



MEDOSSIC

***Mediterranean organization structure and strengthening
of innovation capacities for sustainable development
no. 1G-MED08-289***

Benchmarking report

Med Programme

Priority-Measure 1-2

Axe 1: Strengthening innovation capacities

***Objective 1.2: Strengthening strategic cooperation between economic development actors and
public authorities***

**Working component: 3 Existing situation analysis - Synthetic Diagnosis-Good Practices
Investigation - Benchmarking**

Action: 3.23 Benchmarking report
Deliverable: 3.23.
Version: 01
Date: 27.5.2010
Status: Final version
Type: Report
Availability: Public
Responsible Partner: LP (RDA of Inner-karst Region)
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Part 1: IDENTIFICATION SHEET

Ref. No of project	1G-MED08-289
Project acronym	MEDOSSIC
Project full title	Mediterranean organization structure and strengthening of innovation capacities for sustainable development

Security (distribution level)	Public
Date of delivery	27 may 2010
Deliverable number	3.23
Type	Report
Status & version	Final version
Number of pages	24
Responsible Partner	RDA of Inner - karst region
Other Contributors	RDA of Inner - karst region
Author(s)	Andrej Kohont, Jana Nadoh Bergoč
Keywords	Ecology, innovation, (eco)innovation, MEDOSSIC, Programme MED, EU, Coastal-Karst Region, Region of Crete, Cyprus, Ferrara and Ravenna Provinces, Inner-Karst Region, Malaga, Marche Region, Primorsko Goranska County, South East Slovenia Region, policy, initiatives, programmes, projects, regional production system.
Abstract (for dissemination)	The benchmarking report contains guidelines and lessons to be learned for partners, included in the Medossic project in the area of supporting eco-innovation.

Part 2: INTRODUCTION

As explained in the document “Mutual learning platform - blueprint for regional innovation benchmarking” (2006) the term “benchmarking” is understood as an improvement process in which a company, organisation or any other (multi-organisational) system carries out three processes: (1) compares its performance against best-in-class systems; (2) determines how these systems have achieved their superior performance and (3) uses the collected information to improve its own performance. Basically, all processes can be the object of benchmarking. Thus, benchmarking is treated as a continuous process in which systems continuously seek to challenge their practices.

The project Medossic (*Mediterranean organization structure and strengthening of innovation capacities for sustainable development*) aims to creating transnational network structure with the specific goal: to improve the implementation of regional policies in innovation and increase the capacity for sustainable development by encouraging eco-innovation. This benchmarking report pertains to the analysis of eco-innovation and eco-innovation support in regions, included in the Medossic project: Crete, Cyprus, Malaga, Ferrara and Ravenna provinces, Marche region, Goransko Primorska county, Coastal-Karst region, Inner-karst region and South East Slovenia region. Based on regional existing situation analyses, the synthetic report and partner’s individual assessment of the situation in their region and in the Medossic area this report emphasizes some guidelines, directed to solving specific dilemmas of the Medossic areas. At the same time some important conclusions were drawn, forming lessons to be learned for partners when designing and implementing strategic and operational plans that follow.

It is to be noted that guidelines and lessons, presented in this report are to be considered in relation to existing situation in each region, participating in the Medossic project. These guidelines are a product of comparative overview of the situation in the Medossic area and stand as benchmark points for partners when assessing the applicability of these suggestions in their regional and/or national environment.

Part 3: ABOUT THE MEDOSSIC PROJECT

The project Medossic (*Mediterranean organization structure and strengthening of innovation capacities for sustainable development*) aims to creating transnational network structure with the specific goal: to improve the implementation of regional policies in innovation and increase the capacity for sustainable development by encouraging eco-innovation. In this way the project is coherent with the first priority axis of the Mediterranean programme which aims at strengthening innovation capacities.

In addition to the lead partner, Regional development agency of Inner-karst region (Slovenia), nine other partners also participate in the Medossic project:

- Regional development centre Koper (Slovenia)
- Development centre Novo mesto (Slovenia)
- Larnaca district development Agency (Cyprus)
- TecnoMarche - Scientific and Technology park of Marche Region (Italy)
- DELTA 2000 Soc. Cons. a r.l. (Italy)
- Provincial Government of Malaga (Spain)
- Eastern Crete Development Organisation, OANAK (Greece)
- Regional development agency Porin Rijeka (Croatia)
- Directorate for small and middle enterprises Monte Negro (Monte Negro)

The project formally started in April 2009 with the establishment of partnership consortium, which has commenced the first phase of the project in February 2010. Within this phase several activities were provided: partners performed national existing situation analyses on eco-innovation and eco-innovation support within individual participating regions. Based on national existing situation analysis a synthetic report for the Medossic area was prepared, emphasizing differences between partner's included in the project (economy, political framework, history, culture ...) on one hand and stressing commonalities on the other. Further, due to the differentiation between partners' regions, an exchange of practices and experiences in eco-innovation and eco-innovation support proves to be of extreme importance. Thus, a catalogue of good practices has been prepared, presenting some of the selected good practices on eco-innovation and eco-innovation support in all participating partners' regions. Following all mentioned activities, the preparation of benchmarking report is in order, offering a set of acknowledgments pertaining especially to eco-innovation support. This document presents the latter.

