

Rural development policy 2014 – 2020 offer various types of area-related payments linked with requirements for management practices that have a proven positive impact on biodiversity, soil, water, and air in both the farm and forest sectors. Among other things, support is available for providing environmental benefits through organic farming. Support for knowledge-building, investments, co-operation and innovation also contribute strongly to environmental improvements.

The Rural Development Program 2014-2020 is addressed to various categories of beneficiaries such as farmers, producer groups, companies, individuals, local authorities, partnerships, government departments and other bodies.

The Rural Development Program of Cyprus during programming period 2014-2020, is structured in six priorities:

1: Promoting knowledge transfer and innovation in agriculture, forestry and rural areas

2: Enhancing the competitiveness of all types of agriculture and enhancing the viability of farms

3: Promoting food chain organization and risk management in agriculture

4: Restoration, conservation and enhancement of ecosystems dependent on agriculture and forestry

5: Promoting resource efficiency and supporting the shift to a low carbon economy with climate change resilience

6: Promoting social inclusion, poverty reduction and economic development in rural areas

The Program takes into account the goal of innovation through measures that have a direct impact on innovation, but also through other measures that are more or less linked to its promotion. At the same time, participation in the EIP provides the opportunity for the exchange of knowledge and the adoption of practices that have emerged following scientific research.

The Cypriot Agriculture and the agri-food sector in general, has been studied and captured very recently, in the SWOT analysis for the ex-ante evaluation of the Rural Development Program, in the study for the smart specialization within the programs for Europe 2020 but also in the Corporate Pact Relationship between Cyprus and the E. Commission.

Conclusions on these studies show low rates of applied research, lack of innovation, reduced competitiveness and the need to identify and highlight local products, low bargaining power of producers, low adaptability to climate change, limited adaptation. and adoption of systems for differentiation of the quality of the produced products. Through the new RDP, the introduction of new approaches and methods is foreseen both in the production process and in matters of cooperation, networking and introduction of the culture of innovation in the whole range of Cypriot agricultural and agri-food companies. In addition, the need for continuous training and information of producers, the development and strengthening of their skills is also one of the structural changes needed by the sector.

The reduced participation of companies in the primary sector in innovation programs is a significant disadvantage, something that the new RDP is trying to resolve. The preparation of the measures was based on the necessity of linking the agricultural research with the needs of the agri-food sector, but also the need to develop and strengthen the conjugation bodies and to diffuse the results of the research in production as well as to promote innovation in agriculture and food industry.

Regarding the climate change and the need to adapt to new conditions, has been recorded and highlighted the immediate need to restructure the crops, both for water needs of the plantations as for their productivity under arid conditions and lack of water. This adaptation to the climate is a top priority, as changes of climatic conditions in Cyprus are more visible. Research of new varieties or

modification of native varieties with special characteristics will help resolving the problem and adapt to the changes. In addition, the adoption of new farming systems and the development of methods and technology of agricultural activity in mountainous areas will have positive results in the whole effort.

The restoration and conservation of biodiversity and consequently of ecosystems is a primary goal of the basic environmental measures M8, M10 & M12. The preparation of the Legal Framework that predict the farmers' obligations related to agricultural activity within the areas of "Nature 2000" Network, enables their subsidy (M12) through the RDP 2014-2020. This will contribute to conserve part of the crop for wildlife feeding purposes and preserve unripe pieces of grain during the nesting period, contributing substantially to the recovery and conservation of biodiversity. The implementation of the agri-environmental actions of M10 will contribute to the creation of micro-habitats inside and around the agricultural holdings, while it will enable the emergence of greater diversity on the number of species of native flora. At the same time, the actions of M08 will contribute positively to the establishment of animal and plant organisms, but also to the recovery of degraded habitat types and ecosystems.

Through the measures of RDP 2014 - 2020, an effort is made to protect and properly manage the available quantities of water, aiming to reduce the impact of low rainfall on agriculture as major water shortage problems are created and have an impact on both production and in the preservation of crops.

### 2.3.1 Rural Development Program priorities

The Rural Development Program 2014-2020 (Pillar II) is structured in six (6) Priorities. Within these priorities, measures are planned to contribute to the achievement of the policy objectives. Thus, there is a general priority, i.e. the promotion of knowledge transfer and innovation and three cross-sectoral objectives (innovation, environment, climate change mitigation and adaptation) related to all the other five priorities. Particularly:

<u>THEMATIC PRIORITY 1: Promoting knowledge transfer and innovation in agriculture, forestry and rural areas</u>

a) Promoting innovation and knowledge base in rural areas

b) Strengthening the links between agriculture, forestry, research and innovation

c) Promotion of Lifelong Learning and Vocational Training

THEMATIC PRIORITY 2: Enhancing the competitiveness of all types of agriculture and enhancing the viability of farms

a) Facilitating the restructuring of agricultural holdings in difficulty, and in particular in areas with a low market share, areas with a focus on specific sectors and areas with a need for agricultural diversification

b) Facilitation of generational renewal in the agricultural sector.

THEMATIC PRIORITY 3: Promoting food chain organization and risk management in agriculture

a) Better integration of primary producers in the food chain through quality systems, promotion in local markets and small supply chains, producer groups and interprofessional organizations

b) Risk management support on the farm

THEMATIC PRIORITY 4: Restoration, conservation and enhancement of ecosystems dependent on agriculture and forestry

a) Restoration and conservation of biodiversity

b) Improving water management

c) Improving land management

THEMATIC PRIORITY 5: Promoting resource efficiency and supporting the shift to a low carbon economy with climate change resilience

a) Increasing the efficiency of water use in agriculture

b) Increasing energy efficiency in agriculture and food processing

c) Facilitating the use of RES, waste by-products and other non-food raw materials for economic purposes

d) Promoting carbon sequestration in agriculture and forestry

THEMATIC PRIORITY 6: Promoting social inclusion, poverty reduction and economic development

in rural areas

a) Facilitate diversification, create new small businesses and job positions

b) Promoting local development in rural areas

c) Enhancing the accessibility, use of ICT in rural areas

### 2.3.2 Proposed measures of rural development program 2014 - 2020

MEASURE 1: knowledge transfer and awareness actions

The Measure aims at the vocational training and the enrichment of knowledge and experiences of farmers and foresters. The measure includes the following three schemes:

Scheme 1.1: Vocational training and skills development actions

Scheme 1.2: Information and demonstration actions

Scheme 1.3: Short-term exchanges for the management of agricultural and forestry holdings and forests as well as visits to agricultural holdings and forests

MEASURE 3: agricultural products & food quality systems

The aim of the Measure is to provide support to all new farmers' participation in community, national and voluntary quality systems, in order to alleviate the additional burdens due to additional obligations and additional costs required during the first years of participation in such systems. The Measure also support information and promotion activities aimed at better informing consumers about the existence and presentation / promotion of product specifications produced in the Community under community and national quality systems. The measure includes the following two schemes:

Scheme 3.1: Aid for new entries in quality systems

Scheme 3.2: Aid for information and promotion activities implemented by producer groups in the internal market

MEASURE 4: investments in material assets

Measure 4 is one of the most important Measures of the Rural Development Program 2014-2020 as it covers the largest range of investments in the agri-food sector of the place. The agri-food sector is characterized by serious competitiveness problems arising mainly from the structural problems of the sector in combination with the existing environmental, climatic and geophysical constraints. The measure includes the following three schemes:

Scheme 4.1: Investments that improve the overall performance and viability of farms

Scheme 4.2: Investments related to the processing, marketing and development of agricultural products

Scheme 4.3: 4.3.1 Spatial livestock development

4.3.2 Investments in water related infrastructure

4.3.3 Application of innovative technologies in irrigation projects

MEASURE 6.1: strengthening the first installation of young farmers

The Measure provides financial support for the first installation of young people, over 18 and under 40 years old, in the field of agriculture. The aim is to encourage young people who want to be active in agriculture, facilitating their entry. The areas of the beneficiaries' applicants must be owned or rented with a minimum lease of five years. Applicants should submit a business plan outlining the development of the unit in relation to the current situation. They are also required to obtain adequate vocational training, in case they do not already hold one, and they must join the Social Security Fund as self-employed farmers / stockbreeders.

MEASURE 7: Basic services and renovation of villages in rural areas

The Measure aims at rural development with the aim of preserving and highlighting the natural and cultural wealth of rural areas through the implementation of infrastructure projects for the benefit of the rural population. The Measure becomes a trigger for the utilization of every resource of the Cypriot countryside. The infrastructure projects under the Measure will not be implemented in urban areas. The measure includes the following four schemes:

Scheme 7.2: Creation, improvement or expansion of every types of small-scale infrastructure.

Scheme 7.3: Broadband infrastructure including its creation, improvement and expansion, passive

broadband infrastructure and provision for access to broadband and public e-government solutions.

Scheme 7.4: Investments for the creation, improvement or expansion of local basic services for the rural population, including leisure and culture.

Scheme 7.5: Investments for public use in leisure infrastructure, tourist information and small-scale tourism infrastructure.

MEASURE 8: Investments in the development of forest regions and the improvement of forest sustainability

The Measure aims to:

- the creation of forests and wooded areas in agricultural and non-agricultural areas of rural areas
- the creation and / or improvement of the existing system of protection of forests and wooded areas from fires
- repairing damage to forests due to forest fires, protecting the soil from erosion and relocating the forest or forest vegetation after fires
- the creation and upgrading of small-scale infrastructure, which will improve and upgrade the social role of forests and in particular forest recreation and forest tourism services
- the protection of biodiversity by removing foreign invasive species and creating small-scale infrastructure to enhance the biotic elements of nature
- mitigating climate change and
- adapting ecosystems to climate change

The measure includes the following four schemes:

Scheme 8.1: Afforestation and creation of wooded areas

Scheme 8.3: Prevention of forest damage due to forest fires, natural disasters and catastrophic events

Scheme 8.4: Rehabilitation of forest damage due to forest fires, natural disasters and catastrophic

events

Scheme 8.5: Investments that improve the resilience and environmental value of forest ecosystems, which includes the following three Actions:

8.5.1 Investments to improve the value of forests as a public good

8.5.2 Actions and projects for the conservation and enhancement of biodiversity in forests

8.5.3 Dilutions in dense forest / reforestation clusters to improve forest resilience

MEASURE 9: Establishment of groups and producers' organizations

The purpose of this Measure is to facilitate the composition and the administrative function of Producer Groups and Organizations in the field of agriculture.

The objectives of Producer Groups and Organizations will be to adapt the production and products of the producers - members to market requirements, the joint distribution of goods on the market including preparation for sale, concentration of sales and supply of wholesalers, the establishment of common rules for information relating to production and in particular in relation to harvest and availability.

MEASURE 10: Agricultural and climate measures

The Measure aims to fight environmental problems arising from farming activities where possible, as well as mitigation actions of environmental impact. The main objectives of the Measure contribute to the preservation of the environment and the mitigation of phenomena that intensify climate change. The measure includes the following fourteen schemes:

Scheme 10.1.1: Exclusion of the use of chemical herbicides in specific crops

Scheme 10.1.2: Application of crop rotation in the cultivation of potatoes and cereals

Scheme 10.1.3: Targeted agri-environmental actions in the cultivation of potatoes and citrus fruits

Scheme 10.1.4: Maintaining environmentally friendly banana farming practices

Scheme 10.1.5: Reduction of irrigation water requirements at aquifer level

Scheme 10.1.6: Protection of natural vegetation and landscape features, for biodiversity purposes and erosion reduction

Scheme 10.1.7: Maintenance of existing dry wells within agricultural parcels

Scheme 10.1.8: Agri-environmental obligations for conservation and sustainable use in traditional vine varieties

Scheme 10.1.9: Agri-environmental obligations for conservation and sustainable use in traditional animal breeds

Scheme 10.1.10: Management of bee colonies in order to maintain harmonious coexistence with insectivorous birds

Scheme 10.1.11: Environmental actions in Areas of High Natural Value

Scheme 10.1.12: Voluntary program of integrated management of pests and diseases in wine and table vines.

Scheme 10.1.13: Application of fire protection treatments in woodland areas cultivated with cereals.

Scheme 10.2: Support for the conservation and sustainable use and development of genetic resources in agriculture.

MEASURE 11: Organic farming

The Measure aims to encourage the conversion and maintenance of organic farming practices. The aid is provided to encourage farmers to participate in such schemes, thus responding to society's demand for the use of environmentally friendly farming practices.

The measure includes the following two schemes:

Scheme 11.1 Conversion from conventional to organic farming

Scheme 11.2 Development of organic farming

MEASURE 12: Aid under Natura 2000 and water framework directive

The Measure contributes to the compensation of the loss of farmers' income, whose parcels are located within the areas of the Natura 2000 Network and fall under the special regulations of the Actions. The Measure will be applied to the agricultural areas of Natura 2000 sites, as defined, taking into account any future additions of sites to the Network list.

The measure includes the following two actions:

Action 12.1.1 Maintain harvest-free production in Natura 2000 agricultural and forestry areas and cohesion areas

Action 12.1.2 Pasture Management

MEASURE 13: Aid for areas facing natural or other disadvantages

The Measure establishes an aid scheme for agricultural holdings in less-favored areas (mountainous areas, areas with natural disadvantages and areas with special disadvantages), to compensate for part of the economic losses incurred during agricultural activity in these areas.

The measure includes the following three schemes:

Scheme 13.1 "Mountain Areas",

Scheme 13.2 "Areas with natural disadvantages",

Scheme 13.3 "Areas with special disadvantages".

MEASURE 14: Good treatment of goats and sheep

The Measure will apply to all breeders / owners of sheep and / or goats with a minimum criterion of the number of productive ewes / female goats (34 animals). Participants commit to undertake a two-year good management plan for the sheep and goats which will include an annual review of the sheep and goats' welfare, monitoring and maintenance of sheep and goat welfare data and an annual plan of preventive controls. At the same time, they are obliged to receive training related to the eligible actions of the measure from the Department of Agriculture. In addition to the above basic conditions for inclusion in the measure, breeders should undertake at least 3 of the following 4 actions:

A. Biosafety application

B. Maintaining physical condition and eliminating castrations

C. Prevention of factors that cause lameness

D. Check for mites, ticks, fleas and lice

MEASURE 16: Collaboration

The Collaboration Measure aims to support Rural Development, through activities that promote cooperation between various factors in the agri-food and forestry sector in order to work together to implement innovation projects, with special emphasis on cooperation projects that promote competitiveness, the environment and the transfer of knowledge, experience and innovation to rural areas and agri-food companies.

The measure includes the following three schemes:

Scheme 16.1 Support for the establishment and operation of Business Teams

Scheme 16.2 Creation of new quality systems

Scheme 16.4 Short chains and local markets

MEASURE 19: Support for local development through leader

LEADER is an initiative of the European Union through which operators of rural areas join forces and create the LAGs, which implement integrated local development strategies in order to strengthen growth in their area. The LEADER initiative was implemented for the first time in Cyprus during the programming period 2007-2013. During this period, LAGs gained significant experience and skills, that will form the basis for an integrated approach to local development during the new programming period. The Measure will be applied mainly in the mountainous and semi-mountainous areas that face significant development problems in order to address their development lag, both in sectors of local economy and sectors of infrastructure and services provided to residents. The measure includes the following four schemes:

Scheme 19.1 Preparatory Support

Scheme 19.2 Support for the implementation of local development strategy operations initiated by local communities (Education and vocational training actions for non-agricultural activities, Investment support actions for non-agricultural activities, Small-scale public infrastructure, Cooperation, Other small-scale development activities aimed at rural areas based on the specific characteristics of the area)

Scheme 19.3 Preparation and implementation of LAG cooperation projects

Scheme 19.4 Operating Expenses - Coordination of the Local Development Strategy

MEASURE 20: Technical assistance

Constitutes the measure – tool of the Managing Authority to cover costs related to the implementation of Rural Development Program. More specifically, the costs concern the following:

- Actions related to preparation, management, monitoring and evaluation of the Program
- Publicity and promotion actions of the Program
- Funding the operating costs of the National Agricultural Network and its action plan
- Funding external evaluations required for the Program
- Covering the expenses of the meetings of Monitoring Committee
- Involvement of stakeholders in Commission meetings as well as in relevant conferences or seminars related to the Program
- costs that are inextricably linked to the Program and contribute to further rational, efficient and effective implementation of the Program and to wider rural development.

### 2.3.3 Analysis of agri-environmental measures of the program

According to Regulation 1305/2013, agri-environmental measures mean the measures that contribute to the achievement of the fourth priority of the Rural Development Program 2014-2020 "Restoration, conservation and strengthening of ecosystems related to agriculture and forestry" and consists of three areas (a) the restoration, conservation and enhancement of biodiversity, including areas of the Natura 2000 network, and within areas with natural or other specific disadvantages, high value agriculture and the state of European landscapes; (b) the improvement of water management , including the management of fertilizers and pesticides; and (c) the prevention of soil erosion and the improvement of soil management.

The basic measures concerning agri-environmental actions are presented below as mentioned in the Rural Development Plan of Cyprus.

**MEASURE 10:** Agricultural and climate measures

The most important measure in the RDP is Measure 10, since it is the Measure with the highest

budget (utilizes 24.7% of the Program's resources). At the same time, its contribution to the achievement of the Environmental objectives of the Program is very important. Measure 10 is a particularly complex Measure that includes the following sub-categories of actions:

Scheme 10.1.1: Exclusion of the use of chemical herbicides in specific crops

10.1.1A Exclusion of the use of chemical herbicides in deciduous trees

10.1.1B Exclusion of use of chemical herbicides in olives

10.1.1C Exclusion of use of chemical herbicides in citrus fruits

10.1.1D Exclusion of use of chemical herbicides in traditional landscape crops

10.1.1E & 10.1.1Z Exclusion of use of chemical herbicides and Branch net in the vineyards

Under this scheme, it is forecasting the application of any method of mechanical weed control (Soil treatment with a depth of at least 3cm – Cutting with a lawn mower or long scythe / blade – Weeding / weaning – Ground cover under the canopy of trees), the application of targeted lubrication according to the relevant table of main nutrients of the scheme, throughout the germination cycle and the complete exclusion of the use of herbicides. Also, regarding the vineyards, it is possible to choose the action of the pruning around the perimeter of the vineyard (1,5 meter) and soil conservation around the vineyard free of weeds using mechanical means (of limited depth, soil treatment, cutting with a lawn mower or long scythe / blade, weeding).

It is also planned keeping a farmer's file for the above cultivation practices, in deciduous crops (with the exception of almond trees and hazelnuts), olive, citrus, traditional landscape (almond trees, locusts, hazelnuts, agro-roses - Rosa damaskina) and vine.

The amount of aid for the implementation of the eligible actions is:

A. Deciduous – €500 / hectare

B. Olives – €300 / hectare

Γ. Citrus Trees – € 225 / hectare

Δ. Traditional landscape crops – €320 / hectare

E. Vineyards – €600 / hectare for the action of mechanical control

and €80 / hectare for the action of the branch clean

Scheme 10.1.2: Application of crop rotation in the cultivation of potatoes and cereals

10.1.2A Application of crop rotation in the cultivation of potatoes

As far as it concerns potatoes, a three-year crop rotation system is applied in two cycles (six years in total) with mandatory application of green lubrication, which includes alternation with one year potatoes, one year another annual crop (except solanoids) and one year of exclusive application of green lubrication. The choices of crops per year should be made, taking into account the Green Aid Scheme (crop diversification, ecological focus areas) where applicable. In case of winter potatoes, the applicant must maintain fallow for the rest of the year in order for the parcel to be eligible for the scheme and he must note in his application the cultivation of winter potatoes.

10.1.2B Application of crop rotation in the cultivation of cereals

As far as it regards cereals, a six-year crop rotation system will be applied. The beneficiary is obliged to submit a six-year crop rotation program, in two three-year cycles. The applicant can optionally use certified seed and he must submit a form within the collection period. Areas corresponding to the quantities of certified seed purchased will receive an additional subsidy. The choices of crops per year should be made, taking into account the Green Aid Scheme (crop diversification, ecological focus areas) where applicable. According to the scheme targeting, the crop rotation program is differentiated, by the region as follows:

B.1. The crop rotation program must include legumes or mixtures mandatory, green lubrication and cereals every three years in separate consecutive years, with the possibility of using certified seed each year by choice of the farmer. It is applied in every area of Cyprus.

