



# **MEDOSSIC**

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

## ***Existing situation analysis In Primorsko goranska County***

***Med Programme***

***Priority-Measure 1-2***

***Axe 1: Strengthening innovation capacities***

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

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# Part 1: IDENTIFICATION SHEET

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## Part 2: EXECUTIVE SUMMARY

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### Part 3: METHODOLOGY FOR EXISTING SITUATION ANALYSIS IN REGIONS

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#### 3.1. DEFINITIONS OF USED TERMS

##### **Innovation**

An innovation is the implementation of a new or significantly improved product (good or service) or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relation. The minimum requirement for an innovation is that the product, process, marketing method or organizational method must be new (or significantly) to the firm.

##### **Invention**

An important distinction is normally made between invention and innovation. Invention is the first occurrence of an idea for a new product or process, while innovation is the first attempt to carry it out into practice (Fagerberg 2004).

For more information see:

[http://ec.europa.eu/enterprise/policies/innovation/glossary/index\\_en.htm](http://ec.europa.eu/enterprise/policies/innovation/glossary/index_en.htm)

##### **(Eco)innovation**

It presents all forms of innovation activities resulting in or aimed at significantly improving environmental protection. Eco-innovation includes new production processes, new products or services, and new management and business methods, the use or implementation of which is likely to prevent or substantially reduce the risks to the environment, pollution and any other negative impact of the use of resources throughout the lifecycle of related activities.

For more information see:

[http://ec.europa.eu/environment/eco-innovation/what\\_en.htm](http://ec.europa.eu/environment/eco-innovation/what_en.htm)

### Productive sector

Sector, which includes all business activities, profit or non-profit oriented. An example of Croatian productive sectors follows:

Activities
A+B Agriculture, hunting, forestry and fishing
C+D Mining, quarrying and manufacturing
E Electricity, gas and water supply
F Construction
G Wholesale, retail; certain repair
H Hotels and restaurants
I Transport, storage and communication
J Financial intermediation
K Real estate, renting and business activities
L Public administration and defence; comp. soc. sec
M Education
N Health and social work
O+P Other social and personal services

## 3.2. METHODOLOGICAL APPROACH

In order to attain the complete overview of situational analysis and to contribute to stimulation and enhancement of eco-innovation in partner's strategic and operational plans, the proposed methodological approach for Existing Situation Analysis in each region includes the following elements of descriptive analysis:

- a review of secondary sources (available reports and data on innovation policy, programmes, structures etc., existing legislative documents, acts etc.);

- data analysis (innovation indicators by European Innovation Scoreboard)
- field research which consists of qualitative (for example, interview, focus groups,...) quantitative (for example, questionnaire) or mixed-methods approach.

The application of qualitative, quantitative or mixed-methods approach should be considered based on the scope of identified elements of existing situation analysis and approachability of subjects researched.

## Part 4:

# EXISTING SITUATION ANALYSIS in PRIMORSKO GORANSKA COUNTY

### 4. 1 INTRODUCTION OF PRIMORSKO GORANSKA COUNTY

Primorsko-Goranska County is situated in the northernmost section of the Adriatic sea. The geographic location is an asset to the County since it is located at the crossroads of the Central European and Adriatic-Mediterranean routes.

Primorsko-Goranska County occupies the overall surface area of 3.582 km<sup>2</sup> or 6,3% of the total area of the Republic of Croatia. County has 303.305 residents with a share of 6,9% in the overall population of Croatia.

Rijeka is the administrative, business, economic, university, cultural and sports center of the County, and the third largest city in the Republic of Croatia.

One of the characteristics of the Primorsko-goranska County is the big difference in population density. The average density of population is 85.1 inhabitants per km<sup>2</sup> (Croatia – 78.4 inhabitants per square kilometre) and it has above average population density.

On the basis of its natural and economic characteristics, the County can be divided into three areas:

- the *littoral* which is the transport and industrial center – Primorje
- the *islands* where tourism and catering industry are developed, and partially agriculture and fisheries – Kvarner Islands
- the *mountainous* area where forestry and wood processing industries prevail – Gorski kotar.

The exceptional transport and geographic location and the intersection of important European overland and maritime routes influenced the population which since the ancient time has been dedicated to seafaring and other sea-related economic activities. For this reason the region, and Rijeka in particular, developed into a strong maritime hub with vigorous port, maritime, transport, shipping and tourism activity of significance for the whole country. Traditionally, Gorski kotar has been a significant forest and wood processing economic area.

Wholesale and retail trade, manufacturing, transportation and storage, construction, real estate activities and accommodation and food service activities are the most significant broad sectors, accounting for approximately half the region's total annual turnover.

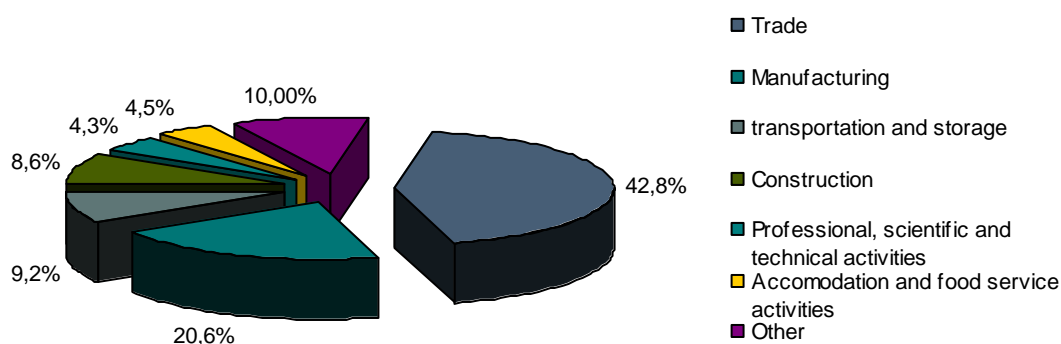
## 4. 2. INVESTIGATION OF THE SPECIFIC CHARACTERISTICS OF PRIMORSKO GORANSKA COUNTY WITH AN EMPHASIS ON FACTS & FIGURES CONCERNING THE (ECO)INNOVATION FIELD