On the basis of existing situation analyses, synthetic report, best practices investigation results and the benchmarking report, strategic and operational regional plans will be developed in each participating region. Namely, the actual outcome of the project is to establish a pilot structure in each region, which would

offer support for eco-innovation to all identified stakeholders. This might include counselling, coordinating and providing information to target groups, depending on the requirements, identified within the investigations of existing situation in all regions. By strengthening the cooperation among stakeholders from economy (chamber of commerce, SME's), representatives from public institutions (national institutions, public research organizations, universities) and other organizations (incubators, technological centres etc.), the platform for better support to innovation may be built. In this way consortium of the project will support long term implications such as economy growth, employment and sustainable development.

The total budget of the project is 1.126.581 €, the subsidy granted by the ERDF is 905.579 Euros or 80 percentages of total eligible costs. The project will last two years.

Part 4: SPECIFIC CHARACTERISTICS OF ECO-INNOVATION SUPPORT IN THE MEDOSSIC AREA AND ITS REGIONS

The following chapter presents some of the basic characteristics of the Medossic area and its regions, specifically, that influence the attainment of the Medossic project's objective: to establish an appropriate level of support for eco-innovation in all regions, participating in the Medossic project and thus to contribute to strengthening innovation capacities in all regions. Thus, chapter five includes an indication of general regional characteristics and data on eco-innovation, based on which two groups of regions have been differentiated, demanding also somewhat differentiated approach to establishment and encouragement of eco-innovation support. This chapter also incorporates an overview of the existing national and regional policies and initiatives, concerning eco-innovations and finally, an overview of regional production systems and its characteristics. These information offer a platform for further investigation of strenghts and weaknesses of eco-innovation support in the Medossic area.

4.1. General regional indicator and data on eco-innovation

The regions are very different among themselves in their geographical and cultural contents and their size. The differences in size of the regions are reflected in this way by the surface of the smallest region being 9.3 times smaller than the biggest one, with a similar difference in the population which is 30 times smaller. The differences in the GDP of particular regions are also extremely big, namely a 69 times difference!

It is clear that **we deal with few categories of regions**. On one hand there are both Italian regions and the Malaga region, which are all very big in terms of population (from approx. 700,000 to 1.5 mio) and GDP (from approx. 20,000 mio EUR to 41,000 mio EUR). On the other hand there are some very small regions like the Inner-karst with only 52,000 population and the regional GDP of 591 mio EUR or weak regions according to GDP per capita like the Primorsko Goranska County with 9,149 EUR GDP per capita (in comparison with Ferrara and Ravenna with 28,008 EUR GDP per capita). Very big differences are also present between the regions in the area of size of the companies. Even if we do not take in account the figures for Ferrara and Ravenna, it is clear that, for instance, in Crete the great majority (99.5%) of companies are micro or small. On the other hand in the Marche region this percentage reaches far less - 93.7%. In some other categories like the share of the regional GDP in the national GDP or the percentage of persons in employment, the differences between regions are relatively small.

Deriving from this perspective, we have divided the regions within the Medossic area to two groups: “**Large regions group**”, which includes Malaga, Marche region and Ferrara and Ravenna region and “**Small regions group**”, which includes Cyprus, Crete, Primorsko Goranska County and all three Slovenian regions.

There are very **big differences between regions in the share of GDP allocated for R&D**. Ferrara and Ravenna have reserved the biggest share of GDP for R&D among the analysed regions (these provinces have also large number of realised (eco)innovation projects which is probably related). Cyprus and South East Slovenia also reach high shares. However, these figures should be regarded with care since there may be some specific relations between province/region/national GDP and financing for various programmes through various channels that are important.

Clearly **most financial funds for R&D in the selected regions originate from the business sector, followed by higher education funds and government funds**. Private non-profit funds and foreign funds (Cyprus is an exception) do not have much influence in this respect. On one hand the strong influence of business funds indicates a positive and close co-operation with the business sector, while on the other hand as it is the case for the Inner-karst Region, it also indicates that there are none or only a few government funded centres of knowledge in the region. A high share of applied research (present for instance in the Slovenian regions) may also indicate that there are only a few centres of knowledge in the region that deal with basic research. Surely, **an effort for the decentralisation of knowledge on the national level is a challenge for all MEDOSSIC regions**. Interestingly, the share of female researches differs a lot and does not seem to be connected much to the specifics of the country, but more with the nature of the industry that prevails in the region; for instance, the metal processing industry in the Inner-karst with a 9% share of female researchers, and pharmacy in the South East Slovenia with a 55% share of female researchers on the other hand.