B.2. The crop rotation program must include two years of legumes or a mixture without being harvested (until the end of July each year) and one year with cereals, every three years.

Specific restrictions apply to areas that can be included in scheme B2. The beneficiary must keep a record with every agricultural practice related to the application of the provisions of the Scheme.

The amount of aid for the implementation of the eligible actions is:

A. Annual aid of € 700 / hectare will be provided for the implementation of a three-year crop rotation system in the potato.

B.1. For the implementation of a three-year crop rotation system in cereals, aid of € 220 / hectare and € 45 / hectare for the purchase of certified seed will be provided.

B.2. For the implementation of a three-year crop rotation system in cereals without harvesting legumes, an aid of € 300 / hectare will be provided.

Scheme 10.1.3: Targeted agri-environmental actions in the cultivation of potatoes and citrus trees

Aim of the Scheme is the implementation of specific agri-environmental actions by the applicants, in two areas of intensive cultivation such as potato cultivation and citrus cultivation.

10.1.3A Targeted agri-environmental actions in potato cultivation (Integrated Production Management and management of tubers' remnants in Potatoes)

10.1.3B Targeted agri-environmental actions in the cultivation of citrus (Integrated Production Management and installation of insect traps in citrus)

The obligations arising for the farmer under the scheme are:

1. The applicant, in collaboration with an agronomist consultant, shall carry out a risk assessment for the environment and animal health, the suitability of the site for safe food production, and the development of a management plan setting out risk minimization strategies identified by the risk assessment.

2. The applicant, in collaboration with an agronomist consultant, conducts a risk assessment, sampling and analysis for any residues of plant protection substances, in products produced, focusing on the most active - important substances in each case. The determination of the analyses is done by a special consultant - agronomist.

3. Spraying is prohibited for the purpose of pest control. It is allowed in exceptional cases where the application of plant protection products will be done under the guidance of an agronomist.

4. Implementation of the practice of proper management of the remaining (waste) potato tubers, which appear after the end of the harvest and which form soil contamination outbreak by pathogens.

5. Keeping a farmer's record concerning the activities related to the agricultural practices

provided by the specific scheme.

6. Use of traps for mass trapping of enemies in citrus, in accordance with the regulations of the scheme.

It is noted that the control for actions 1, 2 and 3 in both crops, will be done by submitting a certificate and relevant certificate from an accredited certification body of Integrated Production Management.

The amount of aid for the implementation of the eligible actions is:

A. Potatoes – €350 / hectare

B. Citrus trees – €510 / hectare

Scheme 10.1.4: Maintaining environmentally friendly banana farming practices

The aim of the scheme is to maintain environmentally friendly agricultural practices in banana cultivation.

The obligations of the beneficiary concern the maintenance of the environmentally friendly practice, which concerns the removal of the previous year's plantation, the removal old leaves of the existing plantation, the deposition of the arising plant residues in the ground between the rows and the possession of the farmer's file. where the activities of the farmer related to the scheme will be reported.

The amount of the annual aid is € 800 / hectare

Scheme 10.1.5: Reduction of irrigation water requirements at aquifer level

The aim of the scheme is the replacement of irrigated areas with citrus trees, in their productive stage, with specific crops that have lower water needs in the communities within the aquifers of Polis Chrysochous and Western Mesaoria. The obligations arising for the farmer under the scheme are:

1. Replacement of irrigated areas with citrus trees which are in their productive stage, with specific crops that have lower water needs.

2. Rooting of citrus trees that are in their productive stage. The pieces must be irrigated exclusively by licensed drillings.

3. Planting of new crops with olive or locust or prickly pear plantations or other crops that will be specified by an official announcement.

4. Existence of a water meter on the plot of land.

5. Control of the amount of water consumed on the plot. In the case of olives and locusts, the amount of water should not exceed 4300 km / ha, while in prickly pear the 3000 sq.m. / ha. The maximum amount of water for new crops that will be specified by an official announcement, will also be specified in the official announcement.

6. Keeping a farmer's file where the activities of the farmer related to the scheme will be reported.

7. Use of an improved irrigation system, with maximum possible water savings according to the type of crop, in case that new crop is irrigable. Specifically, for the cultivation of olives and locusts, farmers can apply improved drip or sprinklers irrigation systems, while for the cultivation of prickly pear, farmers can apply improved drip irrigation systems.

The amount of aid for the implementation of eligible actions come up to € 400 / hectare.

Scheme 10.1.6: Protection of natural vegetation and landscape features, for biodiversity purposes and erosion reduction

The Scheme aims to reduce the effects that occur as a result of deforestation of natural vegetation (trees, shrubs, herbaceous vegetation) but also the destruction of landscape features (stone structures, dry boulders, waterfalls) for the purpose of extension of cultivation and of biodiversity and erosion control in natural / semi-natural ecosystems.

The obligations arising for the farmer under the Scheme are:

1. Felling and removal of foreign and invasive trees and shrubs from the eligible area adjacent to the parcels, during the period January - February (e.g. Acacia Salina, Robinia pseudo acacia).

2. Management in order to maintain the existing native trees and shrubs of the area and planting new ones in the eligible area adjacent to the plots according to the list of trees and shrubs of the scheme. Upon completion of planting they should be irrigated at least once. For each hectare of eligible area there should be 100 trees and / or shrubs of the native vegetation of the area.

3. maintenance of dry stones, masonry, burrows and wells in good and functional condition without the use of binders, in the selectable area adjacent to the parcels (maintenance of structure and consistency, maintenance of good condition of burrow openings and well openings).

4. Keeping a farmer's file where the activities of the farmer related to the Scheme will be reported.

The amount of aid for the implementation of eligible actions rises up to € 430 / hectare of tangential area.

Scheme 10.1.7: Maintenance of existing dry wells within agricultural parcels

The Scheme aims at the maintenance and preservation of the dry stones which are located inside or around the parcels and have been included in the database of CAPO (LPIS). The obligations arising for the farmer under the Scheme are:

1. The preservation of dry stones in the traditional way. The farmer should make small-scale damage repairs such as e.g. repositioning stones that have been moved due to heavy rainfall. It is emphasized that the use of concrete or other binders for the purpose of stabilizing the construction is prohibited.

2. Existing dry blocks should be located within or around the eligible parcels.

3. Keeping a farmer's file where the activities of the farmer related to the Scheme will be reported.

The amount of aid for the implementation of eligible actions rises up to € 180 / hectare for the cultivation of deciduous trees and the traditional landscape and up to € 100 / hectare for viticulture.

Scheme 10.1.8: Agri-environmental obligations for conservation and sustainable use in traditional vine varieties

The Scheme aims to preserve endangered crops with traditional vine varieties by providing incentives to farmers.

The obligations arising for the farmer under the Scheme are the maintenance of endangered crops with traditional vine varieties, the maintenance of a record (binding action without cost cover),

which will record the farming practices applied by the farmer, weed control and fertilization application.

The eligible varieties of traditional vines are the following: Maratheftiko (or Vamvakada) - Lefkada - Promara - Sportiko - Morokanella - Giannoudi - Flouriko - Cinnamon - Omoio). The traditional vine varieties are eligible for participation in the schemes 10.1.1E (Exclusion of use of chemical herbicides in the vineyards) and 10.1.1Z (Branched net)

The amount of aid for the implementation of eligible actions rise up to € 220 / hectare.

Scheme 10.1.9: Agri-environmental obligations for conservation and sustainable use in traditional animal breeds

The aim of the Scheme is to provide incentives for the conservation of endangered populations in traditional animal breeds. The traditional breeds are the indigenous (local) breed of cattle (Kypriaki cow), the local breed of sheep (Cypriot fat sheep) and the local breed of goat (Machaira goat). The obligations arising for the farmer under the Scheme are the maintenance and increase of the populations of endangered animals, as well as the maintenance of an updated file of animals with a list of animals bred in the unit and related to the specific Scheme.

The amount of aid for the implementation of eligible actions rise up to € 240 / livestock unit.

Scheme 10.1.10: Management of bee colonies in order to maintain harmonious coexistence with insectivorous birds

The aim of the scheme is to ensure the harmonious coexistence of insectivorous birds with bees, especially during migratory periods. The obligations arising for the farmer under the Scheme are:

1. It carries out appropriate beekeeping operations in order to maintain, throughout the Scheme, the initial number of bee colonies (declared during its inclusion in the Scheme), which in no case should be reduced below 20% or less than 20 bee colonies.

2. The maximum number of hives maintained per apiary should not exceed 100 hives (formation of a new apiary) throughout the year and throughout the implementation of the Scheme.

3. The minimum distance between apiaries of the same applicant, must not be less than 500 meters, for the period August - October each year.

4. The beekeeper should install a watering can in the apiary, at a distance of max 50 meters from the apiary during the period August - October, which he will keep functional. The watering can should consist of a plastic barrel with a cap (capacity of at least 100 litters), float for automatic water flow control, galvanized or concrete trough (with a minimum area of 0.2 m2 and a minimum depth of 10cm), floating materials (corks, Styrofoam, wood etc.).

5. During the period 01 August – 31 October of each year, the beekeeper should visit the apiaries at least once a week, in addition to the usual visits (13 times more than usual visits) to check the functional condition, clean the watering can and add / change drinking water

6. Keeping a beekeeper's file where the activities of the beekeeper related to the Scheme will be reported.

The amount of aid for the implementation of eligible actions rise up to € 8 / bee group.

Scheme 10.1.11: Environmental actions in Areas of HNV

10.1.11A Environmental Actions in areas of HNV – Cereals

Regarding arable crops of cereals, except maize, sorghum and millet, the obligations arising for the farmer are to prohibit a change of use or deforestation, to prohibit the expansion and consolidation of agricultural parcels, which is part of the scheme, until the end of July each year and the creation of areas that will cover 3% of the plot, where legumes will be cultivated and they will not be harvested until the end of July each year.

The amount of aid rise up to 110 € / ha of eligible cereals. The minimum eligible area for all cereal crops is 0.5 ha, while the minimum eligible area of an individual plot is 0.1 ha.

10.1.11B Environmental Actions in areas of HNV - Tree Crops

Regarding tree / perennial crops of olive, almond, locust and hazelnut, the obligations arising for the farmer are the prohibition of change of use or clearing (no aid is provided for the implementation of the action), the prohibition of extension and strengthening (no for the implementation of the action) and the complete exclusion of the use of chemical herbicides in the crop, throughout the year and mechanical weed control, by applying one or more of the following methods: tillage to a depth of at least 3 cm, mowing or long scythe / blade and weeding. In addition, the farmer must keep 10% of the area uncultivated at farm level or plot, during the period February

- September. The area is proposed to be maintained in places adjacent to surface waters, banks and dry rocks. Finally, during the period November - February, the farmer participating in the action is obliged to enrich the soil with compost incorporation, where the minimum acceptable amount is 12 m3 / ha. It is noted that the addition of 12 m3 / ha compost is not to replace the use of chemical fertilizers. The farmer may use other soil conditioners to meet the needs of his crop, taking into account that he must not exceed the maximum permissible concentrations of nutrients provided in the Starter Base.

The amount of aid is € 740 / ha for the cultivation of olives and € 760 / ha for the cultivations of carob, almond and hazelnut. The minimum eligible area for all permanent / perennial crops is 0.1 hectares.

10.1.11C Management of vegetation in natural pastures within the areas of High Natural Value.

Regarding the management of vegetation in natural pastures within the areas of High Natural Value, there is a prohibition on change of use or clearing, a prohibition on expansion and consolidation of agricultural parcels and a complete prohibition on grazing on the included agricultural parcels for a period of 15 months (every 15 months). commitment.

The amount of aid is € 290 per hectare of pasture.

Scheme 10.1.12: Voluntary program of integrated management of pests and diseases in wine and table vines.

The obligations of the farmer regarding the scheme 10.1.12 are:

1. Awareness of the biological condition of the plantation: Laboratory virological control of the vineyard for awareness of the biological condition of the plantation. 100 stumps / ha should be tested for GLRV-1 and 3 GLRV-3.

2. Management of the population of Eudemida (Lobesia botrana): Use of appropriate mating disruption, to keep the population of Eudemida low, throughout the growing season. the beginning of flowering (early March) until the end of the harvest period. The minimum number of traps / ha must be 500, throughout the duration of the above interval.

3. Maximum permissible number of plant protection product applications: The maximum permissible number of applications with conventional plant protection products and sulfur powder

is 6 and 4 for table and wine varieties, respectively, throughout the growing season. The restriction does not apply to plant protection products that are allowed to be used in organic farming, except for sulphur powder.

4. Use of certified propagating material: if it is required stump replacement on existing plantations, it must be used a certified propagating material or a material falls into the 'Standard' category. In the case of the 'Standard' category material, the farmer must provide, within the year of the replanting, laboratory results from the Department of Agriculture or other authorized body, proving that the material is free of the following viruses: GLRV-1 and GLRV-3.

5. Controlled use of nematocide: The use of conventional nematocide is permitted only after laboratory soil tests have been performed to determine the presence or absence of nematodes of the genus Xiphinema, which are carriers of viruses or other phytoparasitic nematodes, and the date of application of the nematicide.

6. Prohibition of the use of conventional plant protection products that are characterized as "very toxic": The use of conventional plant protection products, which are characterized as "very toxic" are not allowed according to the Law on Chemicals of 2010.

7. Mandatory application of winter spraying with broad-spectrum fungicide and insecticide: The application of a winter spraying with a licensed copper preparation and broad-spectrum insecticide achieves the conservation of populations of the overwintering and overwintering seasons.

8. Prohibition of combination of plant protection products: It is prohibited the combination of plant protection products in any application or spraying. Please note that this restriction does not apply to plant protection products that are recommended to be mixed with preparations containing oil or adhesives or other auxiliary substances. In addition, the combination of two pesticides is allowed, meaning that one has fungicidal action and the other has insecticidal action.

9. Limiting the re-use of pesticides of the same active substance or active substances with the same mode of action:

   a. The use of an active pesticide may not be used more than twice per growing season.

   b. It is not allowed to use active substances of pesticides with the same mode of action more than two applications per growing season.

The amount of aid rises up to € 325 / ha for wine varieties and € 565 / ha for table varieties.

Scheme 10.1.13: Application of fire protection treatments in woodland areas cultivated with cereals.

The obligations of the farmer regarding the scheme 10.1.13 are the additional cultivation (in addition to the autumn cultivation which is done for the control of the wild vegetation and the preparation of the plot for sowing) of the soil at the end of the grain harvest during the period June - July depending on the altitude, for the incorporation of crop residues in the soil.

The amount of aid is € 54 / ha for cultivated areas with cereals and the minimum eligible area is 0.2 ha. The action does not include plots of land already included in the actions "10.1.2: Application of crop rotation in potato and cereals" and "12.1.1: Maintenance of unharvested production in Natura 2000 agricultural and forest areas and cohesion areas".

Apart from Measure 10, which is the main body of agri-environmental actions in Cyprus, an important role is played by agri-environmental measures 11, 12 and 13, which are analysed below.

**MEASURE 11:** organic farming

Measure 11 includes the following two schemes:

Scheme 11.1 Conversion from conventional to organic farming

Scheme 11.2 Development of organic farming

The purpose of Measure 11 is to provide support to farmers who undertake, on a voluntary basis, the shift to organic farming practices and methods as defined in Regulation (EC) No. 834/2007. The commitments under this Scheme are undertaken for the period of conversion from conventional to organic farming, as defined in Regulation (EC) 834/2007 governing organic production and labelling of organic products. The submission is made during the collection period of the single application and a six-year crop rotation plan (three-year cycle) is maintained for the annual crops (excluding cereals, legumes and general livestock plants). The 6th year will be observed in case the commitment is extended. Eligible cultivation groups for crop production: Citrus, Deciduous, Acorns, Olives, Carobs, Palm trees, Legumes, Bananas, tropical and subtropical plants, Avocados, Vineyards. Berries and other deciduous shrubs, Stevia, Shrubs. Vegetables, Potatoes, Legumes and peanuts. Aromatic and Medicinal plants. Cereals, legumes for livestock production and perennial livestock

plants (only for the 2015 and 2016 notices). Eligible groups for animal production: Permanent pastures for sheep and goats.

The transition from the Conversion Scheme 11.1 to the Organic Practice Conservation Scheme 11.2 will be done automatically. The conversion period is 3 years for perennial crops and 2 years for annuals.

**MEASURE 12:** Aid under Natura 2000 and the water framework directive

Action 12.1.1 maintain harvest-free production in Natura 2000 agricultural and forestry areas and cohesion areas

The aim is to maintain unharvest production in annual and arboreal crops, to meet the needs of the species (feeding and nesting) listed in the Annexes to Nature Guidelines (92/43 / EEC and 2009/147 / EU). According to action 12.1.1., the production on annual crops should be kept unharvest until the end of July. The farmer who cultivates annual crops e.g. cereals, hay and vetch should leave part of the production, which will amount to 10% of the holding area, unharvest. In addition, the farmer taking part in action 12.1.1 must maintain unharvest production on perennial crops, excluding citrus trees, bananas, almonds, walnuts and hazelnuts. The fruit will remain on the trees throughout the year. In perennial / tree crops (fruit trees and vines), unharvest production should be maintained at a rate of 10% of the area of the holding. More specifically, the following sub-measures are distinguished:

12.1.1A: Maintain unharvest production in perennial crops throughout the year. The applicant should keep his production uncultivated at 10% of the area declared for the Scheme and belong within the Natura 2000 areas

12.1.1B: Maintain unharvest production on annual crops until 31 July. The applicant must keep his production uncultivated at 10% of the annual crop area declared for the Scheme and belong within the Natura 2000 areas

12.1.1C: Maintain unharvest production on perennial crops throughout the year. The applicant should keep its production uncultivated within 10% of the area declared for the Scheme and falls within the 62 communities designated as cohesion areas. A list of communities can be found in the CAPO newsletter. In case the area of the community falls within the Natura 2000 area, then these areas should be declared in Scheme 12.1.1A.

The action will be implemented in every areas of Natura 2000 network that include agricultural land, as well as in specific forest and other areas, most of which are adjacent to or in contact to areas of the Natura 2000 Network, according to the relevant map included in this Action.

For the maintenance of unharvest production in annual crops an annual aid of € 80 / hectare will be provided, while for the maintenance of unharvest production in perennial crops an annual aid of € 160 / hectare will be provided.

Action 12.1.2 Pasture Management

The goal is not to graze the natural vegetation during the flowering and fruiting stages, as it leads to degradation and low productivity of the pastures. Grazing is strictly prohibited from 15 February to 15 April each year on plots declared as permanent pastures. The Action will be implemented in the areas of the Natura 2000 Network: Akama Peninsula and Diarizos Valley.

The control of the Regime will be done in the aforementioned period for the next year of the announcement.

The annual aid amounts to € 145 / ha of pasture.

**MEASURE 13:** Aid for areas facing natural or other disadvantages

The Measure establishes an aid scheme for agricultural holdings in less-favored areas (mountainous areas, areas with natural disadvantages and areas with specific disadvantages), to partially compensate for the economic losses incurred in carrying out agricultural activity in these areas.

The measure includes the following three schemes:

Scheme 13.1 "Mountainous Areas", where areas with an altitude of ≥ 800 meters or with an altitude of 00500 meters to ≤ 800 meters and a slope of ≥15% are selected

Scheme 13.2 "Areas with natural disadvantages", where areas are selected according to the existing RDP 2007-2013 list (until 2018) and

Scheme 13.3 "Areas with specific disadvantages", where there are selected areas from the Dead Zone, Mountain Areas that were not included in category A and areas from the Tillyria Tower Apartment

Finally, the following Forest Measures - schemes also contribute to the achievement of the objectives of the Fourth Priority:

**Scheme 8.4:** Rehabilitation of forest damage due to forest fires, natural disasters and catastrophic events

The Scheme aims at rehabilitation damage to forests and wooded areas due to forest fires and re-establishing forest vegetation through reforestation work in the burned areas. In addition, it is an incentive and offers support to local authorities and owners of burned private lands for rehabilitation of damage and reforestation in private burned areas but also to state bodies for reforestation of state burned lands.