### General Regional Indicators and Data

Figure 1: Basic Economic Indicators

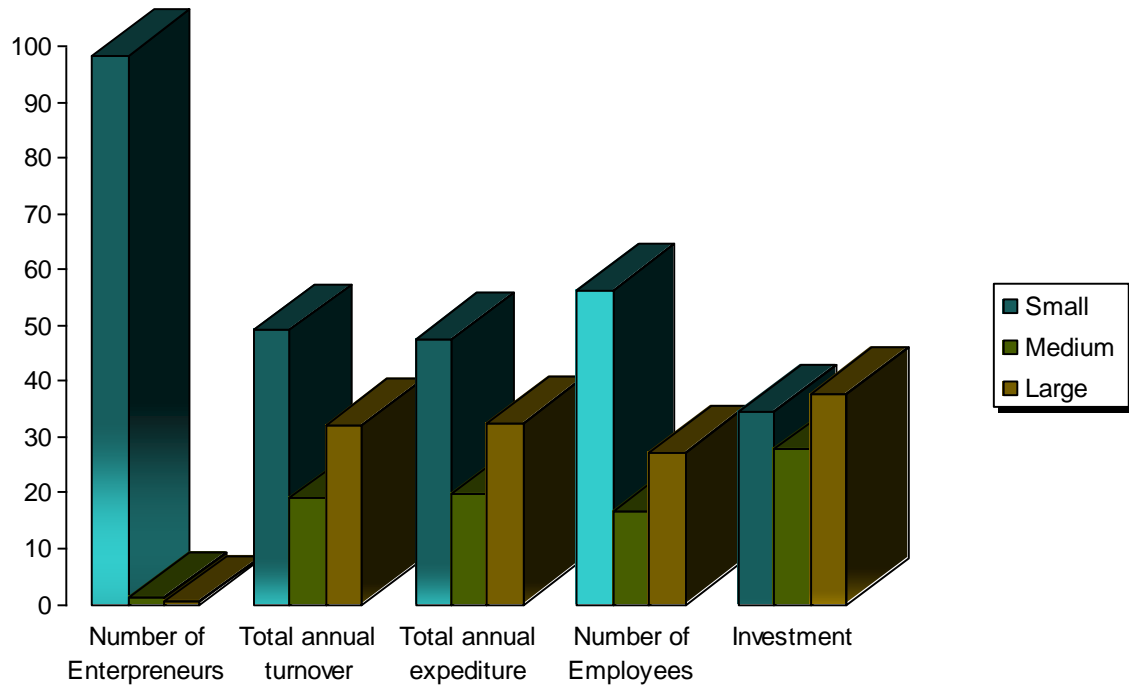
<i>Indicators</i>	<i>2007.</i>	<i>2008.</i>	<i>Index</i>	<i>Republic of Croatia 2008.</i>	<i>Share in Republic of Croatia (%) 2008. g.</i>
Number of Entrepreneurs	7.891	8.381	106,2	89.655	9,34
Number of Employees	65.097	66.308	101,9	933.958	7,1
Total annual turnover (in mln kn)	36.772	38.974	106,0	709.827	5,49
Total annual expenditure (in mln kn)	35.730	38.747	108,4	685.638	5,65

Based on the structure of the economy branches of Primorsko-goranska County, the most represented is trade, with 43% of income in the total economy of the County. The trade branch is followed by: the processing industry (20,6%), transport and storage (9,2%), construction industry (8,6%).



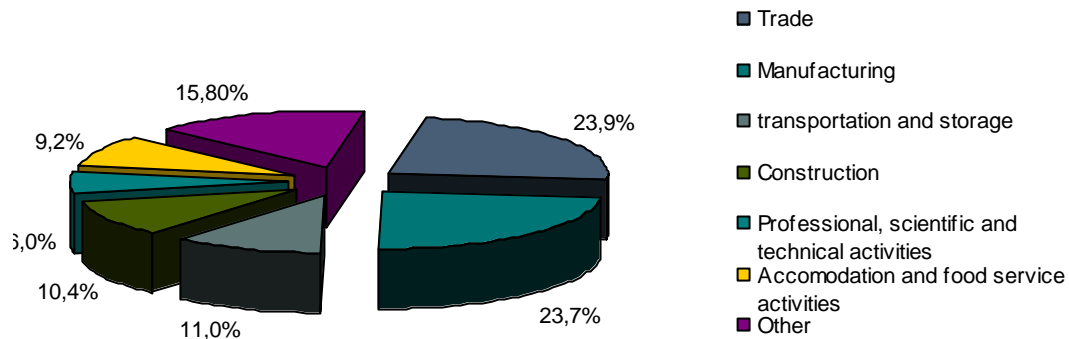
As we can see in the Figure 2., small and medium enterprises have the leading role in the total number of enterprises (over 99%), annual turnover (69%) and the number of employees (73%).

Figure 2: Small, Medium and Large enterprises



The wholesale and retail trade has largest number of employees, and on the second place is processing industry. The number of employees is constantly growing in the trade and construction sector, and it is decreasing in the processing industry.

