Environmental and Economic Impact of Support Measures in Agriculture, Albania

Msc. Mirgjana Gjermizi

Agriculture and Rural Development Agency (ARDA)
within
Ministry of Agriculture Food and Consumer Protection (MAFCP)
e-mail: mirgjana.gjermizi@gmail.com

Msc. Ikbale Tota

e-mail: i.tota@yahoo.com

Msc. Enkeleda Pjetri

e-mail: epjetri82@yahoo.com

Msc. Marsela Qerama

e-mail: marsela.qerama@gmail.com

Abstract *Agriculture is one of the most important pillars of the economy covering around 52% of the labour force. Recent years the government of Albania is applying support measures in agriculture in order to give support for rural areas and increase the economic situation of the farmers. The aim of this paper is to find out the environmental and economic impact that the support measures will have in the future for the supported farmers, in their welfare and environment. The scope of these measures is to improve the economic and social conditions in rural areas trying to increase the competitiveness and market efficiency, creation of new working possibilities, and increase the livelihood of the farmers. The study will be done in the basis of the actual situation in the 6 year of the application of the support measures, but will be analysed also the needs and opportunities of introducing new measures. It is important to underline that this paper will serve to find out the impact in the rural areas of support measures and will be helpful to improve agriculture policies, to define the most adapted and profitable measures to be applied for the farmers.*

Keywords: *environmental impact, economic impact, support measures, agriculture.*

1. Introduction

Recent years the Albanian Government is applying several measures in Agricultural field in order to help farmer enhancing the capacity for increasing production in and improve their economy.

Agriculture has a crucial contribution to the economy of Albania. During the time period 2001-2009, the share of agricultural sector in GDP decreased due to the relatively slow growth of the sector and faster growth of the other economic sectors. The average annual growth of the agricultural sector was about 3% (Draft RDP).

Due to the importance that this sector has to the economy the government decided to give the necessary attention. The conditions of Albanian territory offers a lot of possibilities for the cultivation of the olive trees (especially in south areas), fruit trees, vineyards mine while these are a very considerable source of income for the economy of our country, to combat the poverty especially in mountainous areas, to improve the ecological, esthetic and touristic conditions.

If we consider the scope of application for the measures we will have an impact in the lifestyle of the Albanian farmers but also in the environment which will be useful for the development of the other agricultural policies in the future.

The problem for the implementation might be the fragmentation of the parcels of the farmers and also adapting the best species for gathering the best possible result for the investment in such project considered this from the point of view of the farmer. Their investment should be economically viable and long lasting in the mean time. To accomplish these conditions in depth studies must be conducted from the part of the ministry and other institutions interested in this field.

Support measures in agricultural field of Albania are in the six year of implementation covering all the Albanian territory. The Albanian Government started to apply these measured in 2007 with one main measure “new plantation”

which included planting of new olive trees, planting of new fruit trees and new vineyards. The number of the measures increased over the years. According to the statistics the number of the applicants increased also. This can be verified by the tables below:

Table no.1

No.	Year of application	Number of financed projects	Number of measures applied
1	2007	2109	1[1]
2	2008	2580	10
3	2009	3536	16
4	2010	5416	9
5	2011	4032	16
	TOTAL	**17 673**	**52**

Source: ARDA [2](within the Ministry of Agriculture Food and Consumer Protection)

1.1 Introduction with some type of the measures applied from 2005-2011

- Planting of fruit trees (apple, pear, plum, cherry, peach, hazelnut, strawberry), of olives and citrus
- Planting new vineyards
- Drip irrigation on intensive orchards, citrus, olives
- Protection of olive groves from the olive fly
- Certifying BIO agricultural products from cultivated plants
- Saplings producing for autochthonous kinds of the grape “Kallmet”, “Debinë“ and “Vlosh” for seed-plot
- Establishing wells for irrigation on orchards, citrus and olive trees
- Providing new plastic sheet for establishing new hitting greenhouses
- Greenhouses with technical heating for vegetables production for the change of use system of oil in the solar
- Mushroom production, 50% of the equipments and installs value
- Subsidies for livestock farms that breed above 10 matriculated milk producing cows, but not more than 30 heads
- Subsidies for farms that breed more than 50 sheep which are tagged
- Subsidies for bee for farmers that own more than 50 bee boxes;
- Intensive breeding of snails
- Producing of extra virgin olive oil
- Planting autochthonous vegetables (tomato, cucumber, pepper, onion, potato)
- Support through the interest rate subsidy for the loans in agricultural sector or agro processing
- Plantation of nuts trees, almonds and pomegranates