**Scheme 8.5:** Investments that improve the sustainability and environmental value of forest ecosystems

Scheme 8.5 includes the following three Actions:

8.5.1 Investments to improve the value of forests as a public good

Investments in infrastructure for recreational activities and to improve public experiences in forests, as well as investments to improve the value of forests as a public good.

8.5.2 Actions and projects for the conservation and enhancement of biodiversity in forests

Removal activities of invasive species in forests and projects for the enhancement / conservation of biodiversity in forests.

8.5.3 Dilutions in dense clusters afforestation / reforestation to improve forest resilience

Dilutions aimed at improving the structure of forests created by afforestation and / or reforestation, increasing the amount of carbon stored in them and improving their resilience to climate change.

## 2.4 Assessment of the current status of regulatory requirements arising from national and European commitments

According to the final evaluation report of the RDP 2014 – 2020, there are some changes in the common framework indicators, which may affect the strategy of the RDP. These changes are

observed in the external economic environment, the developments in the agricultural sector and the environment of Cyprus.

More specifically, the changes in the external economic environment are mainly due to the decrease of population and the deterioration of the demographic composition, the reversal of the growing trend of population in rural areas, the significant improvement in labor market conditions with an increase in the employment rate and a decrease in overall unemployment by gender and age, then youth unemployment, which despite its decline, remains high, especially in sparsely populated rural areas, poverty reduction at national level and convergence of poverty rates between urban and sparsely populated rural areas and the significant increase in gross value added that comes mainly from the tertiary and secondary sectors.

With regard to developments in the agricultural sector, it seems to have a significant impact on the common framework indicators, the reduction in the number of employees and the annual work units offered in agriculture, the significant increase in labor productivity, which, however, continues to lag behind relatively to the EU average, the decline in labor productivity in the food industry, significant changes in farm structure with a reduction in the number of small-scale farms and an increase in the number of medium and very large agricultural land, the increase of used agricultural land, resulting from the increase of arable land and the reduction of both the volume and the value of exports of crop products that traditionally constituted the exportable agricultural products of Cyprus. Also, important factors influencing the indicators are the reduction of irrigated areas, the deterioration of the demographic composition of those employed in agriculture, and the increase of livestock, milk and meat production. The significant structural change in Cyprus is highlighted by increasing the importance of livestock production, the decline in crop production, and by the maintenance of the significant deficit in the agricultural trade balance, but with a downward trend. In addition, the agricultural sector is affected by skills upgrade of those employed in the primary sector, the large increase in agricultural income, and also the maintenance of a very low degree of investment in agriculture.

With regard to the environment, the indicators of the common framework are changing due to the significant increase in agricultural land practicing low-intensity agricultural practices, the increase of the area included in the areas of Natura 2000 Network, the upgrading of the environmental status of agricultural habitats, the problematic water quality, in relation to the excess of nitrogen and phosphorus, the continuous reduction of fertilizers' use, the reduction of the production of

"agricultural" origin RES, but the increase of the production of "forestry" origin RES, the increase of the energy intensity in agriculture and a significant reduction in greenhouse gas emissions from agriculture.

The assessment of the environmental measures of CAP takes into consideration the complicated connection between policy measures, changes in agricultural practices and environmental ameliorations, as well as many other intervening variables, such as weather conditions, the repercussion of market trends and EU countries' variations in environmental conditions.

The collected data provide information on the EU's rural environment condition, the developments over time, the repercussion of farming on climate, natural resources and biodiversity, the performance of environmental measures of CAP, the accomplishment in reaching environmental measures targets and their broader repercussion beyond their stated objectives.

The weight given to the rural development program 2014 – 2020 for the environment and the mitigation of climate change is distinguished in the distribution of resources, since 53.5% of resources are allocated to environmental protection and climate change. In this way, is exceeded the requirement that at least the one quarter of Community funds will be allocated to actions with objective goals related to climate change. An extremely small percentage of around 5% is associated with mitigation of effects and contributes directly to the quantitative goals of Europe 2020 Strategy (increased RES participation, energy savings). Of the money that has been allocated today as sponsorships through the RDP 2014-2020, approximately 65% has been paid to actions aimed at reducing the impact of agriculture on the environment, as well as to aid to farmers operating in mountainous areas and areas with natural or other disadvantages, so as to preserve agriculture and face negative environmental impacts originated from its abandonment.

The contribution of the RDP is particularly positive in terms of enhancing biodiversity based on the positive impact of the program on rural bird populations, an environmental indicator of particular importance for assessing the protection of natural environment. In addition, providing aid to areas with natural disadvantages is an important barrier to curbing agricultural activity and preventing its abandonment, which could lead to soil erosion, rural landscape degradation and an increased risk of fires. The program has over time managed to significantly reduce the reduction of agricultural land in these areas, even if the macroeconomic environment continues to push for abandonment and further urbanization.

In addition, measures aimed at preventing groundwater and surface water pollution from agriculture have contributed to control nitrate pollution and the absence of other forms of agricultural pollution in groundwater and surface water from fertilizers and pesticides. On the other hand, an aggravating factor for water quality is the insufficient management of manure, as a result of the large increase in livestock. The risks to the environment and water quality become particularly serious by the increase of manure and the inability to control its deposition in the soil. An additional burden on the environment is the ammonia gas created in the stables by the decomposition of feces. These nitrogen compounds are released into the air to end up in the soil through the rain.

The agri-environmental measures are also called to deal with the over-pumping of water from agriculture, which is the largest water consumer in Cyprus with its percentage in the total water intake constantly increasing and shaping, in recent years at 75% of the total water used in Cyprus , although the irrigated area shows a marginally increasing trend and constitutes only 21% of the total agricultural land. This is possible through the financing of public works for the use of recycled water in agriculture. The replacement of water with recycled water will positively affect the underground aquifer in the area west of Nicosia, whose condition is characterized as unfavorable in terms of water absorption. The contribution of RDP to water management in agriculture is considered positive, but given the extent and importance of the problem, much more can be done both through respective public interventions and private investment, as water extraction leads Cyprus in the long-term water shortage, but also imposes very severe restrictions on Cypriot agriculture, mainly under the weight of the impacts of climate change.

More specifically, in Priority 4 (Restoration, conservation and strengthening of ecosystems related to agriculture and forestry) it is allocated 47.7% of the planned public expenditure of the Program, while the corresponding percentage of Priority 5 (Promotion of resource efficiency, etc. .) amounts to 5.8%.

Regarding biodiversity, emphasis is placed on the utilization of the following measures:

- Measure 10 (Agri-environment)
- Measure 11 (Organic farming)
- Measure 13 - Scheme 1 (mountainous areas)
- Measure 13 - Scheme 2 (disadvantaged areas)

- Measure 8 (Development and sustainability of forests)
- Measure 12 (Instructions for Natura 2000 and waters)

The forecasts for the areas of NATURA 2000 appear to take into account partially the proposals included in the SEIAS, as the conservation, protection and improvement of biodiversity in the protected areas of the European NATURA 2000 network is subserved by the measure 12 "Strengthening of Natura 2000 Network areas", lacking though measures to support farmers and foresters in the silvipastoral and agropastoral and agrosilvopastoral systems.

The individual measures that serve priorities 4 and 5 should be better targeted. Priorities 4 and 5 will determine the compatibility of the RDP with the sustainability objectives. More specifically, it is proposed that the environmental management of grasslands, will cover forest communities and communities, which are located close to Natura 2000 sites. In addition, it is observed that there is no reference to NATURA areas in other two measures, i.e. 10. Agri-environmental and 11. Development of organic production. This limits the possibility of synergies between the measures. However, there is provision for preferential eligibility in areas within NATURA 2000, which would be very useful to extend to areas of HNV, as well as to forest communities and communities within walking distance of the Natura 2000 areas.

The agricultural practices promoted by organic farming contribute to the improvement of soil and water quality, to the mitigation and adaptation to climate change as well as to the increase of biodiversity. This is achieved by banning the use of synthetic plant protection products and synthetic fertilizers, applying crop rotation techniques and allowing the use of organic fertilizers (eg manure and compost) that improve the structure of the soil and increase its organic content. Improving water quality through the application of organic farming practices is achieved by preventing the outflow of hazardous agrochemicals applied to the ground to the drainage basins. In addition, the fact that in organic farming, the maximum permissible amount of nitrogen from the spread of animal manure for plant nutrition is 17 kg per year. The reduction of carbon dioxide emissions is achieved through the recycling of organic materials, by-products of animal and plant origin and their input into plant and animal production. The rules of organic production encourage the above practices with the aim of restoring nutrients in the soil and in animal nutrition. The ban on the use of inorganic nitrogen fertilizers in organic farming, contributes significantly to reducing greenhouse gas emissions since when applied to the soil, significant amounts of ammonia are released. Organic farming is approached as a holistic production system, but some specific

incentives are lacking in order to achieve synergies between interrelated activities. For example, the regulation for the cultivation of livestock plants for own production of animal feed does not specialize in making it functional. Also, the strengthening of practices, such as the use of self-produced manure and green lubrication, would contribute to a more effective conservation of biodiversity, and to a further faithful implementation of the regulation.

In terms of conservation and protection of soil resources, soil management can be improved through the implementation of targeted agri-environmental measures for soil protection. While the measures proposed by the RDP cover a large area spatially and a wide range of crops, remains the reflection in relation to targeting, given the limited resources.

On the other hand, based on the identified problems related to water resources, there could be greater financial gravity in measures that directly concern the proper management and saving of water resources. For measures proposed by the Rural Development Program, such as the enhancement of organic production, the complete exclusion of the use of chemical herbicides, the implementation of a three-year rotation cycle and the Integrated Production Management, their contribution to the improvement of water quality is not sufficiently documented. More specifically, the effort to improve water quality by avoiding pesticides is based on the invocation of the "Biodiversity Strategy in Cyprus", while no reference is made to the objectives or obligations set by Directives 91/676 on the fight against nitrate pollution from agricultural sources and the Water Framework Directive 2000/60 and how the specific actions of the measure will contribute to achieving these objectives. Improving water management through the full implementation of Water Directive and introduction of pricing is one of the most important issues in terms of improving the efficiency of water resources. The problems that could create a delay in the implementation of every provided measure in Management Plans, forecasted in the Water Directive (drilling ban, low water pricing) are also highlighted. However, there is no provision for special measures to compensate producers for obligations and the consequent burden due to the implementation of the Water Framework Directive. The above omission creates a mismatch between the identified needs, priorities and proposed measures.

Greenhouse gas emissions could be reduced by boosting organic production. Specialized aid, as for example for the cultivation of livestock plants, aimed their own production of organic feed, as well as practices, as for example the use of self-produced manure, composting, green fertilization, the use of crop residues, etc. would contribute to a documented improvement of the carbon and

greenhouse gas balance in organic production. Regarding the promotion of sustainability in agricultural sector of Cyprus and in particular the reduction of greenhouse gas emissions, they are foreseen units for the utilization of agricultural residues such as pokalam, pruning branches and other plants for energy production, while no similar action is foreseen in agri-environmental measures.

Particular emphasis is placed on eliminating the use of herbicides as the main enhanced practice of agri-environmental measures. By adopting practices that reduce soil and water pollution from chemicals such as herbicides, they help protect soils and preserve biodiversity, prevent fires and desertification, and improve the carbon dioxide balance produced by agriculture. The main objective of the measure is to reduce the phenomena described above by completely eliminating chemical herbicides and replacing them with mechanical weed control. In addition, the mechanical control of weeds contributes significantly to the protection of soils and the maintenance of their fertility, mainly due to the increase in the concentration of organic carbon in the surface layers of these soils. In addition, by preventing the presence of dry weeds in the soil, a reduction of greenhouse gas emissions (NO2 and CH4) is achieved, due to the reduction of fires and harmful gases released into the atmosphere during the fire. The proposed action reduces the presence of dry vegetation in the orchard soils, which is observed during the use of herbicides, since the weeds are incorporated into the soil, while saving organic substance. In addition, due to the reduction of the use of agrochemicals (herbicides), a positive balance of carbon dioxide emissions is expected, indirectly, through the reduction of emissions from their preparation and application on the farm. Although the contribution to focus areas, priorities and identified needs is large, it may create uncertainty as it concerns the overall effectiveness of the program, at least in terms of achieving the environmental objectives.

There is also an omission in the activation of the possibility to create a system for advising producers, focusing on improving agricultural practices and land use to promote sustainability. It is highlighted in the international literature and practice, the need to create a system of advice, especially for the adoption of practices that enhance sustainability. The current advisory structure does not cover adequately the shift to agricultural production, which is based on reducing environmental impact on the one hand and innovation on the other. This fact may also be responsible for the low participation of farmers in investment activities.

The promotion of a new development model for Cyprus in combination with the increased

requirements of CAP and Europe 2020 Strategy, regarding the integration of innovation, the contribution to the confrontation of climate change and the rational management of resources, require the substantial restructuring of the agricultural applications department. As it concerns the improvement of the providing advisory system's capacity, all the implementing bodies could be utilized, as well as the National Agricultural Network, with more active participation in relation to the current period through the organization of workshops and training seminars in selected groups of beneficiaries.

Through the SWOT analysis of the last approved RDP 2014 – 2020, the strengths and weaknesses have been identified, as well as the opportunities and risks for each of the six thematic priorities. Below, they will be presented the results arising from the fourth priority of the RDP 2014 – 2020, to which contribute agri-environmental measures, based on regulation 1305/2013 and the resulting conclusions will be analysed.

Priority 4 measures, and in particular the restoration and conservation of biodiversity, provide the opportunity to alleviate the weakness associated with the non-institutionalization of areas of high natural value, and to eliminate the threat of delays in the implementation of Management Plans in the areas of NATURA 2000 and from the delay in the identification of the areas of High Natural Value. In addition, by improving water management, it is possible to alleviate the weaknesses associated with important livestock farms with lack of wastewater management facilities, with high consumption of groundwater resources, and to eliminate the threat posed by the intensity of phenomena of water scarcity due to climate change. In addition, by improving soil management, it is possible to alleviate the weakness associated with the abandonment of agricultural land in mountainous areas and to eliminate the threats associated with non-grazing measures, continuous abandonment of agricultural land and non-prohibition of drilling as well as limited interest in participating in agri-environmental measures. Therefore through this priority, it is expected to improve critical factors related to biodiversity conservation, water quality and prevention of soil degradation.

The measures of the 5th Priority, and in particular with the increase of the efficiency of the water use in agriculture, give the possibility to mitigate the weaknesses observed from the limited use of closed hydroponics systems in greenhouse crops and the limited use of Integrated Information Systems in the management of water, as well as to eliminate the threats expected from the delay in the implementation of the Management Measures procured in the Water Framework Directive. In

addition, by increasing the efficiency of energy use in agriculture and food processing, it is possible to alleviate the weakness observed by the limited interest in the installation of RES systems in agriculture and agri-food sector and to eliminate the threat posed by the absence of investment interest in implementing investments in agricultural and agri-food sector. Also, by facilitating the supply and use of RES by-products, waste, residues and other raw materials other than food for the purposes of bio-economy, and reducing nitrogen oxide and methane emissions from agriculture, it is possible to alleviate the weaknesses coming from the absence of agricultural waste management and recycling systems, and the increase in energy consumption in agriculture and food industry, as well as to eliminate the threat posed by the lack of investment interest in the implementation of investments. Finally, by promoting carbon sequestration in agriculture and forestry, it is possible to mitigate the weakness created by frequent fires and eliminate the threat of increasing forest fires due to climate change. Through this priority, therefore, critical factors related to water quality, the prevention of soil degradation and the reduction of greenhouse gas emissions from agriculture are expected to be improved.

### 2.4.1 Thematic Priority 4: Restoration, conservation and enhancement of ecosystems dependent on agriculture and forestry.

The measures of the Rural Development Program that contribute to the achievement of the objectives of priority 4 are Measure 1, Measure 10, Measure 11, Measure 12, Measure 13 and Measure 16, with schemes 1.1, 1.2, 1.3, 10.1. 1A, 10.1.1B, 10.1.1.C, 10.1.1.D, 10.1.1.E, 10.1.1.G, 10.1.2A, 10.1.2B, 10.1.3A, 10.1.3B, 10.1.4, 10.1.5, 10.1.6, 10.1.7, 10.1.8, 10.1.9, 10.1.10, 10.1.11A, 10.1.11B, 10.1.11C, 10.1.12, 10.1.13, 11.1, 11.2, 12.1. 1, 12.1.2, 13.1, 13.2 and 16.1 respectively.

The main strengths of priority 4 are analysed below. First of all, the increased percentage of protected areas and forests and the existence of traditional breeds (endangered local cattle) contribute to the restoration, conservation and strengthening of ecosystems that depend on agriculture and forestry. Furthermore, it is an advantage that in a significant percentage of UAA it is practiced low – Intensity agriculture, while in areas where traditional crops have been preserved (deciduous, vineyards), the shaping of the rural landscape is enhanced. Simultaneously, management plans for the habitats and species have been made for the SCIs, except area of Alykes Larnaca. The exercise of agriculture – livestock in these areas is regulated through the management

plans. SPAs for Birds have also been declared. A total of 62 areas that are SCIs and SPAs have been included in the European Network NATURA 2000. An additional advantage is the identification and monitoring of nitrogen pollution sensitive areas and the implementation of restrictive measures aimed at improving the underground aquifers in these areas. Finally, it is particularly positive that the proportion of farmers using environmentally friendly farming practices is gradually increasing.

On the other hand, the main weaknesses regarding the restoration, maintenance and strengthening of these ecosystems are the non-institutionalization of areas of high natural value, the insufficient wastewater management facilities of the majority of livestock units, the high consumption of groundwater resources leading to land degradation and the abandonment of agricultural land and especially the abandonment of large areas of vineyards, in mountainous areas.

By implementing the measures of RDP, as well as a combination of the measures of the first (greening) and the second (agri-environmental) pillar, it is possible to promote the institutional framework for the identification of Areas of High Natural Value. In addition, investment measures can be utilized to implement collective investments related to water use and collective investments can be made by livestock units for the installation of water treatment systems. Finally, targeted agri-environmental measures can be implemented to protect the soil.

It is necessary to include actions aimed at further efficient management of water resources and groundwater aquifers, which have already been degraded due to the agricultural practices applied. Thus, there are included actions to expand agriculture and livestock, reduce the inflow of chemicals and pesticides in crops and proper management of waste from livestock units, especially in areas that have been identified as sensitive to nitrate pollution. It is particularly noted the inclusion for the first time of a special agri-environmental action regarding the reduction of irrigation water requirements at the aquifer level as well as the creation of infrastructure regarding the more efficient management of water resources.

The phenomenon of abandonment of agricultural land, especially in mountainous areas and land degradation is also an important factor. The shift to a more environmentally friendly agricultural practices, combined with the inclusion of agri-environmental measures to help, preserve and expand dry crops and vineyards, non-water-intensive crops and soil enrichment with organic matter, is expected to reverse or even reduce abandonment of cultivated areas in the mountains.

Aid to farmers in mountainous or other areas with natural or other disadvantages is expected to

make a significant contribution to rural conservation by encouraging the continued use of agricultural land.

Cyprus is characterized by large areas of natural vegetation and forests, which constitutes cores of conservation and protection of biodiversity. The creation of the legal framework that will govern areas of "Natura 2000" network in combination with the definition of HNV Areas can contribute substantially to the achievement of objectives of the thematic priority. The characterization of the cultivation of vines and deciduous trees as traditional crops with low inputs, can significantly contribute to the preservation of landscape features and biodiversity in these areas. The possibility of integrating targeted agri-environmental measures, regarding the conservation, expansion and reduction of inputs in these areas, can contribute significantly to the achievement of this objective. These actions will include actions for Natura 2000 areas and areas of the 2nd RBMP, since these areas largely coincide. It is noted that significantly greater financial weight is attached to actions related to agricultural land in relation to forest land, due to the absence of private forestry in Cyprus.

On the contrary, in case that strengths of priority 4 are not properly utilized and weaknesses of priority 4 are reduced, various risks lurk. The delay in the implementation of Management Plans in Natura areas and the delay in the identification of the High Natural Value areas pose significant risks, while the further reduction of the areas of traditional crops and the reduction of the number of traditional animal breeds incommode the maintenance of ecosystems. Significant risks can also be posed by the intensification of water shortages due to climate change and the failure to adopt measures for grazing. Finally, it is very difficult to implement measures to restore, conserve and strengthen ecosystems, which depend on agriculture and forestry, since the abandonment of agricultural land continues, drilling is allowed without restrictions and interest in participating in agri-environmental measures is limited.