Figure 3: Employees in the Primorsko-goranska County



#### 4.2.1. (Eco)innovation Indicators

*Please fill in Table 2 of Annex 1 (Innovation indicators) and insert it in this chapter. Comment on results and data relating to innovations in region. You might refer to (eco)innovations, innovators, scope of innovations, etc. Compare regional and national data. Outline the specifics of your region in comparison with national data.*

### 4.3. INVESTIGATION OF EXISTING POLICIES AND INITIATIVES ADOPTED IN (ECO)INNOVATION FIELD IN CROATIA AND ESPECIALLY IN PRIMORSKO GORANSKA COUNTY

#### 4.3.1. National level

##### INSTITUTIONAL SUPPORT TO INNOVATIONS

Institutional support to innovation activities in Croatia are provided through government and non-government institutions and organisations (non-profit sector), chambers and specialised centres, networks and/or companies for consulting and innovation services. Adoption of policies for development of entrepreneurship, as very important segment for reanimation of Croatian economy and crucial factor for assurance of certain level of employment, extract the fact that the organisations of innovators are particularly highlighted among the non-governmental organisations. Therefore, it is necessary that those organisations have special treatment within the Technical Culture, and innovators and their project and organisations, as well as the entrepreneurial project, should have special supportive programmes, including the institutional and financial support. This support is already organised within the National Government, Ministry of Economy and on the some regional and local level.

INSTITUTIONAL SUPPORT CONSISTS OF: competent ministries, Croatian Government, State intellectual property office of the Republic of Croatia, Croatian Chamber of Economy, local and regional self-government units, technological and innovation centers, non-profit sectors, Croatian Network of consultants.

Considering the lack of interest within the commercial sectors – companies, in Croatia today the innovation activities are mostly concentrated on the individual innovators, with tendency of commercializing and that the development of innovations project should give the additional stimulans for development of entrepreneurship.

With that scope, some regions and cities have certain supporting funds and programme as following:

- subsidies for the development of innovation (cca 10.000 kn) which are assigned directly to the authors of selected innovation projects for creation or finishing the prototypes, consultant services, manufacturing of tools or initiations of zero-series with aim of commercialization of innovation.
- Incentive loans for innovation – based entrepreneurial projects (cca 50.000,00 EUR) assigned to the creditworthy entrepreneurs for realization of entrepreneurial projects. Projects are preliminary revised by the Department of Economic Development of Primorsko – Goranska County and that approved by some of comercial banks, based on business plan created by the consultants from Croatian Network of Consultants.
- Regional and local budgetary resources for financing the entrepreneurial incubators, technology centers etc, are allocated for financing the operating costs of mentioned institutions and realization of their programme. Local self-governance is mostly financing those institutions which are founded by them.

Local and regional budgetary resources for technical culture, with reference to innovations activities, are allocated to organisations of innovators (associations and alliances) and to the innovation, technology centres etc. for realisations of selected projects. The financial means are, with some exceptions, mostly symbolic and insufficient even for the elementary functioning of those organisations. Unfortunately, instead of supporting programmes for intellectual and expert assistance to the innovators, for developing their innovations, protection of intellectual property and commercialisation of innovations, mentioned programmes mostly prefers the organisation of manifestations (innovations exhibitions, fairs etc) which is the cause of termination of some associations and quality programmes.

#### 4.3.1.1 (Eco)innovaton Policies

Entrepreneurship and Innovation Programme – EIP, is the first operational programme within the Competitiveness and Innovation Framework programme – CIP.

The EIP seeks to support innovation and small and medium enterprises (SMEs) in the EU, focusing on:

- Access to finance for SMEs through "CIP financial instruments" which target SMEs in different phases of their lifecycle and support investments in technological development, innovation and eco-innovation, technology transfer and the cross border expansion of business activities.
- Business services: the "Enterprise Europe Network". Business and innovation service centers all around the EU and beyond provide enterprises with a range of quality and free-of-charge services to help make them more competitive.
- Support for improving innovation policy: Supports transnational networking of different actors in the innovation process and innovative companies, including benchmarking initiatives and the exchange of best practice.
- Eco-innovation pilot and market replication projects for the testing in real conditions of innovative products, processes and services that are not fully marketed due to residual risks and that are aimed at reducing environmental impacts, preventing pollution or achieving a more efficient use of natural resources.
- Support for innovation and SME policy-making through contracts and grants: Analytical work and awareness raising activities (i.e. conferences and studies) on certain industrial sectors, SMEs or innovation policy are organized to inform and support policy-makers, and make policy suggestions to increase cooperation between EU Member States.

With signing and ratification of the Memorandum of understanding, Croatia has become full member Of the EIP. Governmental body which is coordinating the programme is Ministry of economy, labor and entrepreneurship of Republic of Croatia. With this, to Croatian SMEs are for the first time allowed to participate in this project. For period 2007 – 2013 for EIP programme is allocated 2,17 bev EUR, 430 mil EUR for innovation projects.

Special support is provided for eco-innovations, and with that scope, two initiatives are iniate:

- PRO INNO EUROPE - comprehend exchange of experience and projects, providing support for defining the innovation policies and evaluation of those policies on regional and national level
- EUROPE INNOVA – supports the creation of public-private partnerships and financing of innovation platforms with the scope of developing the innovation potential

**Support to definition of SMEs supporting policies** – organizing the working groups, creation of studies, political dialog with national governments, evaluation of progress, conferences, exchanging of experience and best practices and steering the common policies in the EU state members.

#### 4.3.1.2 (Eco)Innovation Initiatives

CIP-Competitiveness and Innovation Programme for 2009, has the main scope of supporting the innovation and SMEs in E. Total financial funds for the projects within the Programme for 2009 are 30 mil EUR.