Cyprus leads with 4.5% of gross domestic expenditure on R&D (as % of regional GDP); however, in the total ratio Italy has the biggest share. Similar to the regional comparison, **most funds for R&D in the selected countries originate from the business sector** in the national level as well, followed by the higher education funds and government funds. Private non-profit funds and foreign funds (Cyprus is an exception) do not have much influence. However, the difference between the structures of regional and national graphs is the most important. In general, **the differences between the categories on the national scale are much smaller than on the regional one**. On the national level a great deal of funds for R&D (acquired by all regions in the country) are distributed to some specific centres of knowledge that are mostly situated in the capital or in some specific regions. This means that in most cases the regions pay more for R&D than they get back from the state!

There are relatively small differences among the MEDOSSIC regions in the area of New S&E graduates, age 20-29 (new on 1,000 inhabitants). On the other hand there are **big differences between shares of population with tertiary education (%)** with Cyprus having 30.5% and Italy only 12.9 %. **The differences are even bigger in broadband penetration (%)** of population from 2.7 in Greece to 13.1 in Italy. Slovenia leads with 15% in the indicator of participation in life-long learning; age 25-64 (%of population). The differences are smaller in the areas of the youth education attainment level (% of population age 20-24), Public R&D expenditures (% of GDP) and SMEs innovating in-house. On the other hand **the differences in business R&D expenditures (% of GDP) and innovative SMEs co-operating with others (% of SME) are much bigger**. Interestingly, Spain has relatively low ICT expenditures (% of GDP) in relation to an otherwise relatively good innovation performance. The use of organisational innovation is a strong point for Cyprus, which is a logical alternative to a country with a high economic share in services and a low one in industry. Results in the area of high-tech employment can be a bit distorted since the definition of high-tech can be interpreted in various ways. In sales of products new to market and new to company, Spain and Slovenia reach the best results. Italy seems to be especially strong in the scope of patents; however, in the scope of trade marks Cyprus and Spain are better.

It is clear that no individual result can reliably indicate a country's performance in innovation. The results should be regarded in a collective account, and only by understanding of particular situation within a selected country a real judgement can be formed. Nevertheless, **one can spot considerably good results in Italy and a bit poorer results in some other countries**. For all countries and regions, achieving better results in innovation remains not only a challenge, but a pure necessity in the scope of the global competitive situation.

On average, **the MEDOSSIC countries are relatively close to the EU 25 average** (all data are valid for 2007) in most analysed areas. However, there are **some exceptions** (with lower figures), namely in the area of **patents, ICT expenditure, sales of new-to-market products (% of sales) and employment in medium-high/high-tech manufacturing (% of all employees)**. Even more concerning is the **huge backlog in relation to the US and Japan** (as one of the world's most innovation developed countries) in the area of EPO patents per million population. On average the MEDOSSIC countries have a 5.6 times lower number of EPO patents than in Japan and 3 times lower than the EU average. The situation is even worse in the area of USPTO patents per million population where the backlog is 27 times higher in relation to the US and Japan! In the area of triad patents the backlog is 3 times higher in relation to Japan. The results in the area of Business R&D expenditures (% of GDP) are also low, where the backlog is 5 times higher in relation to Japan, the backlog in relation to the US is 3.7 times higher. Similarly,

low results are achieved in the area of % of population with tertiary education where the backlog is 1.7 times higher. Interestingly, the MEDOSSIC countries achieve very good comparative results to the US and Japan in the areas of community trademarks per million population and community industrial designs per million population.

4.2. Review of existing policies and initiatives adopted in eco-innovation field and the positive aspects and future challenges in the eco-innovation field

This chapter focuses to characteristics in regards to existing national and regional policies and initiatives, that are common to all regions, participating in the Medossic project. The information is based on national existing situation analyses of each region and the Synthetic report, prepared by the »Institut of Jožef Stefan« (Slovenia). Information in this chapter is presented in the way that incorporates the concern for the establishment of eco-innovation support: it is expected that based on these information suggestions on eco-innovation support will be provided, thus stimulating the establishment of eco-support structures within the Medossic area.

As emphasized several times there are significant differences in regions of the Medossic area. Based on the size of these regions, two groups have been identified: "Large regions group" (Malaga, Marche region and Ferrara and Ravenna region) and "Small regions group" (Inner-karst region, Coastal-Karst region, South East Slovenia, Cyprus, Crete, Primorsko Goranska region). It seems that these two groups differ also according to developmental level of eco-innovation capacities and simultaneously of eco-innovation support. Whereas there are some commonalities shared by all regions, it is important to identify also the differences in addressing the question of eco-innovation support in both groups, thus providing a starting point for learning opportunities and an exchange of experiences with the goal of better performance when establishing pilot structures for eco-innovation support in all regions, participating in the Medossic project.