2. Problem Statement

The majority of the population in Albania lives in rural areas. The economy of the population in such areas is very poor even though the natural conditions for developing agriculture are very suitable. Furthermore, the development of agriculture must be compatible with the environment which in our days is becoming more and more problematic.

For the reasons mentioned above there is the need to find out the importance and the impact of the measures in order to implement them in a way which should be profitable and environmentally friendly in the mean time.

3. Research questions

The paper objective is to find out the impact of support measures on the economy and the environment of the farmers where those measures are applied. Is this impact in accordance with the measures objective? Are these measures being applied in the right place? What kind of impact will have these measures in the coming years in water, air quality and soil

[1] 1 measure which includes 3 sub-measures (planting of olive trees, fruit trees and vineyards)

2 ARDA - Agriculture and Rural Development Agency

quality? These are some of the questions that we have tried to give an answer. The intention of the study includes also the possibility to serve as an advice for the policy makers to introduce the existing or even new measures in the best way possible and with the best effect in the economy and environment of the farmers.

4. Methodology

The target of the study was the farmers which are financed by the MAFCP, under the government programme. Defining the economic impact is used a comparative analysis with the data gathered from ARDA. If we consider the environmental impacts of those measures will be long term impact and it is difficult to define the first years the final impact that measures will have.

4.1 Data collection

The main data are collected from the Ministry of Agriculture Food and Consumer Protection (hereafter referred as MAFCP), precisely from the Agriculture Rural Development Agency (hereafter referred as ARDA) which is the implementation body of the support measures.

From the data obtained we evaluated the impacts of those activities that might have in the future in the surrounding environment. The effects are analyzed for a period from 2007-2011 dating from the first year of the implementation of the measures. To create an idea of the possible impact which will have these measures in a field which is the source of the life of the farmers we had to take into consideration that the most important income of the rural population are private farms with a small size.The implementation of the support measures covers almost all the country but for different measures there are more specific species that their production is better in specific regions, areas. These areas are defined in the annexes of the Guideline prepared by the MAFCP based on the studies conducted by the MAFCP. From 2010 and on a special intention is given to rural areas as a priority because of the poverty which is higher than in urban areas. The problem rises for a certain number of factors like poor infrastructure even though the situation is changing due to several investments, low possibility to access the market and low production capacity.

According to the OECD definition 5 Regions (Dibër, Lezha, Gjirokastër, Kukës, Korça) of the Albania are considered as Predominantly Rural Areas, 5 other regions (Berat, Elbasan, Fier, Vlora, Korca) as Intermediate Regions, and 2 regions (Tirana, Durres) are considered as Predominantly Urban.

5. Results and discussion

5.1 Environmental impact

Recent year's environment is one of the biggest issues being discussed in all over the world. Agriculture is one of the most important sectors which have an impact on the environment which can be positive but also negative. One of the reasons that agriculture is passing from extensive agriculture to sustainable agriculture aiming toward rural development is that extensive agriculture has a negative impact in the environment. The only scope is not only the product in quantity but also the quality of the product and the quality of the environment. This issue for the moment can be considered in Albania as a problem to be solved. One fact is that farmers share a very small area of land which does not allow them to apply last technology which can be environmentally friendly because it is a very big investment for a small area which is not viable.

5.1.1 Air quality

It is well known that the plantation of trees have a key role in the process of the photosynthesis which consist in absorbing the carbon dioxin (CO_2) and release the oxygen (O_2). The absorption of carbon dioxin (CO_2) is used by the plants to compose the organic matter. Increasing the number of planted trees and the planted area will contribute to the clean air, which is very well illustrated last years with the carbon sequestration policies.