Specific priorities have been set up considering its important environmental impact. They are summarized hereafter:

Improved sorting processes for waste materials such as construction, industrial, household, electrical and electronic waste; eco-friendly design and production of high quality consumer goods, innovative recycling processes; Business innovations that strengthen the competitiveness of the recycling industries. In the building & construction sector, innovative building products that reduce environmental impact and/or support a rational use of natural resources; innovative sorting, reuse and recycling of construction and demolition waste; innovative water systems including water saving, re-use of natural waters, rainwater collection and re-use, green roofs. Innovative products including packaging methods and material that reduce environmental impact and maximize the use of raw materials in the food sector; cleaner and more efficient processing of food and drink products so as to reduce waste and increase material recycling and recovery; improved efficiency water management processes that reduce the use of water across the food & drink supply chain; innovative products, processes and services reducing environmental impacts of consumption including packaging, distribution and purchasing decisions. In the area of greening business & 'smart' purchasing, products and services that follow the principles of Integrated Product Policy and the life-cycle approach and in line with the various policies documented in the Action Plan on Sustainable Consumption and Production and Sustainable Industrial Policy; implementation and promotion of environmental criteria for purchasing decisions of enterprises; innovative approaches to EMAS (Eco-Management and Audit Scheme) including increased resource and energy efficiency and biodiversity aspects or simplifications (Cluster approach is mandatory).

## Intelligent Energy Europe Programme (IEE)

With about € 730 million of funds available between 2007 and 2013, the Intelligent Energy Europe Programme (IEE) will help to assure the sustainability of energy sources, environmental protection and competitiveness of energy sector.

The programme supports energy efficiency, efficient use of energy sources, promotion of new and renewable energy sources and supporting the energy diversification.

The funding is provided through four sub-programmes:

- ALTENER - New and Renewable energy sources
- SAVE Energy efficiency, notably in buildings and industry
- STEER Energy aspects of transport
- COOPENER Co-operation with developing countries

There are also possibilities of funding the Energy Agencies. Within the programme, so far 50 Energy Agencies have been financed with the main scope of promoting the renewable energy sources on local and regional level with different activities: informing the public, public administration and private sector, organising the work-shops, creating and implementing projects, creation of energy audit reports for public and private subjects and applying projects to different calls for proposals on national and international level.

### 4.3.2. Regional level 4.3.2.1. (Eco)innovation Policies

On the national level, support of entrepreneurial activities in Republic Croatia is regulated with Law for SMEs development (NN 29/2002 and 63/2007), Law for national subsidies (NN 140/05) and Law for investment promotion (NN 138/2006) and programmes and operational plans which are deriving from mentioned laws.

In the period 2004 – 2007, Ministry of economy, labour and entrepreneurship, through Operational programme for SMEs support, allocated 15.626 subsidies in total amount of 592,6 mil. kuna.

In the 2008, the same Ministry started with the Operational Programme for the period 2008-2012 and the financial resources are allocated to realisation of following targets:

- creation of positive entrepreneurship environment
- developing the entrepreneurial culture
- supporting of education and long-life-learning
- improving of productivity in production sector
- implementation of new technologies.

Subsidies are allocated firstly to the entrepreneurs with growth potential, start-ups and for entrepreneurs within the target groups – women, youth, start-ups, persons with disabilities etc and for institutions with basic role of developing the entrepreneurship (regional development agencies, entrepreneurial centres, technology parks, cooperatives, chambers etc.

Fund is indented for co-financing the quality entrepreneurial projects, entrepreneurial education, procurement of equipment, exhibition on fairs etc. The data regarding the total amount of approved subsidies and according to individual programme, the Ministry has published on their official web site : [www.mingorp.hr](http://www.mingorp.hr) .

### **SUPPORTS TO INNOVATORS**

Primorsko – Goranska County with its programme for innovations support, have subsidies for developing the innovation based products. According to the public tender, the subsidies can be used for developing the innovation (for creation or finishing the prototypes, consultant services, manufacturing of tools or initiations of zero-series with aim of commercialisation of innovation) – in 2008 total amount of 180.000,00 kn were allocated to the 18 innovators. Besides this, Primorsko – Goranska County co-financed the activities of innovators associations in total amount of 50.000,00 kn.

Foundation FIPRO was founded by TIC (Technological- Innovation Centre Rijeka Ltd). It was supported by : Ministry of Science and Technology, Primorsko Goranska County and the City of Rijeka. Beneficiaries of the Foundation are the aimed group of entrepreneurs- innovators with products based on advanced technologies: physical persons and legal entities from Croatia. An entrepreneur with innovative prototype based on advanced technologies signs an agreement with the Foundation by which the manner in which financial means will be assigned and the obligations of the entrepreneur are defined. The entrepreneur is also obligated to manufacture the prototype and to pay a certain amount gained from sale of the product to the Foundation. In this way the Foundation would ensure long- term existence.

#### **4.3.2.2.(Eco)innovation Initiatives**

Year 2000.

- Project The sustainable development of Gorski Kotar, supported ba Ministry of Agriculture and Forestry of Republic of Croatia, Ministry of Environmental protection, primorsko – Goranska County, Croatian Chamber of Economy and Hrvatske šume Ltd.
- Designing and building more biological – mechanical facilities for fecal water treatment
- Project Sustainable Development of National Park Plitvička jezera and surrounding municipalities financed by UNHC and numbers of international foundations and associations with coordination by Ministry of agriculture and forestry of Republic of Croatia and other ministries and Croatian Cattle alliance

Year 2001.