National policies of the Medossic regions typically **all stress high importance to both, innovation and ecology**. It is clear that on the declarative level none of the analysed countries have any specific deficiency on these areas. Nevertheless, there are some typical problems that exist in all regions:

- Within national governances there is **no specific organisational structure that is related to eco-innovation in particular**. In most cases countries have two policy making pillars related to eco-innovation, either the innovation support and stimulation pillar or the ecology (environment and spatial planning). In

most regions it applies that eco-innovation structures on national level are non-existent, the closest being inter-ministerial planning bodies set-up in some countries (Spain, Cyprus, Italy).

- Some countries (like Slovenia, Italy, to some degree also Spain) are faced with **obvious fragmentation of organisational structure and various supporting bodies related to eco-innovation**. Various new policy makers or support bodies have just been set-up and their relations and functions have not yet been optimised.
- Significant to the nature of eco-innovation policy of the analysed countries is quite **large dependency on the economic and other specifics of each country**. EU policy in the field of eco-innovation has a very strong influence on the national policies. Its influence directly originates in one way from the given strategic directions. However, indirect influence originates from EU funds.

An important finding, deriving from the comparative analysis of existing situations in regions, participating in the Medossic project, is also that there are **only a few of initiatives, actually combining innovation and ecology**, whereas in most cases these areas are separated.

Looking at (eco)innovation policies and initiatives on a regional level, the following can be applied: there are some relative small differences in regions in the frame of political will and declarative support to the eco-innovation policies, but there are **very big competence differences between regions and the national level**. There are also big differences between regions in the development phase of (eco)innovation policies, which is also a result of different stages of the accession to the EU. In all cases **eco-innovation is gaining importance**, however the implementation effectiveness and funds for stimulation vary a lot between regions. Important stimulus is presented by EU funding programmes.

Common to all regions is that all have various kind of eco-innovation initiatives. However, there are **big differences in the scope and number of (realised) initiatives and projects**. Italian and Malaga regions have a great variety and numbers of initiatives, several initiatives are also detected in Crete and Cyprus, whereas somewhat less of initiatives are present in Slovenian regions and Primorsko - Goranska County.

As evident at a national level, it is also typically for all regions that the **collaboration between innovation initiatives and ecological initiatives is not big**. It seems that ecology is treated mostly related to infrastructure issues, also national ministries and regional governance bodies that are responsible for ecology are in most cases bodies that are in their essence not innovation oriented. One of the possible improvements in this respect would be to put these two areas under

the same governance organs, this should result in initiatives related to the ecology that would be more innovation and entrepreneurial oriented.

Table 5.2.1. offers an overview of the identified differences within the Medossic regions concerning (Eco)innovation policies and initiatives at national and regional level within the two groups (»Large regions«, »Small regions«).

Table 5.2.1.: (Eco)innovation policies and initiatives at national level

Large regions group (Malaga, Marche region, Ferrara and Ravenna)	Small regions group (Inner-karst region, Coastal-Karst region, South East Slovenia, Cyprus, Crete, Primorsko Goranska region)
<ul style="list-style-type: none"> ▪ More emphasis on eco-innovation specifically. ▪ Eco-innovation initiatives strategically supported on national level. ▪ (Eco)innovation initiatives and policies on a regional level as well. ▪ Relatively intensively strategically supported (eco)innovation initiatives with programmes and policies on national level. ▪ Effective participation of regions in the planning and implementation process and a strong role in influencing central national policy decisions addressing specific territories. ▪ (Eco)innovation policies on regional level are very developed and implemented both in research centres and enterprises and significantly supported by additional funds. 	<ul style="list-style-type: none"> ▪ Lack co-ordination and funding due to fragmentation of organizational structure for eco-support on national level. ▪ (Eco)innovation initiatives in recent years dealing with financial support to various related projects supported by national programs. ▪ Regional development plans as basic tools for implementing individual initiatives.

When comparing “Large regions group” with “Small regions group” it is evident that the “**Large regions group**” puts more emphasize on the **eco-innovation specifically**, whereas it is to a larger extent typical for “Small regions group” that eco-innovation is not specifically addressed by the existing national and/or regional policies and initiatives. Rather, the subject of innovation and the subject of ecology are emphasized separately. Consequently, in terms of **eco-innovation support** “Large regions group” is more developed, characterized by **strategically oriented support on national level as well as on regional level (including also financial support)**. Regions in “Large regions group” (for example, Italy) are typically effectively participating in the planning and implementations processes and hold a **strong role in influencing central government policy decisions concerning specific territories** (regions). For example, in addition to a variety of programmes and policies, designed to support (eco)innovation in Spain, a regional

ministry for supporting innovation has been established as well, in order to bring support mechanisms closer to (eco)innovators. Thus, **(eco)innovation policies on regional level in “Large regions group” also are very well developed and implemented** in all relevant subjects of (eco)innovation and (eco)innovation support (in research centres, enterprises etc.) and additionally supported by funds.