# 3 CHAPTER: ANALYSIS OF THE MONITORING SYSTEM IN CYPRUS

## 3.1 Introduction

Directorate-general for agriculture and rural development in cooperation with several stakeholders launched in 2010 the monitoring and evaluation framework of CAP 2014 – 2020. Within DG AGRI and in on-going consultations with the Member States, that were taking place in various circumstances (RDC, Expert Committee on Evaluation of Rural Development Programmes, dedicated Expert Groups on Monitoring and Evaluation), every subject and element of CAP was discussed , in order to conclude to agreements. After the adoption of the basic CAP legislation, the compulsory components of the framework were integrated into implementing processes, including as well several indicators, which will be observing the performance of the policy.

In general, monitoring and evaluation are taking place to control the degree of success of the objectives set by the policies and initiatives and to suggest proposals for future improvements.

Their results contribute to:

- Opportune and relational recommendations to decision-making and contributing to the setting of political priorities.
- Organisational learning: the assessment's outcomes could result the quality improvement of a progressing process of intervening and also they could be used developing, implementing and designing policies.
- Ameliorating the conformity to the law, transparency, responsibility and establishing the added value of EU action.
- A more productive resource allocation between intervening actions, individual components of a defined action, or activities. The outcomes of monitoring and evaluation constitute fundamental elements to communicate substantiated decisions concerning effectual expenses on policy measures.

Monitoring is an on-going process of examining information and at the same time a systematic inventory of budget inputs and funded activities. Quantitative data is generated through monitoring and feedback is provided on the implementation of measures. In this way, monitoring facilitates the

correction of deviations from business and specific objectives and contributes to the account of public expenditure, while providing valuable information for the management of programs. The purpose of monitoring is to demonstrate progress in implementing policy. Developments in agricultural markets, rural development and use of CAP resources are currently monitored through a variety of data, sources and instruments, such as the CMES, the CATS and the various notifications and reports forwarded by the Member States to the Commission.

In order to enable proper monitoring and evaluation, the policy objectives must be linked to the planned measures. In this context, the general objectives of CAP are broken down into specific objectives, some of which are common to income and market support (pillar I) and rural development (pillar II), while others are linked to either pillar I, or with Pillar II. The means of Pillar I contribute to the specific objectives and, ultimately, the general objectives of CAP.

The evaluation is a complementary work of monitoring and implies an evaluation of the interventions in relation to the results, the effects and the needs to be met. It is a systematic tool that provides evidence for decision making and improves efficiency, usefulness and efficiency. Evaluation contributes to transparency, learning and accountability, while at the same time allowing lessons to be learned for the future about what works, in what cases and for what reason. The purpose of evaluations is to contribute on planning interventions, helping the efficient allocation of resources, improving the quality of the interventions and reporting the achievements of interventions (Performance - Report - Efficiency - Transparency). The purpose of evaluations is to provide useful and timely conclusions and policy recommendations.

This chapter will first refer to the European Union's programs, systems and bodies responsible for implementation, law enforcement and supervision, and will present the Common Monitoring and Evaluation Framework of the European Commission, as well as the JRC. Then, it will be analysed the monitoring and evaluation system applied in Cyprus regarding the application of the CGAP, it will be reported the responsible bodies and it will be described the framework of the Cyprus monitoring system and of the cross-compliance rules. In addition, there are listed the indicators, which are part of the monitoring and evaluation framework and finally, it is made a summary of the results of the monitoring and evaluation framework for the period 2014-2020.

## 3.2 European Union programs, systems and bodies responsible for implementation, law enforcement and supervision

The existence of inspection systems and the effective execution of inspections constitute a deterrent to environmental violations, as they give the authorities the power to detect infringements and enforce environmental legislation by imposing penalties or otherwise. Inspections are thus a necessary link in the regulatory chain and an effective instrument for the consistent implementation and enforcement of Community environmental legislation throughout the Community and in order to avoid distortions of competition.

There are currently large differences in the inspection systems and mechanisms of the Member States, not only in terms of possibilities for carrying out an inspection, but also concerning the scope and content of the tasks undertaken, the tasks to be undertaken and the existence of inspections in some Member States, a situation which cannot be considered satisfactory relatively to the objective of effective and consistent performance, practical implementation and enforcement of Community legislation on environmental protection.

The European Parliament adopted in 2001 minimum standards for environmental inspections to correct large differences between Member States as it concerns implementation. Member States shall impose effective, proportionate and dissuasive criminal sanctions in order to prevent serious environmental legislation, such as for example the illegal dumping of waste, the illegal release of substances into the air or their discharge into water and soil, and to enforce environmental legislation accurately. Community environmental law obliges Member States to impose conditions on certain emissions, discharges and activities. In the first instance, minimum criteria must be met for the organization and conduct of inspections in the Member States, for all industrial facilities and other undertakings and facilities, whose air emissions and / or discharges into water and / or disposal waste recovery activities are subject to authorization, approval or authorization under Community law.

Primarily, minimum criteria must be met for the organization and implementation of inspections in the Member States, for every industrial facility and other businesses and enterprises, whose air emissions and / or discharges into water and / or disposal waste recovery activities are subject to license, approval or authorization under Community law.

The EEA supports the development, implementation and evaluation of environmental policy and

provides independent information on the environment for those involved in developing, adopting, implementing and evaluating environmental policy, as well as for the general public. The European Environment Agency may advise Member States on the design, establishment and extension of the disposed systems for monitoring environmental provisions and may assist the Commission and the Member States in monitoring environmental provisions by providing support concerning the coordination of reporting.

EEA collaborating closely with Eionet and its 32 member countries collect data and generate assessments on a broad range of environmental topics, providing accurate and independent information on the state and prospects of the environment.

There is also the European Union's Earth Observation Program Copernicus, which was created to help responsible policy makers to take substantiated decisions and develop environmental legislation and policies. The Copernicus program responds to issues concerning land, sea, atmosphere and climate change. It provides information services, which are supported by satellite Earth Observation and in situ (non-space) data.

With regard to pollutants released into the air, water and soil, the E-PRTR provides key environmental data. The register is available to the public free of charge online.

At the same time, IMPEL is the European Union Network for the Implementation and Enforcement of Environmental Law. IMPEL is an international non-profit association of the environmental authorities of the European Union Member States, acceding and candidate countries of the EU, EEA and EFTA countries and potential candidates to join the European Community. The objective of the IMPEL Network is to generate a certain impulse in the European Union, in order to ensure a more effective implementation of legislation concerning the environment. It was created to promote law enforcement by providing a platform for responsible policymakers, environmental inspectors and responsible for law implementation in order to exchange ideas and best practices.

### 3.2.1 Minimum standards for environmental inspections

Inspections should be carried out taking into account the division of responsibilities in Member States between licensing and inspection services. In order to make the inspection system effective, Member States should ensure that environmental inspections work are planned in advance. On-site

visits constitutes an important element of environmental inspections. So as to draw conclusions from on the spot visits, reports should be prepared on a regular basis.

Environmental inspections concern every industrial plant and other enterprises, whose air emissions, discharges, waste disposal and recovery activities are subject to authorization, approval or authorization under Community law. "Environmental inspection" means the control and compliance with the relevant environmental legal requirements and the monitoring of the impact on the environment, in order to determine whether further inspections or enforcement measures are required, including the issuance, modification or revocation of any license, approval or authorization. In addition, it implies the performance of tasks that include on the spot visits, monitoring of the achievement of environmental quality standards, examination of reports, environmental control declarations, as well as control of individual inspections, evaluation of the activities and works carried out in the controlled installation, the relevant equipment and the adequacy of the on the spot environmental management and control of the relevant records kept by the administrations of the controlled facilities.

Member States should ensure that environmental inspections are aimed at achieving a high level of environmental protection and should be able to exchange relevant information where necessary. In order to promote best practice throughout the Community, Member States, in cooperation with IMPEL, may consider establishing a system, in which Member States prepare reports and provide advice on inspections and inspection procedures, taking into account the various systems and frameworks in which they operate.

Member States should ensure that environmental inspections are planned in advance, always having at their disposal an environmental inspection plan, which may be drawn up at national, regional or local level.

Environmental inspection plans should be prepared based on the legal requirements to be met, a registry of controlled facilities in the project area, a general evaluation of major environmental problems within the project area and a general assessment of the degree of compliance with legal requirements and information concerning any previous inspection work.

The plans of environmental inspections should specify the covering geographical area, which may be the total or part of the territory of a Member State, to cover a certain period of time, e.g. one year, to identify the specific areas or types of controlled installations they cover, to establish regular

environmental inspection programs, taking into account environmental risks, to anticipate and describe the procedures for emergency environmental inspections, in cases of complaints, accidents, incidents, in cases of non-compliance, as well as for purposes that allow authorization and finally to predict, where appropriate, the coordination between the various inspection authorities.

### 3.3 Common Monitoring and Evaluation Framework of the European Commission – JRC

The European Commission introduced the CMEF to evaluate the implementation of CAP and ameliorating its productiveness. The CMEF monitoring component provides basic information on the implementation of the CAP. The European Commission observe current developments in agricultural development, rural markets and CAP funds' use.

Additionally, for rural development (pillar II) there is a Common Monitoring and Evaluation System (CMES), which is part of the CMEF and established in:

- the common provisions regulation (Regulation (EU) No 1303/2013), which defines the common monitoring and evaluation elements for the ESIF; and
- the rural development regulation (Regulation (EU) No 1305/2013), which addresses the specificities for rural development programmes

Agricultural monitoring takes place at the JRC principally to detect, recognize and count the main crop production sites in Europe, assess production at the beginning of the year and control validity of farmers' EU subsidies. The European Commission utilize satellite geospatial information as a cost-efficient route of collecting the requisite monitoring data. The JRC encourages the implementation of CAP and its tools, such as GAEC standards and FAS. In addition, it conduces to the European Digital Agenda and the "Integrated Industrial Policy for the Globalisation Era" concerning the environmental observations sharing and standard setting. The JRC pay particular attention to anticipate and respond to the needs in progress, linked with agricultural monitoring.

JRC acts indicated various innovative developments such as CwRS, which is implemented applying Satellite Remote Sensing, the Digital LPIS and parcel area measurement applying GNSS, GPS parcel measurements, which are implemented applying a satellite navigation system that places autonomous data associated with a particular location with catholic coverage.

The JRC provides scientific and technical support for the IACS implementation, cross-compliance implementation and information management linked to the CAP regulations. The expertise developed within the JRC integrates research in and techniques used for carrying out statistics, image processing and interpretation (from satellite or air-borne media), GIS management and web-based information technology, geomatics and GPS (orthophotos, large-scale mapping, parcel measurement), standardisation and quality control.

LPIS was designed as the main instrument for the implementation of the CAP's first pillar, whereby direct payments are made to the farmer once the land and area eligible for payments have been identified and quantified.

The JRC participates in the standardisation processes in order to increase the interoperability of the spatial data through an LPIS core model, and supports the development of user-friendly applications for data documentation. Furthermore, it supports EU Member States by providing guidelines on the production of orthoimagery. The JRC adapts newly developed methodologies, practices and templates to help improve the LPIS and IACS – GIS applications. The JRC contributes to the standardisation processes by developing and harmonising LPIS control methods for checking CAP claims. It also provides the EU Member States with working documents, training courses and consultation services, and helps them verify the performance of their systems by implementing a Quality Assurance framework. The JRC is developing an LPIS Quality Assurance web portal and will integrate consolidated guidelines on its MARS WikiCAP website.

The JRC promotes the use of Remote Sensing and GIS in the implementation, management, and monitoring/control of GAEC. It also works toward the optimization of the definition and control of GAECs through the exchange of best practices, and supports the development and promotion of methods using traceability, quality, certification and record-keeping at farm/parcel level.

The JRC also works in support of low-carbon farming practices. It contributes to the design of effective low-carbon farming measures in the EU to help adapt to increasing levels of CO2 and to reduce the effect of agriculture on greenhouse gases levels, while ensuring sustainable production.

The JRC helps the European Commission and EU Member States to understand how agriculture and the environment are interlinked by providing scientific knowledge gained from geo-spatial and modeling-based assessments.

### 3.4 Monitoring and evaluation system applied in Cyprus regarding the application of the Codes of Good Agricultural Practice

A new monitoring and evaluation framework has been set up in the context of CAP. It will provide administrations, as well as all those interested in agriculture and rural development, with basic information on the implementation of the CAP, its results, and its implications. It will quantify the actions in various Member States, describe their achievements, point out the most effective means and verify the extent to which the objectives have been achieved.

The results of monitoring and evaluation provide valuable information that can be used for a variety of purposes. More specifically, these results provide a solid basis for analysis for future policy planning, enabling an understanding of the effectiveness of the measures and interventions, as well as the achievement of the objectives set. In this way, they support policy developments and at the same time help define policy and program objectives, and afterwards they ve been used to measure how these objectives are being implemented in the long term. Finally, they contribute on accounting public expenditure and, therefore, they have a key role in responding to citizens' concerns and questions about the use of taxpayers' money.

With the 2013 CAP reform, the use of the Land Recognition System (LPIS) became mandatory. LPIS is based on aerial photographs and satellite images that are corrected to avoid geometric distortion ("ortho-rectified"). Paying agencies, in order to cross-check every area submitted for aid, use LPIS to verify that only eligible agricultural lands are receiving financial support and only once for a specific agricultural area. Due to the sparse frequency of updating LPIS images (almost every 3years), paying agencies cannot consult them to verify the activities that take place on the plot during the year (planting, harvesting, mowing, etc.) and they have to perform on-site inspections, which are time consuming, costly and provide a one-time record of the situation on the parcel.

Therefore, commission developed an inspection using satellite images, which are taken at different times during the year and come from individual providers, such as SPOT and PlanetScope. This kind of inspection is called check with remote sensing and is less costly, while it requires an operator in order to interpret photos by using computer assistance.

Also, within the monitoring framework, Copernicus Sentinel 1 and 2 satellites offer free high definition images. According to the ESA, the Commission and experts, satellites have the potential to change radically the geolocation technology concerning CAP monitoring, since they offer high

spatial resolution and high frequency (a new image is available every 5 days with a spatial resolution of 10 m/pixel) and produce comparable data over a long period of time, with high calibration quality. Due to the frequent imaging of Sentinel 1 and 2 satellites, the automated processing of data time series throughout the growing season makes it possible to identify crops and monitor certain agricultural practices on individual plots (such as plowing, mowing, harvesting).

The use of new technologies to simplify IACS is encouraged by the Commission, which, in June 2017, has proposed legislative changes that allow Member States to implement "monitoring through controls". This approach uses automated procedures based on Copernicus Sentinel data and also allow the use of other new technologies, such as drones and geotagged photographs or data collected from other satellites, as additional evidence for compliance control under the CAP.

Sentinel data are not suitable for measuring the area of a plot. Therefore, paying agencies measure the area of the plot in LPIS, which uses high-definition spatial images. Therefore, before switching to follow-up checks, the quality of the paying agency's LPIS must be ensured in terms of both the accuracy of the eligible area entered and the frequency with which it is updated.

As part of the monitoring approach, data useful for smart farming are generated (use of modern technology to increase the quantity and quality of agricultural products), which can bring economic benefits to farmers. For example, satellite imagery can provide information on nitrogen content or soil stress due to drought, which can be used to optimize fertilizer application or irrigation, reduce farmer costs and reduce negative environmental consequences of agricultural activity.

### 3.5 Monitoring system operators

The monitoring system requires the participation and activation of several factors in Cyprus, such as Ministries, managing authorities, paying agencies and Commission services with various responsibilities.

With regard to Rural Development Measures (Pillar II) and in particular the implementation of the cross-compliance rules and the codes of good agricultural practice, the evaluations are carried out by the State of Cyprus, while the summary report of these evaluations at European Union level are carried out under the responsibility of Monitoring Committee services.

The Monitoring Committee is an institution provided by articles 47-49 of the EU Regulation. 1303/13, articles 73-74 of the EU Regulation. 1305/13 for the support of rural development by the EAFRD and article 11 of the Delegated Regulation 240/14 and monitors the quality of implementation of the Rural Development Program in collaboration with the Managing Authority. More specifically, in accordance with Article 49 of EU Regulation 1303/13, the Monitoring Committee meets at least once a year and reviews the implementation of the Program and the progress towards the achievement of its objectives. In this regard, it examines the financial data, the common and specific indicators of the program, but also all issues that affect the performance of the program, including performance reviews. In addition, the Commission shall issue an opinion on any modification of the proposed by the Managing Authority program, if deemed appropriate and may submit comments to the Managing Authority on the implementation and evaluation of the program, including actions related to the reduction of administrative burdens of beneficiaries.

In addition, the Monitoring Committee, in accordance with Article 74 of EP 1305/2013, gives an opinion within four months of the decision approving the program, regarding the selection criteria for the funded operations, which can be revised according to the needs of the program and at the same time examines the activities and performance related to the progress of the implementation of the program evaluation plan. It also reviews actions in the operational program, which comply with the ex-ante conditions, which fall within the remit of the managing authority, and is kept informed of actions related to the compliance with other ex-ante conditions. The tasks of the Monitoring Committee include its participation in the national agricultural network in order to exchange information on the implementation of the program and to review and approve the annual implementation reports.

The Monitoring Committee of the Rural Development Program is exercised by the respective General Director of the Ministry of Agriculture, Natural Resources and Environment, in his capacity as head of the Managing Authority of the Rural Development Program 2014 - 2020.

The monitoring committee of a program shall consist of representatives of the competent authorities of Cyprus and intermediate bodies and representatives of the partners referred to in Article 5. In general, the composition of the monitoring committee of a program, according to the European Territorial Cooperation Objective, is agreed by the Member States participating in the program and the third countries in case they have accepted the invitation to participate in the cooperation program. The monitoring committee shall include representatives of the Member

States and third countries concerned. The monitoring committee may include representatives of the EGTC, which may include related actions within the program area.

The Monitoring Committee of the RDP of Cyprus is composed, among others, of the representatives of ministries, departments and services, the representatives of payment authorities, the representatives of research and academic institutions, the representatives of associations of local authorities and the representatives of economic and social partners. More specifically, members of the Monitoring Committee with the right to vote are the following representatives of the respective bodies:

1. General Director of the Ministry of Agriculture, Natural Resources and Environment

2. Head of RDP Managing Authority

3. Representative of the Department of Agriculture
4. Representative of the Ministry of Finance

5. Representative of the Directorate-General for European Programs, Coordination and Development

6. Representative of the Ministry of Energy, Trade, Industry and Tourism

7. Representative of the Ministry of Interior

8. Representative of the Ministry of Justice - National Mechanism for Women's Rights

9. Representative of the Cyprus Agricultural Payments Organization

10. Representative of the Department of Forests

11. Representative of the Department of Environment

12. Representative of the Department of Water Development

13. Representative of the Cyprus Tourism Organization

14. Representative of the Institute of Agricultural Research

15. Cyprus University of Technology

16. Representative of the Department of Urban Planning and Housing.

17. Representative of the Cyprus Chamber of Commerce and Industry

18. Representative of the Federation of Employers and Industrialists

19. Representative of the Union of Municipalities of Cyprus

20. Representative of the Union of Communities of Cyprus

21. Representative of the New Agricultural Movement

22. Representative of the Union of Cypriot Farmers

23. Representative of the Panagrotikos Association of Cyprus

24. Representative of Panagrotiki Union of Cyprus

25. Euro-Agricultural Representative

26. Representative of the Federation of Environmental and Ecological Organizations of Cyprus

27. Representative of the Cyprus Agricultural Association

28. Representative of the Local Action Groups

Representatives of the European Commission participate in the meetings of the Monitoring Committee as non-voting observers, but in an advisory capacity. Representatives of non-governmental organizations and other stakeholders, as well as experts in economic, technical, social, scientific and related matters, may also be invited as non-voting observers.

The monitoring and evaluation of the Program is responsibility of the Managing Authority. The Implementing Units and the Paying Agency will provide all the necessary data.