- Implementation of new technologies in the agriculture with scope of environmental protection, and practical usage of manufactured food under these conditions in the hotels and restaurants
- facilities for water purification in olive oil mills – within the project, 85 oil mills on Adriatic coast have been visited with providing the suitable solution
- designing of facilities for wasted water purification in winery with composting the residuance – first phase of examination – winery Vrbnik, based on dosage of microorganism Eurovix
- organisation of international conference IFOAM ABM (International Federation of Organic Agriculture Movements AgriBioMediterraneo) about ecology, eco-tourism in Opatija and Novalja (island of Pag), under sponsorship of Croatian Parliament and other ministries, primorsko – Goranska, Zadarska and Istrian County, City of Novalja and City of Pag
- Programme of sustainable development of Croatian I
- limestone areas – municipalities Konavle, Karlobag and Vrbnik, with coordination of Ministry for environmental protection, physical planning and construction
- Project for promotion of organic livestock farming “Symphony of Croatian pastures” in coordination of Ministry for agriculture and forestry and Croatian Cattle Raising Selection Centre
- Project for developing organic viticulture in Moslavina and Vrbnik field with pilot plantation

Year 2002.

- Project for developing the organic farm of goat mekot, island of Krk
- Project for developing the organic farming of berries with cooperatives in Gorski Kotar in coordination of Ministry for environmental protection, physical planning and construction and Primorsko – Goranska County
- Central facility for waste water purification for production plant for cheese – 900 ES Paška sirana, project with cooperation with relevant ministries

Year 2003.

- Organisation of conference “Eco label – guarantee for consumers”
- Organisation of conference “Current news in viticulture production – Vrbnik”
- Barrier of project and conference “Development of apiculture in primorsko – goranska County” Rijeka
- Barrier of Project “Small business Zones for municipalities Lumbarda, Karlobag, Perušić, Draž, Kneževi Vinogradi, Ernestinovo, Čepin, Antunovac, Vrbnik, Rab
- Project for developing the entrepreneurship of youth, women and start-ups for following cities and municipalities: Delnice, Čabar, Mrkopalj, Fužine, Karlobag, Rab

- Project for permanent solving the issue of allochthonous wildlife on Nord Adriatic Sea in cooperation with Croatian Parliament, Croatian Farming Alliance, Croatian cattle Centre and relevant ministries

Year 2004.

- Market research for Cooperative Bribir Crikvenica with the scope of market placing the autochthonic and organic products of other partner cooperatives with production of autochthonic and organic products – creation of business plan for development the mentioned cooperative and feasibility study
- Market research for Organic Apiculture Cooperative Vidmar and promotion of organic honey produced in Primorsko – Goranska and Ličko – Senjska County, organisation of promoting media presentation “Gorski Kotar – limestone area with pronouncedly geological, morphological and biological characteristics – area of water-protection zones where people are living, working and creating”

Year 2005

- Creation of project “Implementation of organic products in sale assortment of company Gavranović – Creation of Business plan and development plan for Agriculture – tourist Cooperative Maršanić Kukuljanovo, winner of double championship’s title for production and Golden plaquettes 2004 and 2005 for quality as the best producer of sheep and goat-milk cheese in Croatia
- Creation of business plan and development plan for Agriculture and Tourstic Cooperative Severin na Kupi and the project of construction of first eco-hotel with eco-camp and sport and recreational zone Kupa in Croatia “Gorski Kotar’s Fairy tail”

Year 2006.

- Creation of agriculture and tourism development plan within the project “Total development of the City of Vrbovsko”
- Creation of agriculture development plan within the Project “Total development of the municipality of brod Moravice”

#### **4.4 INVESTIGATION OF EXISTING PROJECTS AND PROGRAMMES IN THE SCOPE OF (ECO)INNOVATIONS IN CROATIA AND ESPECIALLY PRIMORSKO GORANSKA COUNTY.**

In order to provide to the private sector the transformation of knowledge to the increasing of productivity and innovation, it is necessary:

- to direct the public support to the R&D to the private R&D
- implement tailored-made system of public subsidies for commercialisation of research with the scope of decreasing the preconception regarding the applied researches
- support the science-based start-ups

The specific relevance has the number of researchers and experts with high education – in Croatia, the share of persons with degree in science and technology is 5,6 percent with regard to the total population, which is lower than the countries in the region and the EU (13,5 percent).

#### 4.4.1. European, National, Regional, Programmes and Projects undertaken

##### City of Rijeka:

- Adriatic Action Plan 2020. Intereg IIIC, environmental protection
- Solar panels on the roof of the City Hall

##### Companies:

- Initiation the production of windmills with co-operation with foreign company (Teri Crotek ltd)
- Initiation on gas implementation in public transportation (Autotrolej ltd.)

Management and implementation of energy efficiency in several local authorities (Energio ltd.)

##### University of Rijeka:

Initiation of new innovation programmes coming from professors, students.. (Scientific Park of University of Rijeka)

##### Others:

Eco agriculture and eco tourism (Eko Liburnia)

Co-operative for certification on eco products, food, environmental protection, maritime affairs, communications.

##### RDAPorin:

**Regina**-certification, implementation programme for green entrepreneurship in Country.

**Energy Agency**-founding of country energy agency (CIP-IEE)

**BULB**-Public Lighting Efficiency implementation Programme in Pirmorsko-goranska County ( NNPA Adriatica/Phare 2006)

**Mariščina** -Waste management for Lendriels (ISPA)

**Biodizel**-collection of domestic oil for biodiesel production (Intereg III/A PHAREE 2005)

## 4.5 ANALYSIS OF THE REGIONAL PRODUCTION SYSTEM REGARDING (ECO)INNOVATION ISSUES

### 4.5.1. Market analysis regarding (eco)innovation

#### 4.5.1.1 Overall description

Croatia has long tradition considering the science activities, but the commercialisation of knowledge is still in the early phase. For example, 6 percent of Croatian companies has summited the patents for the period 2005-2007. It is interesting that this result is in the particular contrast with rather high level of adoption of technologies which is shown with the high level of computer usage by the workers in production processes (44 percent).