In “Small regions group” support to **(eco)innovation is evident predominantly on national level** (and not also on regional level) which in practice is **not as strategically oriented** as applies for “Large regions group”. For example, (eco)innovation initiatives recorded in recent years in Greece were dealing mostly with financial support to various related projects deriving from national programmes. **The foundation for implementing individual (eco)innovation initiatives are usually regional developmental plans** that influence the orientation of programmes and projects conducted on a regional level. Nevertheless, **regions in “Small regions group” do not hold a strong role in influencing national policy decisions** and are faced with **lack of coordination of politics and initiatives supporting (eco)innovation**. As already emphasized, due to fragmentation of organizational structure for eco-support on national level and the absence of initiatives supporting (eco)innovation, **funding of such programmes and projects is often unavailable or unattainable by (eco)innovators individually**.

It is to be noted that Cyprus holds a specific role within the Medossic area. Based on its basic characteristics such as size, population, GDP it is fundamentally a part of “Small regions group”. Nevertheless, observing its (eco)innovation and (eco)innovation support competencies, its performance could be ranked above average and more related to “Large regions group” (for details, see national report Existing situation analysis in Cyprus (available at http://www.medossic.eu/file/open/29_42eabd13aab74/ESA_%20CYPRUS_FINAL.pdf)).

4.3. Review of the regional production sectors regarding (eco)innovation field and its positive aspects and future challenges

Among the most important production sectors as identified based on individual regions' existing situation analyses (based on their contribution to regional BDP) are the sector **C+D mining, quarrying and manufacturing** and also **G wholesale, retail, certain repair and F construction** - that is, industry has the prevailing role in the Medossic regions. Particularly in coastal regions, **tourism, real estate, renting and business activities** are also of great importance. Concerning the potential of individual sectors in terms of eco-innovation the following applies for the Medossic regions: production sectors within Medossic region in most cases deal with **product and service innovation, followed by environmental technologies and green-system technologies**. In cases of Cyprus, Marche region and South-East Slovenia the **organizational eco-innovations** are also present. Looking into differences among "Large regions group" and "Small regions group" it is noted that the large regions are usually dealing with greater variety of eco-innovation: in Marche region for example, the identified types of eco-innovation include all four categories (environmental technologies, organizational eco-innovation, product and service innovation as well as green-system technologies). However, in Crete, for example, product and service innovation is the most evident. This does not necessary imply that the developmental level of eco-innovation is low in "Small regions group", but it indicates that there are several specific circumstances and motivational stimulus that encourage innovation activities to diversify.

Areas with the most growing eco-innovation opportunities in general include **eco-tourism, sustainable sources of energy and waste treatment**.

Based on comparative analysis of all national existing situation analysis reports SWOT analysis has been prepared, emphasizing strengths, weaknesses, opportunities and threats within the Medossic area. Following some of the most emphasized observations of SWOT analysis, some guidelines regarding eco-innovation support were developed.

It is to be noted that guidelines, presented in this chapter are to be considered in relation to existing situation in each region, participating in the Medossic project. These guidelines are a product of comparative overview of the situation in the Medossic area and stand as benchmark points for partners when assessing the applicability of these suggestions in their regional and/or national environment.

One of the most evident observations, following the performed analyses within the Medossic area is that there is a **clear gap between entrepreneurs and academic professional**. Consequently, it is extremely important that the linkage between

business sector and R&D is encouraged in order to support mutual operation on common eco-innovation projects. Activities, supporting this orientation are pertaining to **encouraging the creation and transfer of knowledge** by:

- Encouraging the development of a high level educational system and quality R&D organizations;
- Offering different possibilities for networking within business and also among business and other important stakeholders that contribute to creation and exchange of knowledge (so-called, institutions of knowledge, R&D organizations, universities etc.), locally and internationally. This kind of possibilities include organized discussions, round-tables, forums, meetings, seminars, presentations etc.;
- Fostering the creation of regional networks in the field of (eco)innovation: the Medossic project presents a good foundation for building such networks and serves as a good example for European-level networking as well.

Another observation of the Medossic area pertains to the **noted deficiency of financial funds**, especially those that support the conclusion of innovation processes. To direct existing and foreseen funds to this objective as well, it is necessary to encourage national and regional authorities to consider the financial support to local economies with eco subsidies and similar financial stimulus as well. Related problem refers to **acknowledged lack of coordination between innovation and ecology and lack of wider public interests** that in many Medossic regions serve as a stimulus for national and regional authority as well as the innovators themselves to concentrate to eco-innovation. In order to stimulate this kind of coordination it is necessary to direct activities of eco-innovation support structures to raising the awareness of the importance of eco-innovation within business sector and wider public and at the same time to promote the eco-way of living to the public. For these ends various means could be utilized, deriving from public relations and media activities, also including lobbying strategies etc. Also, it is noted that most of the Medossic regions **lack some kind of centralization of data** concerning (eco)innovation initiatives, programmes and projects. This hinders the inclusion of actual requirements of (eco)innovators into the process of planning and executing further initiatives, policies and programmes in the area of (eco)innovation and (eco)innovation support. It is thus crucial that regional and national databases concerning (eco)innovation and (eco)innovation are developed.

