



MED Greenhouses "Green Growth through the capitalization of innovative Greenhouses"

3.1.3. Joint report of available financial channels for eco-innovative technologies

Regional Council of Berat



Project Details:

Programme: Interreg MED 2014-2020

Priority Axis: 1. Promoting Mediterranean innovation capacities to develop smart

and sustainable growth

Objective: 1.1. To increase transnational activity of innovative clusters and

networks of key sectors of the MED area

Project Title: Green Growth through the capitalization of innovative Greenhouses

Project Acronym: **MED Greenhouses**

Reference No: 3082

Lead Partner: TEI of Thessaly

Total Budget: 1,171,400 €

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Deliverable Details

WP: 3. Capitalising

Activity: 3.1. State of Play in Policies, Financing, Technologies & Stakeholders

Deliverable Title: 3.1.3. Joint report of available financial channels for eco-innovative

technologies

Responsible Partner: PP1. University of Thessaly

Involved Partners: All

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1. Introduction

1.1 Objective

The overall objective of the "MED Greenhouses" project is to improve eco-innovation capacities of public & private actors in the greenhouse/agriculture sector, through stronger transnational cooperation, knowledge transfer and better collaborative networks. The main beneficiaries will be Greenhouse farmers, Businesses specialized in Agro-food and Greenhouse industry, Policy Makers - Unions of Agricultural Cooperatives, Research & Technology Institutes, etc.

WP3 "Capitalising", aims at improving the existing innovative framework conditions in the MED area, providing tailored recommendations to stakeholders and favouring eco-innovative investments in the agricultural sector, and ii) creating synergies and cooperation mechanisms strengthening innovative clusters and networks.

Activity 3.1 aims at i) systematizing existing knowledge and presenting the state of playon technologies of innovative greenhouses in the partners' territories, ii) developing a database of Stakeholders and beneficiaries, *iii) identifying available financial channels for eco-innovative technologies*, and iv) reporting present policies/frameworks. Through this activity, the partners will be able to identify the obstacles and the existed bottlenecks in their regions and design tailored policy recommendations for the establishment of innovative (geothermal) greenhouses.

The report aims at identifying financial schemes (sectoral programmes, PPP's, Business Angels, etc) for eco-innovative investments, focusing on innovative greenhouses at Regional and National level.

















2. State of play in the partner region

2.1 Description of the situation regarding financing of eco-innovation

This section presents existing financial tools/channels that can be used for ecoinnovation financing in the agricultural regions of Albania including Berat.

% GDP at country level for investments on eco-innovation

The percentage of GDP at country level for investments on ecoinnovation is not available so far. However, the government has planned to introduce some supporting schemes for the use of renewable energies for heating and cooling. It is reviewing the law on RES to add a provision that would finance the projects for heating and cooling, which use mainly biomass in the sector of agriculture. The financing is expected to be made through the grants from the RES fund set up by the government. The grants will reach up to 30% of the total cost of project investment. Ministry of Energy and Industry in corporation with the Ministry of Agriculture, Rural Development and Water Administration will identify the most suitable projects based on their financial realization and the influence to fulfill the objective of RES in the sector of agriculture (National Action Plan for Renewable Energy Resources in Albania). Regarding the total investment for each of the aforementioned groups, the analysis shows that total demand for investment is EUR 2 471 million and the share of investment required for small HPPs is about 785 million Euros. Both these values represent significant amounts for the Albanian economy in general and its banking sector in particular, making it a very attractive sector.

% Structural Funds at national level for eco-innovation

This information is not available.