With the low level of activities considering the patenting, total expenditure for R&D are also modest – about 1% of GDP.

In this report, we predict that the increasing the share of R&D expenditure in total GDP to the 3% (Lisabon strategy), Croatia could increase its GDP for the 6% by the year 2025 ( for the 8,2% by the year 2040)

#### 4.5.1.2 Preliminary indications of sectors/candidate areas for (eco)innovation within the framework of MEDOSSIC project

1. *A list of productive sector candidates*

2. *For the candidate sectors: description of the productive chain (process, product, organisation and cultural elements)*

3. *For the candidate sectors: initial outline of the typology of eco-innovation and the type of introduction (phases / steps / areas) proposed*

2. *Preliminary indications of internal threats associated with the implementation of the eco-innovation proposed in the previous point within the companies' system)*

#### 4.5.1.3 Problems and barriers of productive sector candidates for dealing with (eco)innovation issues

Major recommendations of the Report for the innovations policies area are:

- increase the private expenditure in R&D
- benchmarking regarding the taxation policies and supports and analysing their impact on private R&D promotion
- assessment on option for R&D based -FDI promotion with consultation to the Trade and Investment promotion Agency

Improving the conditions for the cooperation between the universities and industry with the:

- reviewing the criteria for the promotion in academic careers
- simplifying the legal framework for the cooperation
- revising the subsidies in the legal framework
- revising the refunds through the BICRO's SPREAD programmes
- promoting the development of technology-innovation's brokers

#### 4.5.1.4 Opportunities of productive sector candidates for dealing with (eco)innovation issues

Facilitation of science based start-ups with the:

- support of technology transfer offices
- revising the legal framework for development of risk capital funds
- promotion of market-oriented activities of public research institutes and technology parks
- promotion of restructuring public research institutes by implementing the system of decreasing applied financing and implementation of subsidies on the research level for the diversification of incomes

Improving the general management structure of National innovation system by establishing the strategy for implementation of follow-up system and consolidation and institutionalisation of specific programmes and clarifying the role of BICRO and Croatian technology Institute.

#### 4.5.2. Matrix (sectors and type of eco-innovation)

Starting with focus on commercialisation of knowledge and not knowledge itself, the standard measures for science and technology promotion should be supplemented with selected reforms of the investment environment in order to force the private sector for starting to the knowledge search.

Considering that the innovations are by its nature should be gradual and no radical turning points, it is advised that the policy for science and technology promotion should support and not to discriminate the low-level technologies industry sectors such as textile, agriculture etc which also have to increase its technology level.

##### 4.5.2.1 Overall objective

*The overall objective is to identify the productive sectors on which to focus the activity of identification of potential opportunities for eco-innovation in a complementary and logical manner between the Project partners. And as such is intended to focus on a pre-selected number of types of eco-innovation that are most able to create an impact on the territory of each partner in established industries or those potentially disposed to innovation. The fact that we focus our attention on specific sectors and/or eco-innovative technologies allows the development of a more focused research and better awareness of the real potential for development and subsequently the achievement of greater results in terms of involvement of target stakeholders.*

*An eco-innovative approach should provide relative beneficial effects in terms of significant environmental impact throughout the productive chain of the specific sector, industrial, commercial or service that is, not only in the pre-selected sub-sectors in order to create the greatest impact of the productive system possible, it would be useful therefore to investigate between partners whether sub-sectors exist which constitute a more or less complete productive system and plan subsequent analysis of BP around those.*

*The added value of such an investigation lies in the fact that creating a basis for cooperation between the partners identifying sectors that have an impact (in terms of weight on the local economy as well as potential development of eco-innovation) in different regions and provinces of the various partners, so as to act in a complementary manner, which enables a partner having less developed sectors in the respective territories of interacting with partners who have better expertise by virtue of greater development of that specific sector in their area, always with a view to a complete productive system.*

*The interaction should also be transversal between user sectors and supplier sectors of eco-innovative technologies; industrial sectors should be identified from those that are disposed, because of acquired know-how or potentially capable of development of certain technologies, to the growth of eco-innovative technologies to be implemented on the receptive productive sectors of the different partners.*

*Operational proposal in detail is proposed to follow the following steps.*

##### 4.5.2.2 Structural and Economic situation of the productive sectors

###### STEP 1 - Table 1

*Table 1 should be used by each partner in order to report a number of macroeconomic indicators (quantitative) for each sector and, where available, for each sub-sector (for list of sectors see the methodology chapter in this template).*

*Each partner, depending on their specific situation, will determine whether further analysis is required at the section level (e.g. Mechanical Section, Electronic Manufacturing industry, etc.). The indicators may be updated by adding others deemed appropriate.*

Table 1 - Structural and Economic situation of the productive sectors

<u>Sector</u>	<u>Section (to be defined by each partner)</u>	GDP	Number of active enterprises	<u>Human resources employed</u>	Enterprises size distribution			Natural laws enterprises distribution			<u>% growth of the sector in the last 5 years (number of enterprises)</u>
					Small	Medium	Large	Individuals	Partnerships	Corporation	
A+B Agriculture, hunting, forestry and fishing											
C+D Mining, quarrying and manufacturing	Example for Tecnomarche would be Mechanic, Footwear, etc										
E Electricity, gas and water supply											
F Construction											
G Wholesale, retail; certain repair											
H Hotels and restaurants											
I Transport, storage and communication											
J Financial intermediation											
K Real estate, renting and business activities											
L Public administration and defence; comp. soc. sec											
M Education											
N Health and social work											

O+P Other social and personal services											
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### 4.5.2.3. The Existing Situation in terms of eco-innovation

#### STEP 2 - Table 2

Table 2 outlines the existing situation for each partner in terms of eco innovation. The table includes some indicators relative to the current capacity of eco-innovation (Eco-Innovation indicators) - selected from among those listed on page 38 of the UN report "Measuring eco-innovation" - Annex 1, proposed by PP8 - for each sector and, where available for each section. "Types of eco-innovation" that can have an impact on each sector will be indicated (by means of a cross) and, where available, on each section in order to determine the actual impact of eco-innovation. The information regarding the existing situation could be recovered through an analysis of information and partly qualitative data obtained through interviews / meetings with focus group, organisations such as provinces, industrial associations, universities etc.