5.1.2 Soil quality

The increased planted area has an effect in the soil organic matter which is a critical soil component, supplying most of the nutrients held in the soil, in particular nitrogen, phosphorous and many trace elements, maintaining aeration and soil

porosity, deactivation of chemicals and heavy metals. The fact that we noted is that in the areas which are object of this study a small number of farmers are informed of good agriculture practices and sustainable agriculture. For this reason the amount of the chemicals to be used in the plantations are not very well controlled. For this reason exist a risk of the contamination of the soil if the farmers use not the right amount of chemicals for the right planted plant.

5.1.3 Erosion, Water Quality

Erosion is a big problem in our days. Soils have a rate of natural erosion which varies from the geology, topography and the rainfall. In areas that are degraded and have high erosion rates, planting of trees will reduce soil loss through organic matter build-up and protection from sheet wash, ice needle erosion, wind erosion and rainfall impact. Referring to the data a considerable number of projects are applied in a hilly area.

5.1.4 Nutrient cycle

Trees play a vital role in nutrient cycling. They cycle newly weathered nutrients from deep in the soil and some species facilitate the absorption of nitrogen from the air.

Most concerns regarding the environmental sustainability of tree plantations have focussed on nutrients and their subsequent effect on productivity. This is to be expected as the nutrient removal associated with fast growing plantations will cause nutrient depletion of the soil and lower productivity. Decisions on overcutting and rotation age in relation to sustainability are largely made on financial terms such as the optimal time to cut, rather than what the soil can sustain.

Relying on inorganic fertilisers is unsustainable. The mining of non-renewable fertiliser base materials, the eutrophication of waterways with fertiliser run off as well as gaseous losses to the atmosphere following application, and the negative effect on soil fauna, flora and physical properties are not sustainable. The energy involved in their manufacture, transport and application, all come from fossil fuel sources. It is suggested that yields cannot be maintained by present practices, and fertilisers are simply a short-term fix to meet certain economic criteria.

5.1.5 The Carbon and Energy Balance of the Tree Plantations Industry

The greenhouse effect is one of the most widely discussed environmental issues. In the last few years many in the plantation industry have been promoting tree plantations as a carbon sink to offset the rise in atmospheric carbon levels from fossil fuel burning. Carbon credits could be pursued as additional financial benefit from plantations. Yet much of the analysis that has led to the conclusion that tree plantations provide a carbon sink does not include the complexities of the plantation life cycle. However, plantations planted into pasture or crop lands that substitute methane emissions make a positive contribution towards reducing greenhouse gas emissions.

The life cycle of tree plantations begins with site preparation for planting. If any vegetation is cleared there will be a loss of carbon through burning, decomposition or export from the site. Fossil fuels are normally used in this process by machinery or herbicides. Following planting, carbon is taken from the air by the trees through photosynthesis and incorporated into the biomass. This continues throughout the tree's life but is largely cancelled out from canopy closure onwards by C releases from litter and Organic Matter decomposition.

The table below summarizes and compares the short and long term impacts of measures on biodiversity and other environmental components. In the longer term (5 years and longer), nearly all impacts will be positive. This is used of a model on evaluating the impact in the respective sites being monitored.

Table no. 2 Short Term (ST) and Long Term (LT) Impacts of the measures

Activity	Impacts on the Environment											
	Soils		Water		Climate		Flora		Fauna		Landscape	
	ST	LT	ST	LT	ST	LT	ST	LT	ST	LT	ST	LT
1. Soil preparation	-1	+2	-1	0	0	0	-1	0	-1	0	-1	0
2. Planting	+3	+3	0	+1	+2	+2	+3	+3	+1	+3	0	+3
3. Maintenance	0	0	0	0	0	0	0	0	0	0	0	0

4. Replanting	+1 +1	0 +1	+1 +1	+1 +1	0 + 1	0 +1
5. Disease control	-1 0	-1 0	0 0	-1 0	-1 0	0 0
After application of the measures	+2 +6	-2 +2	+3 +3	+2 +4	-1 +4	-1 +4
Before the application of the measures	-14	-13	0	-8	0	-8

Likely potential project impacts without mitigation measures were evaluated on a scale from –3 to +3, where –3 refers to major negative impacts, and +3 refers to major positive impacts.