Which sector is the priority of the country for ecoinnovation (Industry, Agriculture, Public buildings, Transport, etc). Albania ranks 40 out of 180 countries in the Environmental Performance Index (Wendling, Z. A. et al 2018). The EPI is a measurement of environmental trends and progress produced jointly by Yale University and Columbia University in collaboration with the World Economic Forum. It is based on 24 performance indicators across ten issue categories covering environmental health and ecosystem vitality. From the figure below it is clear that one of the sectors that have the highest













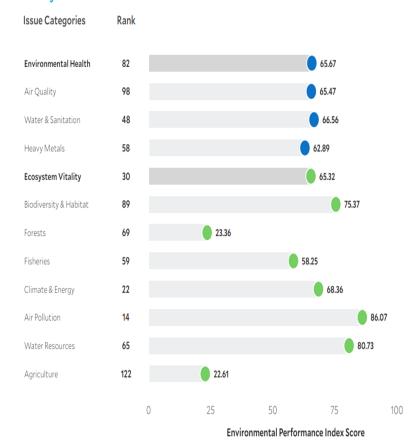






rank is "climate and energy". The agricultural sector lags behind because of the massive pesticide usage due to the equipment backwardness.





The government will boost the growth of energy production with the aim to increase the diversification of renewable resources from ecological and environmentally friendly alternatives in order to ensure a more sustainable development. The diversification of resources for renewable energy production is of paramount importance, as it has been pointed out in the National Action Plan for Renewable Energy Resources 2015-2020. In fact, the country has relied so far on one main source, producing renewable energy from hydropower plants. However many other renewable resources have been identified as strategic to increase the amount of renewable energy produced by the country, such as the production of bio-diesel from agricultural waste materials or the exploitation of the numerous untapped geothermal springs around the country. Albeit the geothermal power has been identified as a strategic



















source of energy, any specific provision has been adopted so far by the law to exploit the potential of those springs.

One of the strategies pursued in order to reach higher levels of sustainable energy production is the implementation of new net energy measurement schemes from solar and wind power plants for all self-producers, family customers or businesses. Hence, those investments in renewable energies not only will promote the production at all level but also in different economic sectors. The beneficiaries of these investments are individuals, firms and all the self-producers of renewable energies that operate in the market, from agricultural to industrial sectors. The expected investments in power generation plants from solar sources are around 20 billion leks, where up to 2020 will be installed about 50 MW by regulated tariffs and wind energy sources, investments expected to be approximately 8 billion, up to the year 2020 will be installed 30 MW with regulated tariff. As for the new water resources, the Government will keep pace of the growth of these resources, creating a favorable climate investment for them, with an expectation for future private investments of about 53.2 billion, with a capacity of about 300 MW installed (PROGRAMI QEVERISËS 2017-2021).



Finally, according with the Implementation Report the renewable energy sector in Albania is well advanced, as well as the environment sector. The energy efficiency sector lags behind the aforementioned sectors.

% Structural Funds at regional level for eco-innovation

% of ROP financing for eco-innovation: **n/a**



















Which sector is						
the priority of the						
region for eco-						
innovation			n/	'a		
(Industry,						
Agriculture,						
Public buildings,						
Transport, etc).						
Which are the						
Beneficiaries of						
eco-innovation			n/	'a		
investments						
(SMEs, big						
enterprises,						
farmers, etc)						
Please provide	Sustainable	biomass	heated	areenhouses	have	been

Please provide some examples of important investments on eco-innovation in agriculture in your region and explain how they were financed

established in Lushnjë in Albania. The project is working to popularize the production of bioenergy agro-industries in Albania. It offers financial and technical assistance to small and medium enterprises to increase the use of the technology. Traditional boilers fueled by diesel or other fossil energies have been replaced by modern boilers that run on biomass, in order to heat greenhouses and create an indoor microclimate suitable for crops cultivations. New boilers are fueled by burning the dried solid remains of olives that are left over after pressing for oil. Actually 10 enterprises applied for the UNIDO support to install modern biomass boilers. However the pilot project hopes to involve at least 15 small and medium enterprises. Many benefits derive from this new technology usage. In fact the olive pomace is cheaper than the diesel, the cost is around 100€ per tonne and it can be easily collected in the surrounding area of greenhouses. Moreover the price of the pomace is more stable on the market giving to farmers the chance to plan ahead. Hence, the innovative boilers are more sustainable and costeffective than the traditional heating systems, in terms of environmental protection and equipment cost reduction.