The following classification offers a framework for matrix:

#### ENVIRONMENTAL TECHNOLOGIES

- pollution control technologies including waste water treatment technologies
- cleaning technologies that treat pollution released into the environment
- cleaner process technologies: new manufacturing processes that are less polluting and/or more resource efficient than relevant alternatives
- waste management equipment
- environmental monitoring and instrumentation
- green energy technologies
- waste supply
- noise and vibration control

#### ORGANIZATIONAL INNOVATION for the environment

- pollution prevention schemes
- environmental management and auditing systems: formal systems of environmental management involving measurement, reporting and responsibilities for dealing with issues of material use, energy, water and waste
- chain management: cooperation between companies so as to close material loops and to avoid environmental damage across the value chain (from cradle to grave)

#### PRODUCT AND SERVICE INNOVATION offering environmental benefits:

- new or environmentally improved products (goods) including eco-houses and buildings
- green financial products (such as eco-lease or climate mortgages)
- environmental services: solid and hazardous waste management, water and waste water management, environmental consulting, testing and engineering, other testing and analytical services
- services that are less pollution and resource intensive (car sharing is an example)

#### GREEN SYSTEM INNOVATIONS

- alternative systems of production and consumption that are more environmentally benign than existing systems (biological agriculture and a renewables-based energy systems are examples)

<u>Sector</u>	<u>Section</u> <u>(to be defined by each partner)</u>	Type of eco-innovation				Eco-innovation indicators		Other innovation
		Environment al technologies	Organizati onal innovation	Product and service innovation	Green system i nnovatio n	% of firms with EMAS or ISO14001	Eco- patent s	Other innovation
A+B Agriculture, hunting, forestry and fishing								
C+D Mining, quarrying and manufacturing	Example for Tecnomarche would be .. <i>Mechanic</i> <i>Footwear - Leather</i> <i>Food</i> <i>Wood - Furniture</i> <i>Plastics</i> <i>Textile - Clothing</i> <i>Shipbuilding</i>	X	X	X				
E Electricity, gas and water supply								
F Construction	Example for Tecnomarche would be <i>Construction</i> - <i>Building</i> <i>Energy Efficiency</i> - <i>Renewable Energies</i>	X		X	X			
G Wholesale, retail; certain repair								
H Hotels and restaurants								
I Transport, storage and communication								
J Financial intermediation								
K Real estate, renting and								

business activities								
L Public administration and defence; comp. soc. sec								
M Education								
N Health and social work								
O+P Other social and personal services								

**Table 2 - The Existing Situation in terms of eco-innovation**

#### 4.5.2.4. Candidate sectors for the third level of ESA (field research)

##### STEP 3 - Matrix 3

*Constructs a matrix acquired through a synthesis of Tables 1 and 2 that allows the identification of the most important productive sectors, significant in terms of socio-economic impact and the potential impact of the eco-innovation. Each partner can identify the sector on which to focus the third level of the ESA research (field research) and investigation of BP. The matrix could be structured as that shown below, which provides an estimate of the relevance of the various sectors and sub-sectors.*

**Matrix 3 - Candidate sectors for the third level of ESA (field research)**

<u>Sector</u>	<u>Section</u> (to be defined by each partner)	PP5 - Marche Region	PP6 -PGŽ .....	
A+B Agriculture, hunting, forestry and fishing		-		
C+D Mining, quarrying and manufacturing				
	Example for Tecnomarche would be			
	<i>Mechanic</i>	xxx	xxx	
	<i>Footwear - Leather</i>	xxx	=	
	<i>Food</i>	x	xx	
	<i>Wood - Furniture</i>	x	xx	
	<i>Plastics</i>	-		
	<i>Textile - Clothing</i>	xx	x	
	<i>Shipbuilding</i>	xxx	xxx	
E Electricity, gas and water supply	<i>Energy Efficiency - Renewable Energies</i>	xxx	xxx	
F Construction	<i>Construction - Building</i>	xx	xx	
G Wholesale, retail; certain repair				
H Hotels and restaurants				
I Transport, storage and communication				
J Financial intermediation				
K Real estate, renting and business activities				
L Public administration and defence; comp. soc. sec				
M Education				
N Health and social work				
O+P Other social and personal services				

**NB:** XXX = Very High relevance; XX = High relevance; X = Medium relevance; - = Not relevant

#### 4.5.2.4. Candidate Sectors for eco-innovation

##### STEP 4 - Matrix 4

*The final matrix is structured as matrix 3 however it is more detailed combining the results obtained on the basis of the field evaluation of the sectors pre-identified in matrix 3 and reworked by increasing the level of detail to the sub-sections. The sectors identified in the table will be those on which more attention will be focussed in the subsequent project activities, including investigations into BP.*