As observed, the inefficient utilization of existing funds is among other factors related to **inefficiency of organizational structures of organizations** who deal with (eco)innovations. Business is often faced with insufficient knowledge and resources to apply innovation to specific market niches, for applying for funds, for stimulating knowledge creation, transfer and dissemination by usage of management practices such as knowledge management etc. Within business these

dilemmas can be addressed by several activities such as the stimulation of marketing orientation for product and services sales and promotion enhancement within business organizations that deal with eco-innovations or training in specific knowledge for business such as knowledge management, financial project management etc. On the other hand, it is important to encourage fund providers to implement more user-friendly application processes and forms and to use other means for easing the process of applying for funds. Eco-innovation support structures hold a significant role within this process by offering assistance with the preparation of applications to those organizations that are not characterized by sufficient knowledge or resources for these tasks.

Finally, in all the Medossic regions progress in (eco)innovation is somewhat obstructed also due to **consequences of current global economic crises**. In many cases, processes of innovation are not enough stimulated although perceived as important. On the other hand, (eco)innovation might be a barrier of added values which would assist companies to overcome current economic situation - this is an idea that needs to be further stimulated and supported by means of financial funds and other support activities. As already mentioned, stimulation of the demand for eco-product and services by final customers present additional stimulation for (eco)innovation to business.

Part 5: ASSESSING STRENGTHS AND WEAKNESSES OF ECO-INNOVATION SUPPORT IN THE MEDOSSIC AREA

In the course of benchmarking report development partners of the Medossic projects were asked to provide their view and thinking about the development possibilities in their region as well as in the Medossic region as a whole. Six partners have contributed their views (Larnaca region, Coastal-Karst region, Inner-karst region, Ferrara and Ravenna region, Marche region and Malaga region), the following chapter presents their cumulative view.

5.1. Perception of partners on sufficiency of eco-innovation support in the Medossic area

The analysis of the data gathered shows that there are **only two regions that are relatively satisfied with the situation in eco-innovation support**, although they also observe some development possibilities. The main characteristic of all participating regions is that there is **still insufficient eco-innovation support provided by the local and the national public bodies**. In some cases the dispersion of institutions and resources is large and they are lacking specialised knowledge in (eco)innovation field. In addition, according to partners observation, (eco)innovation funds that are in most cases provided by government bodies should be **more easily accessed and oriented also to SMEs** and not predominately to large companies. In partners views main changes can be reached with the development of human resources, specialized in (eco)innovation knowledge and information providing.

5.2. Perception of partners on dilemmas faced when considering eco-innovation support in the Medossic area

Main sources of financial support in all Medossic regions are **European funding programmes**, among which Eco-innovation Programmes is the only specific scheme for funding eco-innovative actions specifically. In addition, another programme strictly related to environmental innovations and sustainable development is the LIFE programme. Also, most of the Medossic regions have the support of specific **national programmes** and in some cases also **regional funds and funds deriving from local and provincial corporate bodies** are available. Also, over the year it

seems that funding amounts have been raised, reflecting more awareness of the importance of innovation practice considering sustainable development principles.

Nevertheless, the majority of the Medossic project partners report that the organizations established for (eco)innovation and (eco)innovation support are often extremely **bureaucratic, uncoordinated** and do not possess enough financial resources and other resources in order to be utterly significant for (eco)innovation support, especially on regional level. Different initiatives are not systematically organized into a precise scheme completely concentrated to eco-innovation. Rather, they are **fragmented and related to issues more generally linked to environmental aspects**.

Existing universities' and academic support for eco-innovations is also perceived as insufficient by the Medossic project partners. In some cases, universities and similar organizations are not even present in the region. In such cases it is necessary to **search for knowledge outside the region**. In addition, **scarce research opportunities** available, low payment for researchers and the difficulties found by young people to enter the labour market greatly hinders the culture of (eco)innovation in some Medossic regions, thus contributing to lower levels of (eco)innovation.