Furthermore, after the installation of the biomass fueled boilers in greenhouses farmers can grow plants twice as faster as before. As a result, after the installation of this new technology

















it is now possible to produce three harvests per year rather than two. Besides, the yield has seen an increase of 40% with a positive repercussion on the turnover. In addition, the high produced in the biomass vegetables greenhouses are exported and branded as organic because they don't need to be frozen. Therefore, they can be sold at a higher price in the market. The project for the installation of sustainable biomass boilers to heat greenhouses has been carried with the United Nations Industrial Development Organization (UNIDO) in partnership with Global Environmental Facility. The project has been funded with a grant provided by UNIDO and a loan provided by the project partner bank ProCredit.

Are innovative greenhouses amongst the investments financed in your region? If yes, please provide information about major investments

Innovative greenhouses are amongst the investments financed in the region. In particular the following 2 cases have been identified in Albania:

Sustainable biomass heated greenhouses have been established in Lushnjë, a city in west-central Albania, located in the County of Fier. More information about this project are presented above.

Italian greenhouse builder Europrogress has recently completed a turnkey greenhouse project in Albania. For their client Eco Green SHPK, Europrogress built two structures from their high tech Multiart series. The greenhouse project consists of two separate structures and has a total size of 5000 square meters. The first section is a 12,8 meters wide Multiart structure with 5 bays of 27 meters, and the other one is a combined 9,6 / 12,8m Multiart structure with 4 bays with a length of 72 meters. The height under the gutter of the project is 4 meters. The project, which will be used to propagate young plants, was completed turnkey by Europrogress. The Italian greenhouse manufacturer did not only deliver their structures, but was also responsible for the complete delivery and installation of the thermal screen systems, propagation benches, irrigation system and water tanks, bench heating systems and the lighting and electrical installations. The greenhouses are furthermore equipped with an exhaust fan system, top ventilation single ridge windows in



















each bay, plus automatic windows on the side and front gables. As well as this, all ventilation windows and doors are equipped with anti-aphid netting. [www.hortidaily.com]

2.2 Financial schemes for eco-innovative investments in the partner region

Please, use the following table for each financial scheme/tool

Identified Financial tool / scheme	Interreg IPA II cross-border cooperation
	programme "Greece - Albania 2014-
	2020"
Short description of the tool/scheme	The 2014 - 2020 Interreg IPA CBC Greece
(name, objectives, budget, responsible	– Albania is an example of the investment
authority)	strategy to boost the sustainable
	development The overall budget of
	Interreg IPA II cross-border cooperation
	programme "Greece - Albania 2014-
	2020" is EUR 35.965.222 (EU
	contribution). The 10% of the total
	budget, 3.596.522 euro, is bounded to
	the thematic priority 'b' that is
	concerned with the environmental
	protection , the promotion of the
	climate change adaptation and
	mitigation, the risk prevention and
	management. The total operation
	budget is 54.076.734,00 euro. The
	regions involved are: Region of Vlorë,
	the Region of Gjirokastër, the Region of
	Korçë and the Region of Berat in Albania.
Funding rate (%)	85% by EU, 15% by national government
Maximum funding (€)	1.000.000,00 € per project
Beneficiaries	- National, regional and local authorities
	and their institutions dealing with natural
	and cultural heritage, and regional
	development planning;
	- Protected area management bodies
	and bodies responsible for environmental



















	protec-tion, cultural asset management		
	bodies, museums, art collections and		
	other cultural organizations		
	- Non-governmental organizations, non-		
	profit-organizations and other civil		
	society associations dealing with natural		
	resources, and cultural issues.		
	- Collective professional organizations		
	of the tourism industry.		
Area of application	Cross-border		
Feasibility	The program is concerned with the		
	environmental protection and the		
	promotion of the climate change		
	adaptation and mitigation, however no		
	specific funds are provided to the		
	construction of innovative		
	greenhouses.		