5.2 Economic impact

Table no.3 Value of production by branches (price of 2006)

No.	Description	2000	2005	2008	2009	2010
1	Agriculture	126116	142220	155669	159080	171802
2	Agro industry	27990	42790	51353	52731	55543
	Total	**154,106**	**185,010**	**207,022**	**211,811**	**227,345**

Source: Statistical yearbook of 2010 issued by MAFCP

As we can note from the table above the value of production in general increased year by year. This is not linked directly with the applications of the measures because the major parts of measures did not entered into production yet. Measures like drip irrigation on intensive orchards, citrus, olives etc, and providing new plastic sheet for establishing new hitting greenhouses have already reflected the impact on the economy of the beneficiaries. The incensement in the economic situation will be reflected in the coming years and the farmers move their attention from the simple production toward agro industry.

6. Conclusion

- One of the biggest difficulties faced during the implementation of the measures in the fragmentation of the parcels. According to the statistics collected by the MAFCP the major part of the plantations are very small which lead to fragmentation of the parcels having an impact in the landscape but also to a economical difficulties because farmers have to invest in other sources for such a small area which could not be economically viable. There have been some tentative from the part of the policy makers to stimulate farmers to apply for the support schemes in groups to organize the parcels in bigger blocks.
- In general the impact of the measures on the environment is positive, except the possible negative impact from the overuse of fertilisers
- The measures started to reflect the economic impact in the supported areas
- One problem that the agency has faced during the implementation of the measures is the very large and very strong informality of the sector
- The technology used by Albanian farmers is very poor due to the economic situation of the farmers which cannot support buying new machinery, even though before 2005 the Albanian government in collaboration with the Japanese Government has given Grants for farmers to support agriculture
- Several studies should be conducted by the respective institutions to specifically adapt the measures to the needs of the farmers and also to the right environment, placing the right culture to be planted in order to have the maximum capacity of production
- Develop the infrastructure especially in Predominantly Rural areas.
- Respecting the environment would be one of the main condition on the selection criteria, even though would be difficult and costly to invest in such businesses.

References

Altieri, Miguel A. 1983: Agroecology – The scientific basis of alternative agriculture. University of California, Berkeley, USA
Davidson, J. 1987: Bioenergy Tree Plantations in the Tropics: Ecological Implications and Impacts. IUCN Commission on Ecology Paper
Ecosystem (ITE symposium no.20) Eds. Yang Hanxi, Wang Zhan, J.N.R. Jeffers, P.A. Ward. Institute of Terrestrial Ecology, Grange-over-Sands, Cumbria, LA.
Estock, D., Freedman, B. and Boyle, D. 1989: Effects of the Herbicides 2,4-D, Glyphosate,
Hexazinone, and Triclopyr on the growth of three species of fungi. Bulletin of Environmental Contaminants
MAFCP, Draft Rural Development Programme 2011-2013 under the instrument for Pre Accession Assistance (IPA)
Monroe, D.H., 1988: Ecological and public health implications associated with the use of glyphosate herbicides. National Coalition Against the Misuses of Pesticides, 1991: Technical Report, Vol. 6, No.6 June
Nunn, Patrick. In press: Greenpeace Report of recent history of extreme weather events.
O'Connor, K.F., Overmars, F.B. and Ralston, M.M. 1990: Land evaluation for nature conservation. Conservation Sciences Publication No.3, Dept of Conservation, Wellington.
Ward, Jonet C. and Beanland, Ruth 1992: Contributions to a national set of environmental i
indicators to be monitored at a regional level. Information Paper No. 36, Centre for Resource Management, Lincoln University.
Zonneveld, Isaak S. and Forman, Richard T.T. 1990: Changing Landscapes: an ecological perspective. Springer-Verlag.,