5.3. Perception of partners on encouragement mechanisms of eco-innovation support in the Medossic area

Although the majority of the Medossic project partners share the view that (eco)innovation support is insufficiently developed in the Medossic area, they at the same time recognize several mechanisms for the encouragement of eco-innovation. In addition to **legislative foundation**, fostering the perception of the importance of environmental matters and **various financial resources**, there are also different non-financial mechanisms of eco-innovation support. Among perceivably most effective practices for this is the facilitation of a so-called **"science match" service**, which contributes to the transfer of research results into the market and thus stands as a complementary service to suggested activities for decreasing the gap between entrepreneurs and research institutions. It is the view of the Medossic project partners that **diversification of the existing (eco)innovation support system** (incubators, regional development agencies, chambers of commerce, the university technology transfer office) is a good basis for the development of new services for such eco-innovation support. Further, the creation of knowledge should be implemented through **creation of collaborative systems and networks** by putting together operators from research and business worlds and also by training young researchers and innovators, by pushing their

employment into business enterprises, thus **boosting the match between scientific and technology offer and demand from business sectors.**

Some of the Medossic regions noted a **high ecological awareness among business:** companies mention it as an essential element of the company's success. Where this is the case a **high level of investments made by private subjects is observed.** However, as one of the Medossic project partners emphasized this reflects a high potential and sensibility on demand side towards eco-innovation issues: such an attitude can be motivated not only with an environmental ethics or behaviour, but can be ascribed to the **awareness of the economical potential foreseen in eco-innovative investments.** Also, it is more likely that companies will strategically direct to a greater environmental sustainability, if **eco-innovative is positively evaluated and perceived as necessary by the end-users, customers.** Namely, this presents a competitive advantage in a highly competitive globalised market. Some partners of the Medossic project report that end users are not easily persuaded to use eco-innovative products or services due to their high cost and because of lack of awareness of the potential impact on their business. It is intended that this issue is tackled through the sharing of risks by creating consortium and partnerships. One of the conditions for a greater diffusion of eco-innovative products and services is thus also the **promotion and diffusion of eco-culture and eco-mentality.**

Additional attention needs to be devoted to **stimulating eco-culture within business community.** Although companies in general express an awareness of the importance of eco-innovations, it is often acknowledged on a declarative level and not also in practice. The majority of the Medossic project partners observed some kind of **periodic awarding on all levels** directed to raising awareness on the importance of eco-innovation, improving also the image of companies and consequently their competitive advantage. Previously mentioned mechanisms are also related to this dilemma.

Another element of eco-innovation support that cannot be neglected is the introduction of environmental standards that most of companies are familiar with. Nevertheless, the role of **the role of environmental standards seems to represent only a guideline** and in some cases a benchmark to which to refer in creating and implementing eco-innovations, rather than a goal to reach. This is mainly due to the fact that only in few cases such standards are perceived as enhancing competitiveness instruments improving sales and business. As a result of this, only few adhesions to such instruments are observed more in general at European level.

Some of the most basic activities of **providing applicable and selected information** to companies dealing with eco-innovation and at the same time **offering practical assistance** with applications for funds and other ways of

assistance (training etc.) should also be included among the activities of eco-innovation support structure.

5.4. Perception of partners on the role of education in supporting eco-innovation in the Medossic area

The role of highly educated employees in supporting eco-innovation within companies proves to be very relevant because of their technical skills, their comprehension of standard technical language and their capacity to transfer scientific and technological knowledge into the business environment, integrating it with the specific needs of the production system. It is often perceived that a high level of education of employees could contribute to solving some structural problems such as difficulties in transfer of technological knowledge processes from research centers to companies, diminishing technological gap between local manufacturing and global economies and existing gap between entrepreneurs and academic professionals at the same time.

Although educational level of employees (also the managers) plays an important role in the development of eco-innovation, it seems that **educational level of young people and especially young entrepreneurs seems to be vital for fostering eco-innovation activities**, but at the same time their situation is not adequately addressed and in many cases they are faced with **unfavorable working conditions** with low payment, temporary employment etc.

When looking into the importance of environmental training as a encouraging mechanism in eco-support within the Medossic area it is to be noted that **environmental training does in fact contribute to raising awareness** in organisations and to encouraging institutional change within private enterprises and public organisations. Especially in public organizations environmental training - combined with lifelong learning of employees in public organizations - leads to understanding of eco-innovation potentials, thus eliminating negatives effects such as difficulties in transferring of technology knowledge from research to business, lack of perception of economical use of eco-innovation, lack of development of strategic programmes in the eco-innovation field etc.

To summarize, based on comparative analysis and the Medossic project partners observations, there are several activities that prove to be successful in solving different dilemmas pertaining to eco-innovation encouragement and support. Table 5.4.1. offers an overview of the most evident ones.