Identified Financial tool / scheme	The "Balkan-Mediterranean 2014-2020"
	transnational cooperation program
	(TNCP)
Short description of the tool/scheme	In this program there are two priority
(name, objectives, budget, responsible	axis. The first one is concerned with
authority)	'Entrepreneurship & Innovation", the
	second one is concerned with the
	'Environment'. The aim of the first axis is
	to promote entrepreneurship, facilitating
	the economic exploitation of new ideas,
	fostering the creation of new firms,
	supporting the capacity of SMEs to grow
	in regional, national and international
	markets, and to engage in innovation
	processes. The beneficiaries are small and
	medium enterprises, the agricultural
	sector and the fisheries and aquaculture
	sector. The aim of the second axis is to
	preserve and protect the environment



















and promote resource efficiency. The selected investment priorities for the second axis are:

- -the conservation, the protection, the promotion and the development of natural and cultural heritage;
- The promotion of innovative technologies to improve environmental protection and resource efficiency in the waste sector, water sector and with regard to soil, or to reduce air pollution. The "Balkan-Mediterranean 2014-2020" is endowed with a total ERDF allocation of 28.330.108,00 Euros. The total support from the Instrument for Pre-Accession (IPA) fund Assistance account 5.126.138,00 Euros. The priority axis 1 accounts for 36% of the total cooperation program budget. Priority Axis 2 accounts for 57% of the total cooperation program budget. The remaining 7% of the total budget is bounded to the technical assistance developed within the priority axis 3. The ERDF support to develop the first priority axis is 10,198,839.00, out of which 30.48% is financed by the ERDF, the 5.52% is financed under the IPA II program. The budget to develop the second priority axis is 16,148,162.00, out of which 48.27% is financed by the ERDF and the 8.73% is financed by IPA II. The budget provided to the third priority axis is 1,983,108.00, out of which 5.93% is provided by the ERDF and the 1.07% is provided by the IPA II program. The total budget of the program is € 33.640.617 out of which € 28.330.108 are provided by the European Union and € 5.310.508 are provided by national governments.



















Funding rate (%)	85% financed by European Union
Maximum funding (€)	The maximum project budget for the first
	priority axis is € 1.000.000,00, the
	maximum for the second priority axis is €
	1.500.000,00.
Beneficiaries	The beneficiaries of the first priority axis
	are:
	-umbrella organizations of SMEs (such as
	chambers of commerce, of industry,
	economic chambers and other legal
	entities representing SMEs or SMEs
	professional networks in the program area);
	-development and planning agencies;
	-local, regional and national authorities
	involved in business' management;
	-technology transfer centers and
	universities;
	-innovation support networks;
	-non-governmental and Civil Society
	organizations.
	For the second priority axis the
	beneficiaries are:
	-local, regional and national authorities;
	-environmental and development
	agencies;
	-protected areas management
	organizations and bodies;
	-non-governmental and Civil Society
	organizations;
	-stakeholders dealing with environmental
	legislation.
Area of application	Regional, 28.748 km2, 9% of the country
	total area.
Feasibility	The program is concerned with the
	environmental protection and the SMEs
	innovation, however no specific funds
	are provided to the construction of
	innovative greenhouses.



















Identified Financial tool / scheme	Interreg V – B Mediterranean (MED)
	Cooperation Program 2014-2020
Short description of the tool/scheme	The Interreg MED is a transnational
(name, objectives, budget, responsible	program that supports the sharing of
authority)	experiences, knowledge and the
	improvement of public policies between
	national, regional and local authorities
	and other territorial actors of the MED
	area eligible region. It includes 57 regions
	from 10 different EU countries and 3
	candidate countries. The program is co-
	financed by the European Regional
	Development Fund (ERDF) with a total
	budget of 224,322,525 million for the
	2014-2020 periods. The program is
	aimed at achieving a long term
	development of the Mediterranean area
	and to strengthen transnational
	cooperation among regions and
	countries involved in the project. In
	particular in the priority axis 1 is aimed at
	promoting the business investments in
	R&I, developing links and synergies
	between enterprises, enhancing
	investments in research and development
	of innovative products, promoting the
	eco-innovation. The second priority axis
	is aimed at increasing the energy
	efficiency, lowering the level of CO2
	emissions and boosting the renewable
	local energy usage.
Funding rate (%)	85%
Maximum funding (€)	The program provides funding for two
	categories of modular projects: single-
	module and multi-module. The Project
	Module 1 (M1): "Studying" provides
	funds up to 600.000 €. The Project
	Module 2 (M2) "Testing": range from 1.2
	·



















to 2.5 million €. The Project Module 3
(M3) "Capitalizing": range from 600.000
up to 1.2 million €. The Project Module 1
and 2 (M1+M2) "Studying and Testing"
provides funds from 1.8 up to 3 million €.
The Project Modules 2 and 3 (M2+M3)
"Testing and Capitalizing" provides
funding from 2.5 up to 3.6 million euro.