The Managing Authority of the Rural Development Program is the Ministry of Agriculture, Rural Development and Environment, which is responsible for the management and implementation of the Rural Development Program in an efficient, effective and correct manner. Ensures that the actions selected for funding comply with the criteria set out in the Rural Development Program and establishes a mechanism for collecting reliable financial and statistical data on the implementation and indicators of the Common Monitoring and Evaluation Framework. In addition, it monitors the implementation of various measures to be taken by the competent implementing authorities, sends all the standard files required to the Monitoring Committee, prepares and submits, the Regulations,

Evaluation Reports, the annual progress reports and the annual progress reports and the final report after its approval by the RDP Monitoring Committee. A key priority of the RDP Managing Authority is also the establishment of internal control measures for sound financial management and the adoption of measures for necessary adjustments or possible corrections. Managing Authority, at its own risk, may delegate responsibilities to other Services. Important components of Managing Authority constitutes the Monitoring, Evaluation and Financial Management Unit and the Audit, Compatibility and Transparency Unit. The Monitoring, Evaluation and Financial Management Unit mainly takes care of the preparation of the Annual Progress Reports, their submission to the Monitoring Committee and then to the European Commission, as well as for the collection of the necessary data for the assessment of the financial needs. Receives and processes monitoring and payment data, presents information reports and participates in the relevant bodies of EU Commission on issues of financing, budget, clearance of accounts and control of accompanying measures and Rural Development measures (Committee on Agricultural Funds). It also ensures the effective implementation of the Community Monitoring and Evaluation Framework and participates in its modification / improvement processes by participating in the EU Special Committee of Experts. Finally, it proposes and promotes financial modifications of the Program based on the results of Monitoring and Evaluation.

The Control, Compatibility and Transparency Unit mainly monitors the implementation of the measures, monitors the implementation of the current legislation and elaborates proposals for improvement. At the same time, it carries out, from time to time, on-site physical checks at the secondary level to check the correct implementation of the Program.

The Department of Agriculture implements with independence and full technocratic competence, the agricultural Legislative and regulatory acquis which falls under its competence, satisfying on the one hand the relevant obligations of Cyprus to the EU and ensuring, on the other hand, the production of quality upgraded and safe agricultural products and food for the benefit of both producers and consumers.

The Coordinating Control Body for compliance with the requirements of Cross Compliance is the Cyprus Agricultural Payments Organization. The Cyprus Agricultural Payments Organization acts as the Paying Authority for the RDP 2014-2020 and is responsible for managing and controlling the expenditures of the RDP 2014-2020. It is an independent legal entity that does not belong to any Ministry or Department of Government. The Cyprus Agricultural Payments Organization operates

as an autonomous public organization, with its legislation providing it with considerable flexibility to be able to work quickly and efficiently, meeting the strict standards and timeframes set by the EU.

The Organization is structured on the most modern standards of organization and management, applies modern and specialized working methods and relies significantly on the automation and computerization of processes, thus ensuring the efficiency of its work. CAPO has the duty, power and competence to take every appropriate action to ensure the implementation of its purpose and the correct application of the Law on the Organization of Agricultural Payments 64 (I) / 2003, the regulations that define the necessary procedures for the payment of agricultural payments to beneficiaries, and the related Community acts. It is an Accredited Paying Agency, which provides sufficient assurance that: (i) the eligibility of applications and the procedure for granting aid and their compliance with Community rules before the payment order is checked, (ii) the payments made are accurately and completely recorded in the books, (iii) the controls provided for by Community law are carried out (iv) the required documents shall be submitted within the time limits and the form provided from Community rules, (v) documents are accessible and maintained in a way that ensures their completeness, validity and legibility over time, including electronic documents within the meaning of Community rules.

In addition, the Managing Authority and the Paying Agency delegate part of their responsibilities to Implementing Units, which collect the submitted applications, evaluate the applications, carry out the required checks and submit requests for payment of the beneficiaries to the Paying Agency. In order to ensure the smooth implementation of the measures of the RDP 2014-2020, have been defined as responsible Control Bodies, the departments of Agriculture and Environment of the Ministry of Agriculture, Natural Resources and Environment of Cyprus, the Veterinary Services and the Prey Foundation. The Control Bodies in consultation with the CAPO prepare checklists on the basis of which they carry out OTSC for the implementation of cross-compliance. The controls for the observance of the Multiple Compliance by the CAPO are carried out by the On-Site Inspection Unit (Classical On-Site Inspections and Remote Sensing). Depending on the agreements, whole instructions or part of them are controlled by the Control Bodies.

The structure and actions of the Public Administration Authorities in Cyprus are clear indicators of effectiveness. In particular, the Statistical Service is characterized by high productivity in their work and opportunities to cooperate with the entire network of the Cyprus Authorities, so that the

collection and processing of data lead to high quality results. At the same time, the Environment Service of the Ministry of Agriculture, Natural Resources and Environment proves that it has the ability to exercise effectively the implementation of the environmental policy. The adoption of a number of heterogeneous Guidelines of the European environmental acquis and the continuous increase of the body of knowledge around the environment of the Country, such as e.g. in the implementation of the Habitats Directive and the Water Framework Directive, are practical evidences of the potential of the Environment Agency. The existing Authorities of Cyprus are absolutely sufficient to monitor the effects of the implementation of the Rural Development Program 2014-2020 and the establishment of a new distinct Service is not required for this task.

### 3.6 Monitoring and evaluation framework

For the first time, the monitoring and evaluation framework will cover the entire CAP, ie both pillars (Pillar I: Income and Market Support, Pillar II: Rural Development Measures). The framework has undergone some changes in the direction of simplification and coherence, while maintaining in-depth coverage of policy interventions.

The monitoring and evaluation framework for the CAP for the period 2014-2020 is defined by EU regulations at various levels. The horizontal regulation [Regulation (EU) No 1306/2013] in the article 110 provides for a common monitoring and evaluation framework for measuring the performance of the common agricultural policy (CAP). It covers every instrument relating to the monitoring and evaluation of CAP measures, and in particular direct payments, market support measures and rural development measures. For the application of that framework, rules need to be laid down which ensure a comprehensive and regular assessment of the progress, effectiveness and efficiency of the CAP against objectives.

In particular for Pillar II (Rural Development), the monitoring and evaluation system is defined by Regulation (EU) No 1303/2013 on common provisions, which sets out the common monitoring and evaluation elements for the ESIF (GRNET), and Regulation (EU) No 1305/2013 on rural development, which addresses the specificities of rural development programs.

In general, these regulations should be taken into account jointly, as the respective provisions complement each other. The performance of CAP measures is assessed in relation to the three general objectives of CAP (ie sustainable food production, sustainable natural resource

management and climate change action, as well as balanced territorial development), and in the case of pillar II in relation to the thematic objectives of Europe 2020 strategy for smart, sustainable and inclusive development.

The monitoring framework includes monitoring the implementation of the program and the progress that has been made in terms of achieving its goals. In particular, they are examined the financial data, the common and specific indicators of the program, including changes in the values of the results indicators, and the progress towards achieving the quantified objectives and milestones set in the performance framework and, where appropriate, the results of qualitative analyzes. In addition, they are examined all issues affecting program performance, including the conclusions of the performance reviews.

The monitoring committee may submit comments to the managing authority regarding the implementation and evaluation of the program, including actions related to the reduction of the beneficiaries' administrative burden, and monitors the measures taken as a result of its observations.

The monitoring and evaluation indicators for the programming period 2014 - 2020 correspond to the CMEF of the European Commission. The system for recording the data required for the calculation of the indicators is based on the application forms which will be prepared so as to contain all the necessary fields for the recording of these data. The purpose of the Managing Authority is to create an integrated information system through which it will be possible to export the data required for the quantification of the indicators, after the computerization of the application forms. The data of the application forms will be computerized and then, with the help of a software system, the data will be processed and the relevant indicators will be calculated. For this purpose, a responsible person will be appointed, in accordance with the provisions of the Common Monitoring and Evaluation Framework, who will be responsible for the collection of data from the application forms through the system, the quantification of the index and the recording of prices in a special database, which will be available to the Managing Authority of the Program. Additionally, it deemed necessary the cooperation of a group of experts which will have the role of on-going evaluators and will provide Managing Authority with the support needed to gather the data for the quantification of the intermediate indicators and the final evaluation of the Program.

Direct payments and support measures for the Rural Development Program are overseen by the

Monitoring Committee through reports and thus the Commission is able to draw up a multiannual evaluation plan with periodic evaluations of the various operations to be carried out under the responsibility of the Commission. The Commission shall ensure that the combined impact of direct payments, market support measures, rural development measures and every CAP instruments in general is measured and assessed in relation to the common objectives for sustainable food production, with an emphasis on agricultural income, agricultural productivity and price stability, for sustainable natural resource management and climate change action, with an emphasis on greenhouse gas emissions, biodiversity, soil and water; and on balanced soil development, with an emphasis on economic development and poverty in rural areas. The performance of CAP in terms of achieving its common objectives is measured and evaluated on the basis of common impact indicators, while as far as it concerns achieving the underlying specific objectives, it is based on results indicators. On the basis of the information contained in the evaluations of CAP, including the evaluations of rural development programs, as well as other relevant sources of information, the Commission shall draw up reports on the measurement and evaluation of the common performance of every CAP instrument.

In order to organize future evaluations in an effective way, they are structured on a thematic basis, in line with the general objectives of CAP. The CAP is subject to shared management, which means that the information used comes largely from the Member States.

It is important to ensure that the monitoring and evaluation framework can be used by Member States and the Commission efficiently and at the appropriate time. It should therefore be provided that Member States send the information necessary for the monitoring and evaluation of the CAP within the deadlines set by the relevant Regulations. With a view to avoiding any undue administrative burden, the Commission should, to the extent possible, use information already made available to it.

The data sources for the respective index values can be provided by a range of sources, such as:

- the data of the Statistical Service of the Republic of Cyprus
- the reports of the Yale Center for Environmental Law and Policy
- the environmental impact assessment studies of projects and activities
- Recording and measurement initiatives that can be taken during the implementation of the

RDP, if the previous sources do not offer sufficient data completeness.

### 3.6.1 Indicators

In general, an indicator measure the implementation of a purpose, e.g. an output accomplished or an effect obtained, or describing the context (economic, social or environmental). Indicators provide datum and information to measure facts or opinions and aggregate data that quantify and simplify phenomena.

A potential indicator should be in accordance with the so-called RACER criteria (Relevant, Accepted, Credible, Easy, and Robust). Racer criteria consider whether indicators are linked to the objectives pursued, whether stakeholders accept them, whether they are unambiguous and easy to interpret for non-experts, whether they are easy to monitor and whether they continue to be usable and hard to be manipulated.

The performance of the CAP in achieving its common objectives shall be measured and assessed on the basis of common impact indicators, and the underlying specific objectives on the basis of result indicators. A set of common indicators, as referred in Article 110 (2) of Regulation (EU) No 1306/2013 was established, as part of the monitoring and evaluation framework of the CAP for the period 2014 – 2020. These indicators allow Member States and the Commission to put in place a consistent monitoring and evaluation framework and support the assessment of the performance of CAP.

There is a wide range of data sources used for the whole CAP monitoring and evaluation framework, e.g. announcements and notifications from Member States, official Eurostat statistics, data collected by the European Environment Agency, World Bank data, etc. During the design of the monitoring and evaluation framework, special attention was paid to the issues of proportionality, simplification and reduction of administrative burden. Therefore, the total number of indicators has been limited and emphasis has been placed on the use of indicators based, as far as possible, on existing, established data sources, as well as on the further use of information already provided by Member States. The use of these standard data sources also contributes to the reliability of the indicators.

Common indicators relate to the initial situation as well as the budget execution, performance,

results and impact of the program and are applied to each program to enable data to be collected at Union level. They are based on available data, linked to the structure and objectives of rural development policy and enable the assessment of the progress, efficiency and effectiveness of policy implementation based on the aims and objectives at Union, national and program level.

A detailed information sheet has been prepared for each of the indicators used, explaining the exact definition and source of the data, the level of geographical detail, the frequency and deadline for reporting, etc., to ensure that all data providers work on the same basis and that data users understand what the data represents.

The performance of the CAP is measured at different levels with the help of different types of indicators, which should be linked to the structure and objectives of the CAP and be based on measurable elements.

Therefore, measurement of impacts is done at the level of the general objectives and impact indicators should indicate the common main goals of CAP as defined in Article 110(2) of Regulation (EU) No 1306/2013. For every common goal they can be identified further specific objectives, for which result indicators need to be laid down. Consequently, measurement of results is done at the level of specific objectives/priorities. Those particular goals include agricultural income and its variability, amelioration of the antagonism of the rural sector, market steadiness, consumer expectations, supply of public goods and environment preservation, climate change mitigation and adaptation and maintenance of a diverse agriculture, as well as the special goals defined for the EAFRD, and specifically the Union priorities for agricultural development. Additionally, measurement of outputs should be done at the level of instruments/measures. The actual performance of CAP instruments should be monitored based on the output indicators in order to reflect this operational level of CAP.

The evaluator quantifies the impact of the program measured by the impact indicators. Based on the data in the CAP evaluations, including evaluations in rural development programs, the Commission, with the assistance of the Member States, assesses the combined impact on all CAP instruments.

The Commission presented a complete catalogue of 45 context indicators for the monitoring and evaluation framework. The use of context indicators allows aggregation and comparability while offering a total image of the situation in which the policy is implemented and a baseline for the

overall framework.

A list of indicator types was presented to preserve the evaluation of the implementation of CAP:

- Context indicators describing general information relevant to the policy (such as the amount of agricultural land available or information on the average age of farm managers);
- Output indicators monitoring EU policies on rural development, for example, on the public expenditure for investment; Income support and market measure output indicators, which provide information on, for example, the number of beneficiaries of CAP income support;
- Results indicators for the income support elements of the CAP measuring the direct and immediate effects of interventions (for example the percentage of farmers income which came from income support);
- Rural development results indicators assessing the effect of rural development policy, such as preventing soil erosion and improving soil management. Most of these indicators are also target indicators. In addition, rural development complementary result indicators aim to assess the net effect of CAP intervention;
- Target indicators used to set quantified objectives at the beginning of the programming period for the rural development policy (some of which correspond to result indicators);
- Impact indicators used to measure impact of long-term policy interventions and in case there are effects beyond the immediate period, (some of which are included in the context indicator set).

The selected indicators include farming income support, climate change and air quality, market orientation and organic production.

The Commission provides an annual update of data for a set of context indicators that reflect relevant aspects of the general contextual trends likely to have an influence on the implementation, achievements and performance of the CAP.

#### 3.6.1.1. Context Indicators

Some of the context indicators that mostly concern agri-environmental measures are presented

below:

C17: Agricultural holdings (farms)

C18: Agricultural area

C19: Agricultural area under organic farming

C20: Irrigated land

C21: Livestock units

C22: Farm labour force

C23: Age structure of farm managers

C24: Agricultural training of farm managers

C25: Agricultural factor income

C26: Agricultural entrepreneurial income

C27: Total factor productivity in agriculture

C28: Gross fixed capital formation in agriculture

C29: Forest and other wooded land (FOWL)

C30: Tourism infrastructure

C31: Land cover

C32: Areas facing natural and other specific constraints

C33: Farming intensity

C34: Natura 2000 areas

C35: Farmland birds index (FBI)

C36: Conservation status of agricultural habitats (grassland)

C37: HNV farming

C38: Protected forest

C39: Water abstraction in agriculture

C40: Water quality

C41: Soil organic matter in arable land

C42: Soil erosion by water

C43: Production of renewable energy from agriculture and forestry

C44: Energy use in agriculture, forestry and food industry

C45: Emissions from agriculture

#### 3.6.1.2. Output Indicators

Some of the most important output indicators are presented below:

O01: Number of farmers (BPS)

O02: Number of hectares (BPS)

O03: Number of farmers (Single area payment scheme)

O04: Number of hectares (Single area payment scheme)

O09: Total number of farmers who have to apply at least one greening obligation

O10: Total number of hectares declared by farmers who have to apply at least one greening obligation

O11: Number of farmers exempted by: organic farmers / exempted from crop diversification / exempted from EFA obligation

O12: Number of hectares declared by these farmers (organic farmers, exempted from crop diversification, exempted from EFA obligation)

O13: Number of farmers subject to crop diversification (with 2 crops; with 3 crops)

O14: Number of hectares of arable land declared by farmers subject to crop diversification (with 2 crops; with 3 crops)

O15: Number of farmers with permanent grassland counting for the ratio

O16: Number of hectares covered by permanent grassland declared by the farmers counting for the ratio

O17: Number of farmers with permanent grassland in designated environmentally sensitive areas

O18: Number of hectares covered by environmentally sensitive permanent grassland declared by these farmers

O19: Number of hectares of designated as environmentally sensitive permanent grassland (total)

O20: Number of farmers subject to EFA requirements

O21: Number of hectares of arable land declared by farmers subject to EFA

O22: Number of hectares declared by farmers as EFA, broken down by EFA type

O23: Number of farmers applying equivalent measures (certification schemes or agri-environment-climate measures)

O24: Number of hectares declared by farmers implementing equivalent measures (certification schemes or agri-environment-climate measures)

O33: Number of farmers (areas with natural constraints)

O34: Number of hectares (areas with natural constraints)

O46: Number of hectares of new vine plantings

O47: Number of hectares of restructured vineyards

O48: Number of promotion projects in the wine sector

O49: Number of projects of investment and innovation measures

O50: Number of hectares subject to cross-compliance

O51: Share of CAP payments subject to cross-compliance

O52: Geographical indications in the wine sector

O53: Number of new protected designations of origin, protected geographical indication and traditional speciality guaranteed by sector

O54: Number of hectares (total and under conversion) concerning organic farming

O55: Number of certified registered organic operators

**3.6.1.3. Results indicators**

Some of the most important output indicators are presented below:

R10: Importance of organic farming (share of organic area in total UAA and share of organic livestock in total livestock)

R11: Crop diversity on farm (number of farms by number of crops and size) or in a region

R12: Share of grassland in total UAA

R13: Share of EFA in agricultural land

R14: Share of area under greening practices

R15: Net greenhouse gas emission from agricultural soils

### 3.6.1.4. Rural development results indicators

Regarding priority 4, six rural development result indicators have been set in order to quantify the results produced.

R06: percentage forest or other wooded area under management contracts supporting biodiversity

R07: percentage agricultural land under management contracts supporting biodiversity and/or landscapes

R08: percentage of agricultural land under management contracts to improve water management

R09: percentage of forestry land under management contracts to improve water management

R10: percentage of agricultural land under management contracts to improve soil management and/or prevent soil erosion

R11: percentage of forestry land under management contracts to improve soil management and/or prevent soil erosion

Regarding priority 5, eight rural development result indicators have been set in order to quantify the results produced and the targeting of the indicators.

R12: percentage of irrigated land switching to more efficient irrigation systems

R13: Increase in efficiency of water use in agriculture in RDP supported projects

R14: Increase in efficiency of energy use in agriculture and food-processing in RDP supported projects

R15: Renewable energy produced from supported projects

R16: percentage of LSU concerned by investments in live-stock management in view of reducing GHG and/or ammonia emissions

R17: percentage of agricultural land under management contracts targeting reduction of GHG

and/or ammonia emissions

R18: Reduced emissions of methane and nitrous oxide

R19: Reduced ammonia emissions

R20: percentage of agricultural and forest land under management contracts contributing to carbon sequestration or conservation

### 3.6.1.5. Target Indicators referring to agri-environmental measures in Cyprus

Regarding priority 4, six target indicators have been set in order to quantify the results produced and the targeting of the indicators.

T8: percentage of forest/other wooded areas under management contracts supporting biodiversity

T9: percentage of agricultural land under management contracts contributing to biodiversity and / or landscapes.

T10: percentage of agricultural land under management contracts contributing to improve water management.

T11: percentage of forestry land under management contracts to improve water management.

T12: percentage of agricultural land under management contracts contributing to improve soil management and / or prevent soil erosion.

T13: percentage of forestry land under management contracts to improve soil management and/or prevent soil erosion

Regarding priority 5, six target indicators have been set in order to quantify the results produced and the targeting of the indicators.

T14: Percentage of irrigated land switching to more efficient irrigation system.

T15: Total investment for energy efficiency

T16: Total investment in renewable energy production.