Table 5.4.1.: Guidelines for (eco)innovation support

Dilemmas	Guidelines for regional pilot structures
<i>Existing gap between entrepreneurs and academic professionals.</i>	Encouragement to the development of a high level educational system and quality R&D organizations.
	Offering other possibilities for networking (organizing discussions, meetings, seminars within business community, locally and internationally).
	Fostering the creation of (European) regional networks in the field of (eco)innovation.
<i>Stated importance of linking the business sector with R&D and the mutual operation on common eco-innovation projects.</i>	Encouragement the exchange of best practices between more developed and experienced regions in the field of (eco)innovation to less experienced regions.
	Encouragement of business environment supporting the exchange of knowledge also within the business community (business incubators, technology parks, knowledge centres etc.).
<i>The deficiency of financial funds to fulfil the requirements to conclude the innovation processes.</i>	Encouragement of national and regional authorities for foreseeing the financial funds in the future budgets to support the local economy with eco subsidies.
<i>Insufficient support of governmental and national public bodies.</i>	More easily accessed government bodies
	Direction also to SMEs The development of human resources, specialized in (eco)innovation knowledge and information providing
<i>Lack of coordination between innovation and ecology and lack of wider public interests.</i>	Raising the awareness of the importance of eco-innovation within business sector and wider public.
	Promotion of dissemination of eco-way of living to the public, using different media channels, organizing public relations campaigns etc.
<i>Absence of central data about (eco)innovation initiatives, programmes and projects in most regions.</i>	Development of regional databases concerning eco-innovation and encouragement of national databases development.
<i>Inefficiency of organizational structures (for applying innovations to market niches, for applying for funds, for stimulating knowledge creation and exchange etc.).</i>	Stimulation of marketing orientation for product and services sales and promotion enhancements.
	Providing training in specific knowledge

	(knowledge management, financial project management and similar business functions).
	Encouraging funds providers for implementation of user-friendly application forms.
	Easing the process of applying for funds by assisting with the preparation of applications.
<i>The problem of ensuring competitive advantages in the frame of globalisation.</i>	Easing innovation processes by means of stimulation of financial funds and other support activities (different kinds of awarding etc.).
	Stimulation of demand for eco-products and services by final customers.

As already emphasized, these guidelines are to be considered in relation to existing situation in each region, participating in the Medossic project.

Part 6: LESSONS LEARNED

Based on the experiences of the Medossic project partners when observing their regional and national environments, several key points have been illuminated, offering a framework for designing and performing eco-innovation support:

1. **ECO-CULTURE AS A FOUNDATION FOR ECO-INNOVATION:** It is clear that eco-innovation is most successful when embedded in suitable context. It is impossible to predict whether a selected activity or a set of them would consequent in actual success of organizations implementing eco-innovation. However, there is no doubt that attaining success in eco-innovation needs to be supported by the environment that encourages the ideas of sustainable development in every aspect of living (economy, politics, society etc.) and with every stakeholder directly or indirectly related. An important lesson is thus directed to the acknowledgement of encouraging a so-called eco-culture. A good example of encouraging this kind of environment is the “Managing eco-region” practice in Inner-karst region, Slovenia.
2. **RELATIONSHIP BETWEEN ECOLOGY AND INNOVATION:** when dealing with eco-innovation support one frequently encounters several policies, initiatives, programmes and projects in the area of ecology or in the area of innovation (nationally, regionally or locally). There are not many examples of combining both areas in eco-innovation application. This is one of the factors that influences eco-innovation significantly and needs to be considered when designing eco-innovation support structures. In addition, this idea needs to be implemented at all levels and areas influencing eco-innovation progress (financial programmes, policies, education etc.). An example of such integration is shown in the “ECREINetwork” initiative in Spain (<http://www.ecreinetwork.eu/>).
3. **CENTRALIZED ECO-INNOVATION SUPPORT STRUCTURES:** due to separate policies and initiatives, dealing either with ecology either with innovation, eco-innovation cannot be located specifically within the existing support structures, resulting in lack of centralized information on eco-innovation support, non-targeted existing funds, scarce or non-existent databases on eco-innovation programmes and projects etc. The improvement in this area is an important factor influencing eco-innovation encouragement. An example is shown in Andalusian Regional Ministry for Innovation, Science and Enterprise, Spain (<http://www.juntadeandalucia.es/innovacioncienciayempresa/cocoon/aj-homeEN.html>).
4. **ECO-INNOVATION SUPPORT STRUCTURES ON REGIONAL LEVEL:** not only that the need for eco-innovation support structures centralization is emphasized, it proves more and more important also to implement policies and initiatives on

regional (and not specifically to national) level, close to eco-innovators and adapted to specific needs of regional and local levels. In addition, effective participation of regions in the planning and implementation of eco-innovation support policies, initiatives and programmes is necessary. Again, Andalusian Regional Ministry for Innovation, Science and Enterprise (Spain) presents a good example of this.

(<http://www.juntadeandalucia.es/innovacioncienciayempresa/cocoon/aj-homeEN.html>).

5. **ECO-INNOVATION SUPPORT INCLUDING BUSINESS KNOWLEDGE:** in the scope of eco-innovation support activities, knowledge of business functions are also important. Namely, companies are often faced with insufficient knowledge and resources to apply innovation to specific market niches, for applying for funds, for stimulating knowledge creation, transfer and dissemination by usage of management practices such as knowledge management etc. and require additional assistance in dealing with these matters. An example is presented by the development of the Regional Innovation Pole of Crete (<http://www.i4crete.gr/?q=node/142>).