Beneficiaries

The beneficiaries of the first priority axis

- local, regional and national authorities;
- -intermediary bodies in charge of innovation and economic development;
- -regional development agencies;
- -universities and other education and training institutes;
- -research institutes, innovation centers and clusters;
- -business support centers and agencies, technologies intermediaries, and technology/knowledge transfer institutions;
- -public and public equivalent bodies dealing with innovation, industrial policy, SMEs and training;
- -Chambers of Commerce, business associations, platforms, economic operators.

The beneficiaries of the second priority axis are:

- -local, regional and national authorities;
- -local, regional and national authorities dealing with energies issues;
- -energy agencies;
- -research institutes, universities and energy clusters for energy and low carbon technologies;
- -public and private energy suppliers;
- -association of SMEs and economic



















	operators (energy market, buildings,		
	houses, ESCOs);		
	-users' and business associations.		
Area of application	Transnational		
Feasibility	The funding program is strictly related to		
	the green house project because it is		
	aimed at improving, among others, the		
	agri-business sector performances		
	boosting the technological innovation		
	and at increasing the renewable energy		
	usage, thermal energy among others, in		
	public and private sector in order to		
	reduce the amount of fossil fuel usage		
	and the greenhouses gas emission.		

















3. Assessment of the findings

3.1 Methodology for the assessment of the financial schemes

The financial schemes and tools, identified by the partner, are evaluated based on the following features developed by the task leader (University of Thessaly):

Indicator/Scoring	1	2	3	4	5
% of funding	0,1-10%	10,1-20%	20,1-30%	30,1-40%	40,1% and
					above
Availability to	Once per 3	Once per	Annually	Bi-	Multiple
beneficiaries	years	2 years		annually	times per
					year
Maximum amount	Up to 50.000	50.001-	100.001-	300.001-	Above
of funding (in euro)		100.000	300.000	500.000	500.000
Advance payment	0-10%	11-15%	16-20%	21-40%	Above
					40%
Years until full	Above 6	6	5	4	<3
payment					

3.2 Assessment of the identified schemes/tools

Based on the methodology presented in section 3.1, the table below evaluates (from 1-5) the identified tools/schemes financing eco-innovative investments.

Financial		Evaluation indicator					
Tool/ Scheme		(Lo	ow 1-High 5)			Score	
	% of funding	Availability to Beneficiaries	Maximum Amount of Funding	Advance payment	Years until full payment		
Interreg IPA II cross-border cooperation programme "Greece - Albania 2014-2020"	5	3	4	1	5	18	
The "Balkan-	4	1	4	1	5	15	



















Financial	Evaluation indicator					Total
Tool/ Scheme		(Lo	w 1-High 5)			Score
		Availability	Maximum		Years	
	% of	to	Amount	Advance	until full	
	funding	Beneficiaries	of	payment		
			Funding		payment	
Mediterranean						
2014-2020"						
transnational						
cooperation						
program						
(TNCP)						
Interreg V – B						
Mediterranean						
(MED)	5	3	3	1	5	17
Cooperation	3	3	3	1	3	1/
Program						
2014-2020						

3.3 Analysis of the assessment

There is not thorough data and exhaustive information about the percentage of GDP that the Albania government bounds to the development of eco-innovative technologies. According to the information provided by the World Bank on the state of advancement of Albanian investments on research and technologies, the country has undertaken a number of strategic reforms and policies to boost the development of a research and development system, in order to catch up with other Europeans countries in innovation and technological advancements. In fact, since 2006 when the country has signed the Stabilization and Association Agreement to pave the way to join the EU the country reorganized the Academy of Sciences to reflect the model used by many other European countries. Moreover, the higher education autonomy has been improved; the curricula and education standards have been revised; monitoring and quality auditing mechanisms have been adopted; and higher education public institutions have been integrated with research institutes to enhance research capabilities. The first national strategy for innovation has been implemented in 2009. The following year, in March 2010, it has been created the Agency for Research, Technology and Innovation (ARTI) under the national strategy to modernize the operational structure and governance of innovative centers with the aim to foster the technological transfer. However, as it has been pointed out by the WB some issues still need to be addressed. In fact, the country lacks of human capital,



