T17: Percentage of LSU associated to investments in livestock management aiming to reduce GHG and / or ammonia emissions

T18: percentage of agricultural land under management contracts targeting reduction of GHG and/or ammonia emissions

T19: percentage of agricultural and forest land under management contracts contributing to carbon sequestration or conservation.

#### 3.6.1.6. Impact Indicators for the adequate monitoring of various agri-environmental measures in Cyprus.

The Impact Indicators were established in order to assess the effects of the various processes of agri-environmental measures of the Rural development programme of Cyprus and refer to the Rural development plan of Cyprus. The Impact Indicators are listed below:

I7. Greenhouse gas emissions from agriculture / total agricultural emissions (emissions / absorptions CH4 and N2O and emissions / absorptions from agricultural land / ammonia emissions from agriculture)

I8. Field Bird Indicator (FBI) / Total (Indicator)

I9. Cultivation of high natural value (HNV)/ total

I10. Water pumping in agriculture / total

I11. Water quality / Potential excess nitrogen / phosphorus in agricultural land / Nitrate pollution in fresh water - Surface water / Groundwater

I12. Soil organic matter in arable land / Overall estimates of organic carbon content / Average organic carbon content

I13. Soil erosion from water / rate of soil loss due to water erosion / agricultural area affected

### 3.7 Cross Compliance

Cross Compliance is a new concept that has been introduced in Cypriot farmers' life, as well as in

every farmers' life in the European Union, that aims at the Sustainable Development of the Agricultural Sector. Taking into account the concerns of consumers related to the production of safe food at affordable prices, but also the concerns of the rural world struggling to secure its income, CAP of European Union uses Cross-Compliance as a key tool to achieve its goals.

The cross-compliance system incorporates to CAP, key standards for the environment, climate change, good agricultural and environmental conditions of the land, public health, animal and plant health and animal welfare. The aim of cross-compliance is to contribute to the development of sustainable agriculture by raising the awareness of beneficiaries about the need to comply with these basic standards. Objective is also to render CAP more compatible with society's expectations through greater coherence of this policy with the environment, public health, animal and plant health and animal welfare.

According to Cross Compliance, all those engaged in agricultural activity must have some minimum obligations to comply with, in order to receive direct aid. Direct payments refer to those payments, which are based on the cultivating area or the number of animals raised, namely as hectare subsidies and per capita subsidies. Multiple Compliance should also be implemented by the beneficiaries of the Agri-Environmental Measures of Pillar II of the Rural Development Program 2014 - 2020.

The Legislations that rule Multiple Compliance have as main Objectives achieving sustainability, preserving the rural landscape, protecting the environment, the safety of the food produced, consumer health, the safety, hygiene and well-being of farmers and the safety, hygiene and well-being of animals.

The obligations of cross compliance are specific and are defined in Regulations 1306/2013 and 809/2014, which state that the farmer receiving aid must apply SMRs and GAECs. Cross-compliance consists of 13 Regulations and Directives of the European Union and 7 standards of GAEC, which are a set of practices that farmers must apply for better use of soil, so as to avoid the abandonment or degradation of agricultural land. In general, it is a set of regulations that guide applicants on what they should and should not do in order to receive agricultural aid.

The rules of Cross-Compliance must be observed by the beneficiaries of hectare and capital subsidies, the beneficiaries of the Agri-environmental Measures of the Rural Development Program 2007-2013 that were approved, those applicants approved for the Measures of Axis 2 of the RDP

2014-2020, beneficiaries of other direct payments are required to apply Cross Compliance and viticulture growers who have been approved or will be approved in the Vineyards Restructuring and Conversion Measure. (National Viticulture Support Program).

Comply with the requirements of Cross Compliance is controlled and there will be imposed penalties, in cases where violations are observed. The amount of penalties will be proportional to the size of the violation, as well as the degree of recurrence.

Various Services are involved in the implementation of Multiple Compliance, such as the Department of Environment, the Veterinary Services, the Prey Foundation. The coordinating control body is CAPO. Control Bodies, in consultation with CAPO, prepare checklists on the basis of which they shall carry out on-the-spot inspections for cross-compliance implementation. Controls for the implementation of Cross Compliance by CAPO are carried out by the On-Site Inspection Unit (Classical On-Site Inspections and Remote Sensing). Depending on the agreements, the total or part of the instructions are controlled by the Control Bodies.

SMR are Regulations and Directives relating to the protection of the environment, the identification and registration of animals, public health and animal and plant health, the notification of animal diseases and the living conditions of animals.

Regarding the protection of the environment, the Department of Agriculture implements the Directive that refers to the use of sludge from biological wastewater treatment plants in agriculture, as well as the Directive on the protection of water from nitrogen pollution of agricultural origin. In both cases, it must be respected the Code of Good Agricultural Practice prepared by the Department of Agriculture, concerning the proper use of fertilizers and livestock waste, the proper use of recycled municipal wastewater for irrigation purposes, and the proper use of municipal waste sludge for agricultural purposes.

Sensitive Areas have been designated specifically for nitrate pollution. In sensitive areas, all farmers should implement a specific Action Plan to prevent or reduce water pollution from nitrate ions that come from agricultural activity and mainly from the use of fertilizers and manure.

Regarding public health, the Department of Agriculture implements the Directive on the disposal and use of plant protection products related to plant health and the Regulation on feed safety

concerning animal health. The Plant Protection Products Directive defines the process of their approval, how they are placed on the market (packaging, labelling, information on the label), their quality control and residue in the various crops, their storage and, finally, how they are used by farmers. In particular, the use of plant protection substances is governed by a Code of Good Agricultural Practice and keeping an application file by all farmers is mandatory.

The Regulation on feed safety provides for certain inspections to be carried out by approved Inspectors of the Department of Agriculture. The checks are first made on the Registers that must be kept by those involved in the chain of production, marketing and use of feed, in order to ensure traceability. Also, the facilities and equipment of the feed production companies are inspected and the quality control of the feed is done with laboratory analyses by the competent Branch of the Department of Agriculture.

There must be Good Agricultural and Environmental Conditions when conducting agricultural activity. Farmers must take measures to protect agricultural land and its sustainable use, so that it can be used by future generations to produce agricultural products. GAEC are practices that protect the soil from erosion, preserve organic matter and soil structure, and ensure a minimum level of maintenance to prevent ecosystem degradation. The CAPO is in control of the implementation of GAEP.

The most important Cross Compliance Rules applicable to farmers in Cyprus are summarized as follows:

- In the case of parcels located on soils with a slope of more than 10%, must be maintained vegetation cover in the soil, at least during the rainy season.
- In areas with a slope of more than 10% the plowing should be done perpendicular to the slope of the ground (at equal height) or diagonally.
- The producer must protect and not destroy the terraces, dry stones, embankments and natural slopes, within the boundaries of his plots.
- The remnants of tree pruning can be collected in piles and burned only under certain conditions by taking the necessary precautions.

- It should not be done machining treatment of soil, when there is ice or complete coverage of the plot with water.
- In any plot that remains uncultivated, the minimum cultivation interventions should be carried out.
- If used sludge from treated waste, either as a soil conditioner or as a fertilizer, this should be done with a special permit.
- Users of plant protection products and fertilizers must comply with their application conditions.
- Washing of spraying machines must be done at a distance of more than 30 meters from drilling, trench, river, stream, etc.
- The cleaning of the irrigation and drainage canals from the vegetation growing inside them should not be done with chemical means (herbicide).
- Granular agrochemicals must be conceded to the ground.
- On the holding it must be specified a specific waste concentration and collection area, at a specific point, where there will be a relevant signage.
- If the agricultural areas are bordered by roads and natural water bodies (streams, lakes, rivers, ditches, etc.) where there is natural vegetation (plantations, trees, connections), the farmer must take care of that vegetation, so that it is not destroyed.
- Every agricultural facility (warehouses, shelters, etc.) must be maintained in good condition so that substances that pollute the environment do not escape.

For the better information of the Cypriot farmers, the Cross-Compliance Service has been set up by every Service involved.

### 3.8 Codes of good agricultural practice

The promotion and adoption of good agricultural practices is inextricably linked to the service of the objectives of Europe 2020 Strategy on "Sustainable Development", the Flagship Initiative

"Conservation and protection of the environment and the promotion of efficient use of resources" of the PA 2014 – 2020. In the framework of minimum agricultural activity, Cyprus preferred the strictest terms of the European framework. For all the areas declared in the farmers' applications, it is foreseen that even if they are not productive, there will be annual actions, which will force the farmers to take care of their land and therefore will consider it in their interest to produce.

Since 2002, Cypriot farmers have been obliged to apply the CGAP as described by the Ministry of Agriculture, Natural Resources and Environment, in the RAA 407 with number 3634 / 06-09-2002. These codes aim to guide those engaged in farming activities, in order to avoid or minimize the pollution of the environment and its burden with unnecessary and unnecessary quantities of fertilizers and livestock waste. They also contribute to confront problems created by the agricultural activity and the continuation of its positive functions. The CGAPs aim to establish environmentally acceptable conditions for the use of both recycled municipal wastewater produced for irrigation purposes and sludge produced from municipal waste treatment for agricultural purposes. Codes of good agricultural practice intervene in the whole range of agricultural and livestock activity, as well as in special cases of areas or zones, which are part of special protection schemes. The aim of the observance of the CGAP is the dissemination of good agricultural practices and their correct implementation in the exercise of agricultural activity and at the same time the optimization of the use of EU resources.

Good agricultural practices respond mainly to the need of protecting biodiversity, genetic resources and landscape, soil and water resources, as well as the provision of public goods by farmers. Biodiversity conservation is inextricably linked to agricultural activity. Farms often support wildlife, offering food, nesting sites or even hunting grounds. The survival of a large number of species of fauna and flora depends directly on the continuation of traditional forms of agriculture and animal husbandry. Biodiversity and genetic resources are proportional to the natural environment and agricultural history of each region. Cyprus, due to the variety of landscapes with special microclimatic and topographic characteristics, the variety of soil and geological substrates and the diversity of vegetation, forest and agriculture, contributes to the creation of a wonderful variety of habitats that meet the requirements of numerous species of wildlife.

Special characteristics of agricultural lands in Cyprus in combination with agricultural practices, such as crop rotation and fallowing and mixed farms contribute to the creation of a mosaic of great diversity landscapes, which are habitat for a large number of species of animals that live, feed and

reproduce around crops.

Regulation (EC) with No 1782/2003 established a framework for standards of good agricultural and environmental status of agricultural land, on the basis of which Member States should establish national standards, which will take into account the specific characteristics of the areas concerned, such as soil and climatic conditions, the applied cultivation systems (land use, crop rotation, cultivation practices) and the structures of the holdings. These standards of good agricultural and environmental condition of agricultural land intend to prevent soil erosion, to preserve soil organic matter and soil structure, to ensure a minimum level of conservation, to prevent habitat degradation and to protect and manage water. The wider scope of the cross - compliance system provided in this Regulation should therefore include a framework within Member States should establish national standards for good agricultural and environmental status. The EU framework should also include rules for better confronting water, soil, coal storage, biodiversity and landscape issues, as well as the minimum level of conservation of agricultural land.

Through the RDP 2014-2020, a balanced allocation of resources is promoted with an emphasis on solving environmental problems and achieving the desired sustainability of economic and environmental systems. The interventions of the RDP 2014 – 2020 of Cyprus, among others, include the restoration, conservation and enhancement of biodiversity, in areas of Natura 2000 network, in areas facing natural or other special disadvantages, in areas of agriculture of high natural value, improving water management of fertilizers and pesticides, improving soil management and erosion prevention, reducing greenhouse gas emissions and especially ammonia, as well as maintaining and retaining carbon dioxide emissions in agriculture and forestry.

In particular, agricultural practices aim at the sustainable management of agricultural land and natural resources, the protection and preservation of the rural landscape and its characteristics, and the protection of the health of farmers and consumers.

CGAP that concern practice of agriculture exclusively, are focusing on specific agricultural activities: input management, soil treatment, crop rotation, fertilization, water resources protection, plant protection, wildlife management, crop residue management and waste management. The required good agricultural practices described by sector of activity, anticipate, among other things, the conservation of biodiversity at its various levels. For example, with regard to soil treatment, it is necessary, among other things, not to destroy the uncultivated margins between parcels, hedges,

natural vegetation of ravines and adjacent forests, as well as to preserve natural streams, so that any interventions in order to change the course of streams will be allowed only with the permission of the competent department. With regard to fertilization, the distance from water bodies and sources for the application of fertilizers is limited in a way that ensures public health and the health of wetland ecosystems. The CGAPs also emphasize the protection of water resources, while at the same time they focus on the safe use of plant protection products, not only for the protection of public health, directly and indirectly, but also for the protection of biodiversity and its habitats. Some practices are aimed at preserving the native flora and associated fauna, while others help manage crop residues and waste in a way that is "friendly" to biodiversity.

The main axes of good agricultural practice are:

- the best water economy (protection of water resources),
- reducing soil erosion and desertification,
- limiting soil salinization and salinity of the aquifer,
- maintaining and improving fertility and soil structure,
- sustainable management of native flora and fauna (conservation of biodiversity, species and habitats),
- the preservation and improvement of the mosaic and structural features of the extensive rural ecosystems,
- reducing the residuality of plant protection products,
- reduction of pollution from agricultural fertilizers,
- proper management of crop residues, waste and livestock waste,
- the improvement of the quality and the certification of the produced products,
- the conservation of genetic resources,
- reducing greenhouse gas emissions,
- measures for protected areas (e.g. NATURA 2000 network),
- informing farmers on issues of Common Agricultural Policy and cultivation techniques.

More specifically, in terms of water resources, the increase in areas that have been identified as vulnerable to nitrate pollution demonstrates the need to continue programs and actions that promote practices of rational use of fertilizers and plant protection products.

In terms of soil, the rate of erosion is affected by both climate and land use changes, as well as farm

management practices. The Mediterranean region is particularly prone to soil erosion as there are long periods of drought followed by intense erosive rainfall that falls on steeply sloping and fragile soils. Cyprus has a high rate of soil erosion.

Other agricultural practices that are beneficial to the climate and the environment are:

- Crop differentiation: A farmer must cultivate at least two crops when his arable land exceeds 10 hectares and at least three crops when his arable land exceeds 30 hectares. The main crop can cover up to 75% of the arable land, and the two main crops can cover up to 95% of the arable land. "Crop" means: (a) the cultivation of any of the different genera defined in the botanical classification of crops; (b) the cultivation of any of the species in the case of Brassicaceae, Solanaceae and Cucurbitaceae; (c) the fallow land; other herbaceous livestock plants.
- The maintenance of permanent pastures
- The maintenance of an "ecological focus area" that will occupy at least 5% of the arable area of the holding for holdings with arable land larger than 15 hectares (excluding permanent pastures and permanent crops). The following will be considered as elements of ecological focus for the case of Cyprus:

  a) Fallow land

  b) Landscape characteristics (applied from 2016) (individual trees with a crown diameter of at least 4 meters (30 m2 per tree) and field edges between 1 and 20 meters, in which there is no agricultural production (9 m2 per 1m)

  c) Constraint zones (9 m2 per 1m) constraint zones are located on or next to an arable land, so that their long sides are parallel to the end of a watercourse or water system. There is no agricultural production in constraint zones.

  d) Hectares of agroforestry areas (which receive or have received support through RDPs)

  e) Reforested areas (according to the provisions of the RDPs)

  f) Areas with a crop that has nitrogen capture capacity (under finalization 0.7 m2 per 1 m2).

It is emphasized that the above elements of ecological focus should be located on or next to an arable land.

### 3.9 Gaps in the monitoring system of Cyprus

As analysed above, during the Evaluation of the Environmental Measures of the RDP 2014 - 2020, some weaknesses were identified, which greatly burden the monitoring and evaluation procedures of the Program. The non-adaptation of the applications of the beneficiaries and the Information System to the requirements of Monitoring and Data Collection resulting from the observance of the provisions of the Common Monitoring and Evaluation Framework, create several gaps in the monitoring and evaluation system of Cyprus.

First, the inhibitory factor for the monitoring process is the existence of issues in the Information System, a fact that is also attributed to its construction philosophy, which covers all the phases (electronic submission of proposals by beneficiaries, integration, monitoring and closure) that make up the cycle of the Program. The structure in individual software per Meter and not in a Unified System is problematic, since the absence or incomplete installation and operation of a single Information System does not cover critical Measures through computer applications.

Also, a particularly big problem arises due to the long delay in the process of examining the candidacy files. The administrative burden of the employees of the competent bodies is quite large, resulting in delays in the utilization of monitoring system data. Many times the relevant data and results of the monitoring system are not made available in time and are therefore considered unreliable, while the responsibilities are often assigned to smaller bodies with more limited financial resources, fewer employees and lack of specialized knowledge. The monitoring system should be implemented in a more opportune manner. For this reason, it would be appropriate to have online information on the basic existing environmental provisions, which would allow all categories of users to easily check, through a web portal and an interactive map, whether, for example, the problems identified by the monitoring data are being identified. Access to the directive for information already includes the minimum requirements for the active and systematic dissemination of information , as well as a general obligation to ensure that information is up-to-date, accurate and comparable. The contribution of technical assistance could be major in order to

support actions to reduce the administrative burden on beneficiaries. In addition, if monitoring and evaluation systems cannot be improved, the Implementation Unit may consider prioritizing and targeting parameters and then proceeding with the "first come first served" process meaning that all the required information has been presented at the submission of the application file. Such a process can reduce to a largely management costs and office workload.

Significant gaps in the monitoring system are also created, due to the inability to enhance the skills of the staff involved in the Management, Implementation, Monitoring and Evaluation of the RDP. Monitoring efforts are unevenly distributed and the information produced is fragmented and often out-dated. Actions transferring technique knowledge to members of Monitoring Committee and the involvement of staff in actions to improve administrative capacity are very limited. The involvement of bodies and persons with duties, powers and rights to investigate, supervise, control, advise or be accountable for compliance obligations is a key responsibility, as improving knowledge will help improve productivity. The participation of the employees involved in educational programs, training programs, workshops, as well as in conferences, would significantly enhance the efficiency of the monitoring system and at the same time it would help them to get acquainted with the Common Monitoring and Evaluation Framework. Simultaneously, significant advantages could be brought by the utilization of Technical Assistance concerning the training of the executives of the Implementation Units in relation to the objectives of new CAP and the new implementation framework, mainly in terms of objective related strategies.

In addition, the statistical framework for the rural economy is quite weak. In order to improve it, it is necessary to identify the methodologies for keeping statistical data between the Statistical Service and Departments of the Ministry, to evaluate the methodology applied by the Statistical Service in calculating critical parameters of the rural economy and environment and to create a methodology for calculating basic macroeconomic indicators and especially the mountainous areas, where the macroeconomic profile is very different from the rest of the national economy. The need to relate the content of the application dossiers to the selection criteria and outcome indicators is a fairly reliable framework for data collection, assuming that the necessary data sent by the beneficiaries during the implementation phase will be ensured, as well as upon completion of the physical object of the projects. An important part of the necessary key information has already been identified and described, while the immediate activation of the evaluation steering team is foreseen, as well as the possible recruitment of an external collaborator and the conduct of training seminars

for the staff of the implementing bodies.

At the same time, the inability to calculate CMEF indicators so far continues to be a disadvantage of information systems. The framework for compliance with agri-environmental indicators is incomplete, while there is a significant time lag in the availability of data for the environmental indicators of the Common Monitoring Framework (common indicators 31, 32, 36), after recording data from 2005 to 2007, while for indicators 35, 37, 41 and 42 there are not available data. Therefore, out of the total of 15 common environmental indicators, 7 cannot be sufficiently utilized, which weakens the ability to capture the current situation and the effects of the Program on the environment (air, soil, biodiversity, water) and climate change. The issue of maintaining a framework for recording agri-environmental indicators has been highlighted in intermediate evaluation reports of the RDP, while special reference is made for monitoring the state of the Environment in relation to the implementation of the RDP 2014 – 2020. The issue can be resolved by fully computerizing the applications in the basic Measures of the Program based on the indicators of the Evaluation Framework, in order to make the recording of the evaluation data simpler and more accurate.