**Matrix 4 - Candidate Sectors for eco-innovation**

<u>Sector</u>	<u>Section</u> <u>(to be defined by</u> <u>each partner)</u>	<u>Sub-Section</u> <u>(to be defined by</u> <u>each partner)</u>	<b>PP5 -</b> <b>Marche</b> <b>Region</b>	<b>PP6 -</b> <b>.....</b>
A+B Agriculture, hunting, forestry and fishing			-	
C+D Mining, quarrying and manufacturing				
	Example for Tecnomarche would be			
	<b>Mechanic</b>	Household appliances (production)	xxx	
		Engine, turbine, pump, ect (production)	xx	
		General Machines	x	
		Machines and electrical machines for energy production and distribution	x	
		Tool Machines	-	
		Farming Macchine	-	
		<b>Footwear - Leather</b>		xxx
	<b>Food</b>			
	<b>Wood - Furniture</b>			
	<b>Plastics</b>			
	<b>Textile - Clothing</b>			
	<b>Shipbuilding</b>			
E Electricity, gas and water supply	<b>Energy Efficiency - Renewable Energies</b>			
F Construction	<b>Construction - Building</b>			
H Hotels and restaurants				
I Transport, storage and communication				
M Education				

**NB:** XXX = Very High relevance; XX = High relevance; X = Medium relevance; - = Not relevant

#### **4.5.2.5. Effects of (eco)innovation**

*Estimate the effects of (eco)innovations in identified candidate sectors for (eco)innovations. Describe these effects based on Arundel and Kemp (2009, 13-15) recommendations.*

#### **4.5.3. Situation of (Eco)innovators on national and regional level**

##### **4.5.3.1. Overall description**

*Please describe the overall situation of the innovators on national and regional level. You may refer to supportive environment, possibilities of putting into force innovations, motivation for innovators with awards ect. Feel free to comment on social, economic and cultural environment that influences the succesfulness of innovation processes. If possible, refer to specific data or documents which support your analysis.*

##### **4.5.3.2. Problems and barriers on national and regional level**

*Please elaborate further on specific problems and barriers faced in region, which influence the innovation issue. You may refer to section 4.5.2.1 providing a more thorough analysis and justification of existing problems and barriers.*

##### **4.5.3.3. Opportunities on national and regional level**

*Please elaborate further on specific opportunities for innovators on national and regional level, which aim to support the target groups. You may refer to section 4.5.2.1 providing a more thorough analysis and justification of existing opportunities.*

#### **4.5.4. Other**

*Please identify and analyze other issues and intervention fields that in your opinion should be addressed in order to provide better support for the target groups.*

## 4.6 CONCLUSIONS

### 4.6.1. Summary

*Please describe the main findings relating to your region. Summarize in brief (up to one page) the following:*

- *Specific characteristics of your region which in your opinion influence the encouragement of and support to (eco)innovations;*
- *The influence of existing national and regional policies and initiatives on (eco)innovation field in your region;*
- *The influence of existing national and regional projects and programmes in (eco)innovation field in your region;*
- *Specific characteristics of regional sectors/candidate areas for (eco)innovation*
- *Specific circumstances as observed by (eco)innovators on national and regional level.*

### 4.6.2. Qualification of the Partner

*Please describe the possibility for the Partner to interact with beneficiaries and stakeholders for the introduction of eco-innovation processes (functions and positioning of the project Partner, competences, experience etc.) within the proposed sectors/enterprises.*

## Annexes

## ANNEX A: STATISTICAL DATA &amp; INDICATORS

TABLE 1: General regional indicators

General indicators	Data	Comments
Surface (in km <sup>2</sup> )	3.582	
Regional population	305.505	
Country population	4.437.460	
Percentage of regional population on country total population	6,9	
Population density	85 person/km <sup>2</sup>	
Number of municipalities within the region	36	
Number of persons in employment (active population)	120.386	
Percentage of persons in employment		
Number of persons in paid employment (working population)	66.308	
Percentage of persons in paid employment		
Percentage of companies in region by size:	8.381	
a.) Micro	98,5%	Micro and small
b.) Small		
c.) Middle	1,1%	
d.) Large	0,4%	
GDP	Data	Comments
National GDP in EUR (current rate)		
Regional GDP in EUR (current rate)		
Regional GDP in %	50 % EU 27	
National GDP per capita	7.705 €	
Regional GDP per capita	9.149 €	
Regional GDP per capita in %		

TABLE 2: Research and development investments indicators

Research and development	National	Regional
Gross domestic expenditure on R&D (as % of regional GDP)		
Gross domestic expenditure on R&D (total %)		
By sources of financing R&D:		
a.) business companies		
b.) government funds		
c.) higher education funds		
d.) private non-profit organizations		
e.) funds from abroad		
Researchers by region (in %)		
Female researchers (as % of all researchers in the region)		
Average number of researchers per research organisation		
Applied research (as % of total research)		

Table 3: European Innovation Scoreboard

Innovation Indicator	National level
1.1 New S&E graduates , age 20-29	
1.2 Population with tertiary education	
1.3 Broadband penetration rate	
1.4 Participation in life-long learning , age 25-64	
1.5 Youth education attainment level	
2.1 Public R&D expenditures	
2.2 Business R&D expenditures	
2.3 Share of medium-high-tech and high-tech R&D	
2.4 Enterprises receiving public funding for innovation	
3.1 SMEs innovating in-house	
3.2 Innovative SMEs co-operating with others	
3.3 Innovation expenditures	
3.4 Early-stage venture capital	
3.5 ICT expenditures	
3.6 SMEs using organizational innovation	
4.1 Employment in high-tech services	
4.2 Exports of high technology products	
4.3 Sales of new -to-market products	
4.4 Sales of new -to-firm not new -to-market products	
4.5 Employment in medium-high/high-tech manufacturing	
5.1 EPO patents per million population	
5.2 USPTO patents per million population	
5.3 Triad patents per million population	
5.4 Community trademarks per million population	

5.5 Community industrial designs per million population	
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## ANNEX B: REFERENCES and SOURCES

[Website addresses, studies, research papers, etc]