the level of public financing remains low and the governance of research systems is weak. The number of national researchers and the quality of research institute is poor. Experts, in fact, often lack of the adequate specialization, of the sufficient amount of funding to produce high-quality research and studies or of appropriate structures where conducing researches. Therefore, the country should implement a more effective strategy to boost the research and development sector in order to attract more international investments and to reverse the migration trend with the aim to provide a more favorable environment even for the Albanian researchers that went to study abroad. Attracting qualified people into the Albanian Research System represents a good opportunity for the country to create scientific excellence in key research areas, to contain the brain drain phenomena and to strengthen links between science and companies to foster innovation as a basis for future growth and job creation. The enhancement of the R&D system will have positive repercussion for Albania in catching up with other European countries and in the creation of value added goods and services that will help to escape from the middle-income country status. The percentage of the government funding for R&D remains low, about 0,2%. Even the private investments in this sector are very limited; companies in the country are mostly SMEs characterized by labor-intensive and low-cost production strategy. The country mainly relies on European Union funds to reach higher level of competitiveness in this sector. The first financial scheme identified provides funds for the environmental protections and the climate change mitigation in the country, however there are no specific measures related to the construction of sustainable greenhouses. The program is financed by EU that provides 85% of the total budget and by the national government that provides the remaining 15% of the total budget allocation. The second financial tool identified TNCP presents two priority axis. The aim of the first axis is to promote entrepreneurship, facilitating the economic exploitation of new ideas, fostering the creation of new firms, supporting the capacity of SMEs to grow in regional, national and international markets, and to engage in innovation processes. The selected investment priorities for the second axis are the conservation, the protection, the promotion and the development of natural and cultural heritage and the promotion of innovative technologies to improve environmental protection and resource efficiency in the waste sector, water sector and with regard to soil, or to reduce air pollution. The second development axis is particularly concerned with the development of new technologies in SMEs and groups of enterprises. A particular attention is devoted on the technological transfer and on the know-how exchange among research centers and institutions and actors small and medium enterprises, in order to accelerate the advancement of new technologies and improve the market performances of firms. Albeit the concerns on the environmental protection and on the know-how exchange and the technological



















advancements of firms, the program does not provide specific funds for ecoinnovation in the greenhouse sector. The third financial scheme identified is the Mediterranean Cooperation Program; it is a transnational program that includes 57 regions from 10 different EU countries and 3 candidate countries. The program involves actors from the quadruple helix such as SMEs, research institutes, nongovernmental organizations, public and public equivalent bodies dealing with innovation. It is strictly related to the development of cutting-edge technologies in agriculture with a particular focus on the introduction of innovative technologies in greenhouses.



















4. Conclusions

The Research and Development System in Albania presents some important issues that have to be addressed. The limited national funding for eco-innovative investments for example represents one of the main obstacles in the creation or implementation of effective strategies that can help the country to catch up with other European countries. Despite in the last decade some important reforms and measures have been undertaken the percentage of GDP bounded to R&D sector is still poor, less than 2%. The country mainly relies on EU funds and the private sector investment on state-of-the-art technologies is almost inexistent. It is not possible to retrieve thorough data regarding the percentage of the GDP used for eco-innovation; however it must be below the 2%. The country shall undertake more initiatives in order to attract researchers and investors and also to foster the R&D system. The benefits that can derive from the adoption of a national strategy that can enhance the production of eco-innovative technologies are multiple, from the job creation and the optimum exploitation of natural resources to the reduction of the greenhouses gasses. The adoption of a national strategy that can enhance the production of ecoinnovative technologies will also contribute to EU strategies such as Circular Economy and Green Growth and it will improve the quality of life of the citizens, creating also better economic conditions.