An additional gap in the monitoring system is created due to the lack of cooperation between environmental scientists, statisticians, ICT experts and executives. Lack of coordination of public services cannot ensure the necessary coherence between horizontal (in government level) and vertical (in local, regional and national level) priorities, with the result that the integration of environmental objectives into various policies, programs and projects is particularly inadequate. Improving the cooperation between Implementing Bodies, Managing Authority and Paying Agency can contribute to the uninterrupted supply of the Information System. Close cooperation can ensure the provision of information that is, on the one hand, scientifically and legally strong and, on the other, comprehensible to the general public, experts and policy makers. The information should serve a variety of end-users, assisting competent authorities in managing their tasks, monitoring bodies in compliance control and people in understanding how citizens and environment are protected. The need to improve cooperation and communication with the Statistical Service is also emerging as a major issue that still exists.

A crucial parameter for the proper operation of the Monitoring and Evaluation System is the avoidance of the phenomenon of announcing the measures without having taken into account the type of necessary information, the frequency and the way of their collection and processing.

Finally, the financial crisis exacerbates this situation, as the budget for environmental inspections remains stable or decreasing. Facing these challenges, even large and well-resourced authorities may have difficulty finding, individually, optimal methods for ensuring compliance. Appropriate EU funding could be used to set up, upgrade and develop relevant monitoring systems and training.

The efforts undertaken by both Managing Authority and National Agricultural Network to improve the skills of all stakeholders (implementing agencies, Paying Agency) in matters of evaluation, are undoubtedly a significant advantage over the past and a satisfactory starting point to meet the increased needs of the Programming Period 2014 – 2020. These efforts should be intensified and it must be expanded their recipients, such as the executives of the Local Action Groups, the representatives of the Agricultural Organizations but also the individuals involved in the preparation of the investment plans.

# 4 CHAPTER: END USERS AND ANALYSIS OF PROVIDING SERVICES

## 4.1 Introduction

The development of agriculture in a sustainable way presupposes the integration of environmental parameters of CAP. Farmers receiving aid under the CAP are required to comply with multiple regulations, i.e. regulatory requirements and obligations related to the good environmental preservation. Failure to comply with these obligations may result in a reduction or even cessation of aid to those who are inconsistent.

During the process of implementation and control of the CGAP and Cross Compliance, many difficulties arise for the Public Authorities, mainly due to the complexity and the number of obligations that must be monitored. Authorities responsible for agricultural aid payment are burdened with a high workload, mainly due to the need to carry out OTSC on agricultural parcels. This results in high administrative costs and bureaucratic time consuming procedures for monitoring compliance by farmers.

Farmers, on the other hand, have great difficulty in fully understanding and familiarizing themselves with the rules, due to the management of complex requirements. This can sometimes lead to non-compliance and consequent penalties for them. The potential loss of aid is certainly undesirable, since they face high administrative costs for their proper compliance with the rules.

A system providing services for management that could combine satellite data onto a modern IT platform would be a great tool for farmers as well for agricultural advisors and paying agencies. This will be beneficiary, in terms that will improve the implementation efficiency and the control of compliance with cross-compliance rules. It is of particular importance that provided services or tools will be able to remotely support both controls carried out by the paying authorities as well as the farmers themselves in implementing the environmental measures. This will strengthen the cross-compliance system, both in its implementation and in its supervision, farmers will be helped to apply the rules of environmental protection, agricultural advisors will be supported to produce relevant services and administrative burden of paying agencies will be reduced.

This chapter will analyse the end-users' needs for tools and services, present methods through which services end up to end-users and define groups, differentiating them according to their needs for tools and services. Furthermore, it will be presented the current situation and will be proposed optimizations for the systems providing services. Also, the services provided for management of

natural resources will be analysed, regarding their need for data, the sources of those data and the accessibility on data. Finally, in this chapter it will be developed the way of processing in the system that provides services, concerning the ease of using the tools of services, the requirements on special knowledge for using the services and tools, the flexibility in receiving service from the end user and the overall users' benefit.

## 4.2 End-user needs for tools / services

The analysis of the monitoring system of Cyprus, presented in a previous chapter, the identification of gaps in the monitoring system of Cyprus, and further research conducted in the rural population of Cyprus, highlight some basic needs of users. A rapid assessment methodology has been developed to identify users' needs for tools and services, followed by further assessments, using both quantitative and qualitative techniques for higher reliability. A series of interviews and workshops were conducted with representatives of Public Authorities, Agricultural Advisors and Farmers. This process helped to identify their distinct needs.

The general needs of the end users concern the following:

- Strengthening the level of education and vocational training, both of the rural population and of the bodies responsible for monitoring the implementation of agri-environmental measures.
- Strengthening the managerial competence mainly in the issues of Environment, Climate Change and Publicity.
- Promoting agricultural innovation to improve competitiveness and adaptation to climate change
- Improving the competitiveness and viability of farms
- Need to prevent the abandonment of agricultural land
- Need to prevent degradation of water resources and soil quality
- Need for interventions in areas of high natural value and NATURA 2000 areas
- Promotion of RES and energy saving actions in the agri-food sector and forests

- Rational management of water resources
- Need to reduce greenhouse gases and CO2 emissions from the agri-food sector
- Preservation and strengthening of forest areas
- Need to improve the quality of life of rural residents
- Need to strengthen entrepreneurship in rural areas.
- Need for funding of specialized studies and researches for the calculation of the indicators for the monitoring of the impact of the Program in the environment.

More specifically, in terms of the provision of tools and services, the needs of end users were collected using mostly interviews and the requirements were identified and categorised into five topics: General system requirements – Basic Payment Scheme eligibility and application – Farmer record keeping – Inspection process – Farmer education and information.

Regarding to general system requirements, it is considered particularly important the integration of spatially and temporally tagged/referenced data as well as the accessibility in areas of poor internet access. Furthermore, it is of great value to assure the security of data storage and ensure the reliability and resilience.

Furthermore, end users need to ensure compliance with greening measure regarding crop diversity, Ecological Focus Areas and no loss of permanent grassland as part of eligibility for basic payments (Greening calculator) and they also need to safeguard transparency regarding calculation of eligible area, especially when obscured by tree canopies.

Also, farmers need a tool/ service to help them calculate values based on area, to report problems (ex. accidents/exceptional circumstances) and farm issues (ex. ruts/tracks/fallen trees) and provide them warnings, if automatic mapping calculations detect problems (GIS queries). A farmer record keeping would be very helpful, as farmers could view cropping history to inform general farm management/decisions, generate checklists of actions required personalised to farm type and maintain crop loss records based on satellite pictures – map extent and duration of flooding.

In particular, inspectors need a tool/ service to present them all known data and the inspection form pre-filled, in order to be prepared for an audit easily. Thereby, inspectors could see the fields that the farmers have filled in and they could prepare the inspection form before starting the OTSC.

In addition, as far as it concerns inspection process, it would be very helpful a tool/service that could assess extent of areas affected by soil erosion, map areas at risk of soil erosion and ensure that areas sensitive to soil erosion are cultivated appropriately.

Finally, the need for training and information is imperative. End users should be informed of Basic Payments Scheme changes based on farm type and they could use a tool/service that could provide them examples of good and bad practice with explanations (Photo-help material).

### 4.3 Methods through which services end up to end user

The goals of the development of a system providing services for management of natural resources could be set through a process of research and recording of requirements. These goals are divided into business goals, design goals and goals related to the satisfaction of user requirements. Particular emphasis on understanding the requirements of the user is given by an anthropocentric design. For the research, recording and analysis of user requirements, in order to define the end user, various techniques are used.

Initially, an attempt was made to analyse the user, recording and analysing all direct and indirect users, whose activities may be affected by the introduction of the system and who may affect its acceptance and successful operation. Thus, users include, among others, those who interact directly with the system, those who control or manage the direct users, those who receive the results (exit) of the system, those who make financial decisions in relation to the system and those who use competing systems. Both primary users (those who are going to interact frequently, directly with the system), secondary users (those who use the system infrequently or through an intermediary) and tertiary users (those who never use the system directly, but are affected by its introduction, as they are obliged to change some of their tasks in order to adapt to its requirements) were analysed.

In the initial phase of analysis, all stakeholders were recorded, i.e. all those who have a direct or indirect investment in the introduction and use of the system. Thus, initially, were taken into account those responsible for its design and development, technical staff, developers, analysts, manual writers, etc. those with financial interests related to the development or purchase of the system, such as the sales manager of the company that develops the product or its buyer, those responsible for its introduction, installation and maintenance within an organization, such as those responsible for equipment maintenance, staff training, etc., those interested in using ie the

management of a business, as well as the primary, secondary and tertiary users.

After identifying the groups of users, their characteristics were recorded, which include individual characteristics (age, physical abilities / particularities, learning ability, cognitive ability, experience skills, motivations and ambitions, cultural background, phobias, personality, etc.), characteristics related to computers (previous experience in software and operating systems, experience in using devices, predisposition towards computers and IT, etc.), group characteristics (goals and mission of the team, coherence and homogeneity of team members, autonomy, dependence on other groups, structure and dynamic characteristics, prestige, voluntary or forced participation, etc.).

Also, a very important stage was the recording of goals, tasks and the environment in which users will work, as the new services and tools provided will support some tasks in a specific user interface. However, it should be noted that this recording is particularly difficult, as users often cannot explain what they need in order to achieve their goals and in many cases cannot even formulate those goals. Regarding the user environment, it is also being recorded work environment (noise, cold, humidity, cleanliness, use of hazardous toxic substances), workplace organization (user communication channels, organizational structure, effect of automation on work practice and in the content of the work, recording possible loss of skills, loss of employment, changes in the power structure, decentralization / concentration of power), user employment conditions (fill in a description of a typical day in the life of the employee with comments on how this will change when the proposed service / tool will be introduced). Then each of the following key tasks should be analysed: a) organizational analysis: importance of work, safety issues, motivation to perform work, required level of competence for its elaboration, dependence on other tasks, b) analysis of time constraints: frequency of work execution, average required time of its completion, time of preparation, segmentation, possibility of its execution in separate parts, and c) analysis of human involvement: mandatory / optional, pressure induced, performance criteria). These characteristics should be recorded before the introduction of the new services / tools and it should be described how they are expected to evolve after its introduction.

In addition, in order to define the end user, it was used the interview technique. The main goal was the comprehension of the tasks that the system should support. Regarding the interview procedure, initially there was a selecting of interviewees and the designing of interview questions. This was followed by preparing for the interview conducting the interview, while at the end there was a post-interview follow-up.

Finally, a large number of stakeholders completed questionnaires, which helped determine the characteristics and needs of the user, work practices, user attitudes towards the services / tools needed. Participants were given the opportunity to complete the questionnaire either in printed form or electronically via email or online forms (e.g. Google Forms). Prior to their participation, users were informed about the time required, as well as the objectives of the study, anonymity issues and how the data will be used.

### 4.4 Definition of end-user groups and differentiation based on their needs for tools

The definition of end-user groups is guided by users' needs, their goals and the way in which the users intend to use the solution of the problem. In general, users of a service or tool are not only those who are going to operate it directly, but all direct and indirect users, whose activities may be affected by the introduction of the system and who may affect its acceptance and successful operation.

The end users will be greatly affected by the introduction of the new service / tool and may have to change significantly the way they used to perform certain tasks. Also, as a result of automating part of their task, they may need fewer people to perform the same task, while overall performance may increase. Furthermore, the introduction of a new service / tool may increase the dependence of these users on the computer system, while information that until now belonged to a limited number of people, can now be available to a larger number of people.

Stakeholders are all those who have a direct or indirect interest in the introduction and use of the system and are differentiated according to their needs for tools and services and either have direct financial interests related to the development or purchase of the system, or either are responsible for its design and development, or for its introduction, installation and maintenance within an organization.

The main target groups (stakeholders), which refers to a system providing services for management of natural resources, are farmers, land owners, farmers' collective entities, agricultural consultants (submitting BPS claims, recording of information to demonstrate adherence to cross compliance conditions and Greening Measures), and Paying agency staff and inspectors (administration of remote inspections and OTSC). The involvement of each of the end-users differed depending on their area of expertise, knowledge, experience and accessibility.

Within these, three groups were identified as key end-users; Paying Agencies, Agricultural Consultants, Farmers.

Farmers and farmers' collective entities include farmers' unions, national/regional unions, agricultural cooperatives and agricultural chambers, which generally act as a connection between them and public authorities.

Agricultural consulting services relate to advices for the development, promotion and marketing of farm products, compliance to legislation (national and European), implementation of CAP requirements, environmental adaptation, monitoring of farms, new technologies, education and training. Advisory services are mainly offered by the private sector (private companies or freelancers).

Paying Agencies are responsible for the management and control of expenditure of EAGF and EAFRD and they are established in accordance with EU 1306/2013 Regulation of the European Parliament and of the Council and Commission Regulations (EC) 908/2014and 907/2014.

A service/ tool providing help for management of natural resources will be used by end users based on their needs. So, farmers will be provided with the checklist of rules they are obliged to be compliant with according to their BPS applications. They will be guided through the rules and measures that they should take. The new service/tool will allow them to store the data, records and documents that they need to obtain, keep and present to inspectors. Using the mobile application, they will also be able to collect and store time stamped and geotaged photos from fields. Finally, they will be able to communicate with the PA in case of exceptional circumstances. On the other hand, consultants working for farmers will use the new tool/service to improve the advice to farmers in terms of the Cross Compliance procedure and they will mainly use the spatial component to access and analyse spatial data from various sources and to access the data collected by farmers. Additionally, paying agencies will use the new tool/ service to retrieve valuable information in order to optimize and improve the selection of farms to be inspected on Cross Compliance and Greening rules. They would also be able to use it, in order to communicate with farmers to prevent breaches of the rules and respond to farmers' requests for support. Inspectors will be able to access the data and material related to the farm to be inspected in the case of remote inspection or to download any data needed for "OTSC". They will be provided with a checklist of rules specific to the farm that will guide them through the inspection process.

### 4.5 Current situation and suggestions for optimizing the providing services system

The existing system of providing services for management of natural resources, whether BPS claimants have met the cross-compliance conditions and greening measures has a high resource and cost burden associated with it. Additionally, there are administrative costs for Paying Agencies associated with on-farm inspections and difficulties in disseminating changes to requirements.

As far as it concerns farmers, they are tasked with familiarising themselves with the relevant conditions and regulations applicable to their specific geographical location and farming system, while being aware of any potential breaches in the requirements of the scheme. The existing system which provides services for management of natural resources is not so functional and friendly for the user, mostly because the information provided is not so clear to see. The final beneficiaries of the agri-environmental measures state that they are reluctant to implement investments aimed at saving water and energy, but also to participate in agri-environmental measures, especially in the measures related to the increase of carbon storage. Due to the increased importance of mitigation and adaptation interventions to climate change, emphasis will need to be placed on awareness-raising and information activities.

The aspect of informing the potential beneficiaries of the RDP is very critical, especially if taken into account the fact that the main burden is borne by the sector of agricultural applications, which is also responsible for the implementation of lifelong learning actions and the implementation of measure concerning collaboration. The non-activation of the measure of the Agricultural Advisers raises serious concerns about whether the farmer will be able to successfully perform all his tasks, im case there is no coordinated action to improve the skills of his staff.

Furthermore, some issues arose during the current period 2014 – 2020 regarding the ability of implementing bodies to meet the increased requirements of the CMEF. The need to improve the knowledge of the staff of the implementing bodies in matters of evaluation was highlighted in the context of the annual meetings of focus groups, as well as in the actions of parallel evaluation.

Finally, it continues to be a weakness of information systems to provide the ability to calculate CMEF indicators.

At the same time agricultural consultants are looking for opportunities to improve the advice and

services they can provide for their customers.

The difficulties from the unsatisfactory operation of the Information System especially for the "data production" have been diagnosed, but whether the necessary adjustments will be made in time as well as its connection with other Information Systems and especially the Geographical Information System of the Paying Agency is not clear.

The solution to improve the above analysed current situation will be to provide a public Software as a Service system.

The need to correlate the content of the application dossiers with the selection criteria of the acts and the outcome indicators is a fairly reliable framework for data collection, provided that the necessary data is sent by the beneficiaries during the implementation phase. Improving the cooperation between the Implementing Bodies, the Managing Authority and the Paying Agency can contribute to the uninterrupted supply of the Information System.

The need to improve the cooperation and communication with the Statistical Service also emerges as a major issue that despite the efforts / initiatives undertaken in cooperation with the Evaluation Consultant during the training phase of the Program still exists.

It is necessary to formulate an adequate system of service provision, integrated in a broader strategic framework for the agri-environmental issues of Cyprus. Administrative competence should also be strengthened in terms of formulating and monitoring the communication plan, a field that was not actually undertaken in practice by MC executives in the past. Possible support from CAPO will be helpful.

The overall objective of a new tool which will provide services for management of natural resources, would be the development of a platform for the delivery of public services that will enable the improved implementation of the CAP. Thereby, open and user-generated data could be integrated into added value services, which were designed and created with the cooperation of farmers, agricultural consultants and public authorities. Such a project could be focused on supporting the administration of the BPS, through which farmers would be able to apply for direct payments. Cross compliance and Greening measures are two mechanisms that are linked to these payments to ensure more environmentally-friendly farming. It is of great value, that the new service/tool will be focused on developing a software platform to assist in the implementation and monitoring of these schemes.

Furthermore, a service system would be significantly improved by a co-production approach with the end-users as active stakeholders in the development process. The co-production will support the completion of cross-compliance applications and will demonstrate farmers have met EU CAP regulations. Additionally, it could develop an effective and accurate platform, as well as a user-friendly and efficient platform for its end-users.

In addition, it is important to give a great basis to early identification of end-users and their specific end-user needs, which will ensure that key stakeholders and end-users will be involved in the development of the specific tool/ service. It must be ensured that there were incorporated as many user requirements as possible,

It is considered an equally high priority, the general system requirements, relating to develop a functional and user friendly platform. This will facilitate the work of farmers, especially with regard to the completion of electronic documentation. For example, identifying issues linked with poor internet connectivity; offline systems needed to be considered to enable farmers to collect data from anywhere on the farm, not just the farm office where the internet connection was good. This would simplify and speed up the process of adding, for example, photos to the platform, enabling a farmer to do it immediately, rather than waiting until they had an internet connection. It is recommended that provided information should be clearer to see and easier to be used by farmers and inspectors. Changes in the system of providing services should have as main target the improvement of usability for inspectors and farmers. For these reasons, some workflows for the breaches table should be redesigned and categorized.

Also, the system of providing services can be optimized if there would be an additional function, which could provide warnings to users (ex. If uploaded area records do not conform to LPIS parcel areas, if automatic mapping calculations detect problem, etc.), could ensure area calculations in order to correct totals and would be used to correct degree of accuracy.

Additionally, it is recommended to use the technical assistance for the special assessment of the effects of agri-environmental measures from their until today implementation in three environmental parameters, which are soil protection, water quality in groundwater aquifers and greenhouse gas emissions. This recommendation follows the need to collect and maintain data that will allow the calculation of the values of the indicators of results and impact of agri-environmental measures.

Some additional tools that will mainly encourage farmers to adopt and implement innovation in the field, are the provision of support through consultants, the development of training tools for all farmers, the provision of innovation training to newcomer farmers, the approach of older farmers.

The system should consist of certain components, which will be based on the user requirements. Such components will be for example the workflow component, the spatial component, the application component, the remote sensing component, etc. The workflow component will provide personalized information, check lists and notifications to farmers, agricultural consultants and inspectors, in order to help them follow the procedures of cross compliance measures step by step. The spatial component will provide spatial information especially to inspectors and consultants, in order to perform spatial analysis and queries, and will offer access to visual representation and integration of spatial data, through a web cartographic environment based on external spatial data and a database of the system itself. The application component will offer simplicity, mobility and flexibility to farmers and inspectors, as on the one hand it could give the opportunity to farmers to collect data while they are on the farm and on the other hand will support inspectors with OTSC. The Remote Sensing Component will support inspectors and paying agencies identifying potential breaches of cross compliance, by extracting useful data concerning crop monitoring and classification (identification on a specific field of the cultivated crop).

Furthermore, in order to optimize the system of providing services, it would be very helpful a tool, that would allow farmer to control a list of cross compliance rules that are applicable to each of his parcels. A more detailed description of the regulations could be presented to him, along with a must do and not do list, in order to comply with the rules. Thus, the farmer would be able to perform a self-inspection and in case there will be detected any breaches he would be able get more details for the issue and resolve it.

### 4.6 Analysis of services provided for management of natural resources

The overall objective of a system providing services for management of natural resources should be the development of a service / tool that will enable the improved implementation of CAP. This service / tool could integrate open data, as well as user-generated data and could take under consideration the suggestions of public authorities, farmers, and agricultural consultants.

The provided service/ tool should mainly focus on supporting the administration of BPS. Following the CAP reform, EU farmers were able to use a safeguard for basic income support, by applying for direct payments through the BPS. In order to ensure more environmentally friendly farming approaches, direct payments were linked to Cross compliance and Greening measures. Thus, the system which will provide services and tools for management of natural resources should focus on aiding the implementation and monitoring of these schemes, mostly by administrative checks of paperwork, visual OTSC and CwRS. The new services / tools would provide the opportunity to public services and agricultural consultants to develop their services and would offer to farmers more personalised services in order to comply with Cross-Compliance and its environmental standards.

Below, the proposed services will be analysed regarding their need for data, the sources of this data, the accessibility of the data and the way of processing.

### 4.6.1 Needs of services provided for data and sources of this data

A system providing services for management of natural resources needs a large number of data, which ideally can be collected from every region of Cyprus and will be combined appropriately, in order to obtain the desired information. The information that will emerge, is useful for a more efficient design of the services, as well as in their better organization. The main purpose of the system providing services for management of natural resources is to meet the information needs of its users, ie the needs for gathering, organizing, storing, searching and disseminating information.

A modern service providing system includes the handling of data and information. The efficient operation of the system is very often associated with complex processes, which require the cooperation of many departments, while many of its functions involve the management of a large volume of data. In order to extract valuable information, there is an immediate need to communicate with the environment, which implies additional need to manage large volumes of information.

The information that provided services are required to utilize may be available in various forms, while otherwise they have to be produced. The tools and methodology for finding and utilizing information can vary, whilst there is a huge amount of data to store, covering both primary and secondary data.

Primary information can be collected for a specific purpose, using appropriate tools, such as questionnaires and statistical surveys, and analysed in such a way as to lead to conclusions useful in planning and decision-making. Qualitative tools commonly used in order to gather information are questionnaires and focus groups. A set of questionnaires could be used in order to cover different aspects of end-user groups (farmers, inspectors from Paying Agencies and agricultural consultants) and collect quantitative and qualitative data (via open-ended questions). Questionnaires could be self-administered (e.g. using Google forms or other on-line tool) and they could use numeric or graphic scale rating for facilitating analysis. In addition, different response targets could be set according to the total number of end-users participating to the survey, but they should always aim at maximizing response rate. Additionally to questionnaires, could be used focus groups, which will be organized in order to validate the survey findings, to probe deeper into issues, to generate new ideas and simultaneously to obtain insights on the usefulness and potential for exploitation and sustainability of a system providing services. It will also allow identifying policy support scenarios and issuing recommendations based on end-users needs. As the focus group methodology also allows obtaining "hidden" or unconscious information, it will be of great value. Furthermore, primary information can be recorded during the daily processing operations of end users, in order to automate simple operations aiming on accounting monitoring after the standardization of processing. In order to capture the differences in the regional, user type and functional requirements, a range of methods of communication were established as appropriate. These included: emails, reports, individual and group Skype meetings, face-to-face small workflow or large consortium meetings, organised interviews and workshops.

As for secondary data, they can be seeked on the electronic portals of various institutions in Cyprus, as well as in EU and through its e-services information. Useful data include open satellite data, commercial satellite data and open geospatial data. As for open satellite data, e.g. primarily Sentinel-2, Landsat and Sentinel-1, a synchronizer shall be developed to automatically download and pre-process a new satellite image, when available. These data will be pre-processed to generate spectral, spatial and temporal features (e.g. multi-temporal NDVI). On the other hand, commercial satellite data, could be provided by the Paying Agencies, resulting in having multi-spectral data with a very high resolution. In addition, open geospatial data include LPIS, land use / land cover, and other geo-information.

More analytically some of the secondary data can be seeked in:

Open data from www.data.gov.cy

Geospatial Information Portal of Cyprus (www.geoportal.gov.cy)

Statistical tables and digital backgrounds, Statistical Authority of Cyprus ESS

Digital data from www.openstreet

Digital cartographic data from natural earth (www.naturalearthdata.com)

Data referring to the environment of Cyprus (www.moa.gov.cy)

Free geodata

Environmental data from EEA (www.eea.europa.eu)

U.S. geological survey (www.earthexplorer.usgs.gov)

Data on water needs per month (primary data from timeless research of the ARI), provided by crop and by area / station.

### 4.6.2 Data accessibility

Data inquiry process requires the existence of equivalent services to explore data, which mainly use information search engines. A well-guided system should be able to use the information rapidly when needed.

The system of providing services needs to feature an open data system so that end-users, regardless of age, educational level and end-user group, have access to information and data in the context of intelligent agriculture. They should also be able to use tools, which will help the improvement of crops, will increase competitiveness, and reduce production costs.

The data collected by the system of providing services, should be able to be kept on file, while the personal data collected must be processed in a lawful and transparent manner, ensuring fairness towards the individuals whose personal data is being processed. The purpose of collecting, preserving and processing personal data is to cross-check them with variant data of public and wider public sector, in order to determine the detailed data of payments.

Recipients of data collected are public services, judicial authorities, public officials or third parties and responsible bodies are competent or obliged to transmit them by law or court decision. Recipients of every data are Administrations and variant services of responsible bodies.

Only certified users who have been given a username and password will be able to access the service information system. Users will not be allowed any leaks or information to unauthorized third party users about the content of the information system to which they have gained access due to competence. Each user's login to the system and his actions in it should be recorded and controlled.

In order to process data, there must be specific purposes, which must be indicated to individuals when collecting their personal data and there must also occur data minimisation (collecting and processing only necessary for the specific purpose personal data).

Public sector bodies that hold mainly geospatial data, within the scope of their competence, are obliged to ensure the accuracy and real-time updating of geospatial data, having regard to the purposes for which it is processed.

Personal data collected, even by automated means, is processed to ensure storage limitation, id est they will not be stored for longer than necessary.

In addition, administrative, technical and physical safeguards should be maintained to protect personal data provided by accidental, unlawful or unauthorized destruction, loss, alteration, access, disclosure or use. In order to ensure the proper security, integrity and confidentiality of personal data, it is necessary to use appropriate technology and implement some security measures, such as data encryption during transport, strong user authentication, enhanced network infrastructure and network monitoring applications.

The personal data collected should be stored in the system in such a way as to enable the identification of the persons to whom the data relates, for a period not exceeding the necessary time, under the purposes for which the data were collected or for which this data is further processed. The specific time period can be determined taking first of all into account the need to store the personal data collected in order to offer services that have been created for the user. On the other hand, there must be taken into account the existence of specific legal obligations that make processing and storage necessary for a relevant time of period.

### 4.6.3 Manner of processing

In order to ease the use of services and tools, the general system requirements must include items such as assurances for security of data storage and simple navigation interfaces. Use will also be facilitated by the addition of simple functions, such as logging of activity and varying account privileges. A set of various simple tools that aim to the visualization of a number of main features of the system, will assist users understand its main functionalities and will give the opportunity for a feedback.

In addition, the ease of use of the tools is affected by the internet connectivity. The application should have the possibility to synchronize automatically with the online system, when a Wi-Fi network is available. Furthermore, mobile and tablet applications need to be accessible offline, so that farmers on the one hand can access the data of the system and make changes offline and inspectors on the other should be able to download data to their tablet in order to use the application in offline mode. The changes will automatically be uploaded when the connection is adequate. Mobile, tablet and desktop applications will be accessible in areas of poor internet access. The application would be able to detect the internet connection speed and provide appropriate image resolution. For example, in case of poor internet access user will get low-resolution image.

The end users might be people with poor technical background, so the services and tools provided should be simple to use and intuitive, with clear and self-explanatory screens, easy to use maps and colours that would allow it to be adopted by the users. It needs to be easy to access and get started with. It is necessary to follow all the latest guidelines around usability and efficiency, so that users could navigate easily to the option they need. In addition, it would be very helpful if tutorials, education material and examples of GAEP, as well as examples of bad practices should be available to users in order to offer a better understanding of the entire system of Cross Compliance.

Furthermore, the application should be tested in the latest versions of all common browsers (Chrome, Firefox, Safari, etc.) in order to ensure that it will be the same for all users no matter what browser they are using.

Farmers, consultants and Paying agencies require a high level of data security and reliability to trust the new provided services. In order to prevent unauthorized use of data, it is necessary the existence of permissions.

Agile approach will be ideal for the development of new services and tools, because it will provide flexibility and fast response to change, allowing adaptive planning and evolutionary development while keeping code simple, testing often, and delivering functional bits of the application as soon as they are ready.

It is particularly important to have flexibility in receiving services, which should be available to the public, mainly using internet, through a website or a live online library, and the information should be easily accessible. The provision of services, in addition to being relatively accessible to the public, is expected to increase the demand for investment convenience, flexibility, immediacy, speed and transparency. The lower cost of these services will expand access and significantly increase the scope of the market. In its turn, it will push a large number of new companies to invest and be active in this field and it will create a competitive and innovative environment, which will ultimately benefit every end user of the services.

Services and tools for management of natural resources must be designed and manufactured in such a way as to maximize their use and must comply with the applicable rules regarding instructions and information, user interface and functional design and support services.

Services should provide information for each tool, its accessibility features and structures, should facilitate access to websites and mobile devices, should provide information on accessibility and should implement practices, policies and procedures in order to meet the needs of their users. Services and tools must be designed and manufactured in accordance with EU directives, taking into account any subsequent amendments to the harmonized standards. In addition, there should be a conformity assessment process, clear identification of tools and services should be provided and they should be accompanied by easily understood instructions and safety information. They should be available to the public written and oral information easily accessible concerning the service provided and how that service meets accessibility requirements. Furthermore, it must be ensured compliance with procedures, in order to maintain compliance with accessibility requirements and take into account any modification.

Computer knowledge and Information Technology infrastructure are crucial for farmers, consultants and paying agencies, in order to be able to use the new system. The necessary knowledge aiming at using the provided services is limited to basic computer knowledge, so that users would be able to set certain tasks. It refers to basic required skills and knowledge, which will

help them to cope in a technology-dependent society. Users should have an initial but structured and overall view of the basic functions of the computer, in a perspective of technological literacy and recognition of Information and Communication Technology. Furthermore, users should get in touch with the various uses of computer as a monitoring tool, as a cognitive-investigative tool and as a tool for communication and information search in the context of their daily activities. In addition, it is suggested that users should be able to use easily basic IT applications related to data collection, processing and communication. They should be able to understand and use effectively the capabilities of word processors and internet, to be able to search for information effectively and to be able to manage simple multimedia material (e.g. image).

### 4.6.4 Overall benefit of users receiving provided services

The system providing services for management of natural resources will benefit farmers, agricultural consultants and paying agencies. Below, there will be analyzed benefits accordingly to every user group.

Regarding to farmers, the new system will offer them an assisting service to comply with regulations imposed by CAP, will facilitate them understanding Cross Compliance rules and will increase Cross-Compliance awareness, mainly by simplifying the interpretation of complex regulations and by providing information on Cross Compliance and greening for every specific parcel. The likelihood of breaking Cross Compliance rules will decrease, by providing new tools with reminders and early alerts on potential breaches, while CAP implementation will be more effective and more efficient, as data management will be easier. The interpretation of complex regulations will be facilitated, satisfaction in CAP implementation would improve and citizen involvement in CAP implementation will increase. Also, farmers will reap benefits by specific tools of the system providing maps, layers and information about plants' vegetation and they will have a reduced administrative burden, mostly by saving time for preparing the documents for checking compliance with Cross Compliance rules and preparing the BPS application.

Organic Farmers will be facilitated to recognize Compliance with OC and OS and the process will be easier and less time-consuming, as it will simplify the document management and reduce the documentation work. The provided services / tools will support organic farmers with ensuing organic requirements. By providing maps and layers, as well as information about plants'

vegetation, the processes will become easier for organic farmers and the administrative burden will be reduced.

Specific tools and services of the provided system will turn cross compliance and organic subsidies compliance into an easy task. Farmers will be able to use a list of all relevant rules and check their obligations in order to be compliant with the Cross Compliance rules and other environmental measures of rural development. Farmers and organic farmers will have the advantage of farm management, which will allow them to keep records of information related to their parcels and detailed tracking of their purchases. Furthermore, using maps through the service provided will allow them to check compliance and have access to information related to rules and requirements.

In addition to facilities offered to farmers, the new system will offer agricultural consultants the possibility to develop new added value services, which will combine the access to available data and the use of systems' components. Thus, they will have the advantage of using data available, tools and libraries, in order to develop their services aiming in giving assistance to farmers. Transforming knowledge into added value services, agricultural Consultants could develop services under an open approach, search data and integrate search results. Another advantage for agricultural consultants will be the fact that they will be able to manage every data concerning their clients' parcels and consequently they would have the opportunity to deliver improved advisory services modified to suit their clients' needs.

Regarding inspectors and paying agencies, their work will be facilitated by the new system, in terms that inspectors and paying agencies would be able to optimize inspection processes and reduce the cost for the administration. Benefits concern primary the efficiency of Cross-Compliance monitoring. Paying agencies will be able to keep farmers informed of any new legislation framework in a better, secure and quick way. By making cross compliance process more efficient, inspectors will be able to control some requirements remotely, so they could focus only on problematic issues, as the number of OTSC will be reduced. Thereby, they will gain time and the speed of inspections will be increased, accelerating the performance of OTSC. Also, the cross compliance procedure will be more transparent, allowing the provision of precise information about Cross Compliance requirements for farmers' parcels and raising their awareness. Inspectors will have the possibility to check farmers' activity calendars, while each step will be visible. The transparency of the control process will be enhanced and the number of checks performed remotely will increase, as well as the inspections' speed. In addition, the new services will support

inspectors by providing them confortable maps for the identification of crops, mowing of pastures and crop diversification, assisting them to realize operational cross compliance checks and controlling the majority of GAEC requirements. Finally, the administrative burden will be reduced for Inspectors and paying agencies. The number of the daily inspected parcels will increase, but the need for human resources, as well as the need for OTSC will reduce. Thus, human resources will be better allocated and simultaneously the cost of monitoring CAP obligations will be reduced.

**BIBLIOGRAFY**

Cyprus Agricultural Payment Organization, "Implementation Manual: Single application for extractory subsidies", available at http://www.capo.gov.cy/capo/capo.nsf/0/df44403af5c62df9c22579ff003008ea/$FILE

European Commission. "Agricultural monitoring", available at https://ec.europa.eu/jrc/en/research-topic/agricultural-monitoring

European Commission. "An environmentally sustainable CAP", available at https://ec.europa.eu/info/food-farming-fisheries/sustainability/environmental-sustainability/cap-and-environment_en

European Commission. "CAP Context Indicators", Agricultural and rural Development, available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2016%3A316%3AFIN

European Commission, "Communication from the commission to the European Parliament, the council, the European economic and social Committee and the Committee of the regions improving the delivery of benefits from EU environment measures: building confidence through better knowledge and responsiveness", available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52012DC0095

European Commission. "Delivering the benefits of EU environmental policies through a regular Environmental Implementation Review", available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2016%3A316%3AFIN

European Commission. "Europe 2020: the European Union strategy for growth and employment", press release of 3.3.2010, https://eur-lex.europa.eu/legal-content/el/txt/?uri=legissum%3aem0028.

European Commission. "EU budget: the Common Agricultural Policy beyond 2020", press release of 1.06.2018, available at https://ec.europa.eu/commission/presscorner/detail/el/IP_18_3985

European Commission. "Evaluation of the Information Policy on the CAP: final report", Luxembourg: Publications Office of the European Union, 2015

European Commission. "Future of the common agricultural policy", available at https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-

policy/future-cap_en

European Commission. "The Monitoring and Evaluation Framework for the Common Agricultural Policy", Luxembourg: Publications Office of the European Union, 2015

European Court of Auditors, "Using new imaging technologies to monitor the Common Agricultural Policy: steady progress overall, but slower for climate and environment monitoring", 2020, Curia Rationum

Ministry of Agriculture, Rural Development and Environment: Agriculture Department, "Cyprus National Strategy for Sustainable Business Programs", available at http://www.moa.gov.cy/moa/da/da.nsf/All/930E6725B866A7F4C225851900463FC9?OpenDocument

Ministry of Agriculture, Rural Development and Environment: Cross Compliance Service, "Cross Compliance", available at http://www.moa.gov.cy/moa/crosscompliance/crosscompl.nsf/dmlcompliance_gr/dmlcompliance_gr?OpenDocument

Ministry of Agriculture, Rural Development and Environment: Department of environment, "Strategic Plan 2019-2021", August 2018, available at http://www.moa.gov.cy/moa/environment/environmentnew.nsf/page06_gr/page06_gr?OpenDocument

Ministry of Agriculture, Rural Development and Environment: Rural Development Program 2014-2020, "Annual Reports", available at http://www.paa.gov.cy/moa/paa/paa.nsf/All/474CBB308C2546E2C22582BE00308067?OpenDocument

Ministry of Agriculture, Rural Development and Environment: Rural Development Program 2014-2020, "Ex-ante evaluation", available at http://www.paa.gov.cy/moa/paa/paa.nsf/page73_gr/page73_gr?OpenDocument

Ministry of Agriculture, Rural Development and Environment: Rural Development Program 2014-2020, "Intermediate evaluations", available at http://www.paa.gov.cy/moa/paa/paa.nsf/page74_gr/page74_gr?OpenDocument

Ministry of Agriculture, Rural Development and Environment: Rural Development Program 2014-2020, "Measure 10: Agri-environmental and climate measures", available at http://www.paa.gov.cy/moa/paa/paa.nsf/pagemg_gr/pagemg_gr?OpenDocument

Ministry of Agriculture, Rural Development and Environment: Rural Development Program 2014-2020, "Measure 11: Organic Agriculture", available at http://www.paa.gov.cy/moa/paa/paa.nsf/pagemh_gr/pagemh_gr?OpenDocument

Ministry of Agriculture, Rural Development and Environment: Rural Development Program 2014-2020, "Measure 12: Aid under Natura 2000 and the Water Framework Directive", available at http://www.paa.gov.cy/moa/paa/paa.nsf/pagemi_gr/pagemi_gr?OpenDocument

Ministry of Agriculture, Rural Development and Environment: Rural Development Program 2014-2020, "Measure 13: Payments in Areas with Natural or Other Disadvantages", available at http://www.paa.gov.cy/moa/paa/paa.nsf/pagemj_gr/pagemj_gr?OpenDocument

Official Journal of the European Union, "European Parliament resolution of 20 February 2008 on the input for the 2008 Spring Council as regards the Lisbon Strategy" (2009/C 184 E/06), press release of 6.8.2009, available at https://eur-lex.europa.eu/legal-content/EL/TXT/PDF/?uri=CELEX:52008IP0057&from=IT

Official Journal of the European Union, L 118, "Recommendation of the European Parliament and of the Council of 4 April 2001 providing for minimum criteria for environmental inspections in the Member States", available at https://eur-lex.europa.eu/legal-content/EL/TXT/?uri=CELEX:32001H0331

Official Journal of the European Union, L347. "Regulation (EU) no 1303/2013 of the European Parliament and of the council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006", available at https://eur-lex.europa.eu/legal-content/el/TXT/?uri=celex:32013R1303

Official Journal of the European Union, L230/1, "Commission Implementing Regulation (Eu) No

834/2014 of 22 July 2014 laying down rules for the application of the common monitoring and evaluation framework of the common agricultural policy", available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0834&from=EN

Official Journal of the European Union, C151/1, "Special Report No 4/2003 concerning rural development: support for less-favoured areas, together with the Commission's replies", available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52003SA0004

Official Journal of the Republic of Cyprus, "Regulatory Administrative Act 407/2002: Code Of Good Agricultural Practice", available at http://www.psb.org.cy/index.php/en/file/MkZTs2RjKkyhGYAsl9Rd6A==/