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

Strategic and Operational Plan in Malaga Province, Region of Andalusia

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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Editor:	*European Resources Unit-Provincial Government of Malaga*
Authors:	*Sostema S.C. (Pablo Moreno Atencia, Alejandro Doval Cotrino)*

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1. IDENTIFICATION SHEET

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Author	SOSTEMA S.C.
Keywords	Eco-innovation, Work groups, Forum, Workshops, Operational Plan; Strategic Plan, Eco-agriculture, Waste, Water, Ecological Farming, Energy efficiency, Hotels, Tourism.
Summary (for distribution)	The present document gathers most of the elements reviewed during the development of the Medossic Project (territorial situation, participative process implemented, strategic lines) establishing up relations between them. Finally, as a result of the above mentioned process and the pilot projects, the operational plan is developed.

Part 2:
EXECUTIVE SUMMARY

2. EXECUTIVE SUMMARY

Within the present strategic and operational plan, a structured summary of the Medossic program has been developed along with the materialization of the operational plan.

Firstly, the economic, social, environmental and technological situation of the province of Malaga was reviewed. Thus it was explained why this territory has several spatial imbalances in relation to the population and its environmental impact. On the positive side, the province's innovative potential is pointed out taking into account existing infrastructures; all these aspects are presented in SWOT tables.

After this first step, the development of the participative process is described. Two sessions took place: during the first session, the SWOT was carried out and the initial pilot projects were defined and, during the second session, the summaries drawn up by the various parties involved, were verified and audited. There appeared four strategic sectors of implementation: Water, Waste, Tourism and Food & Agriculture. The following step was to deal with the strategic lines and global and operational targets, this was achieved by designing two matrixes which offered a global view of the proposals given.

The last sections describe the good practices contained in the study previously developed within the Medossic and which are useful for this stage of the operational plan, as well as the pilot projects based on the areas of interest pointed out. Five projects were presented, one per sector and two in the case of Food and Agriculture.

Part 3:
METHODOLOGY AND KEY CONCEPTS FOR STRATEGIC AND OPERATIONAL PLAN

3. METHODOLOGY AND KEY CONCEPTS FOR STRATEGIC AND OPERATIONAL PLAN

3.1 STRATEGIC AND OPERATIONAL PLAN'S AIMS

The Strategic and Operational Plan (SOP) is predisposed by each partner of MEDOSSIC project in the field of WC4 – Development of Strategic and Operational Plans for establishing pilot Structures in the regions.
The finality of the SOP, in brief, is to define the strategic lines and the operational modalities for establishing a reception office for potential innovators, entrepreneurs, and SMEs who wants to operate in the framework of innovation, in order to stimulate the eco-innovative process.

3.2 METHODOLOGICAL APPROACH

The present Strategic and Operational Plan (SOP) has been preceded by a range of activities resulting in the realization of analysis, evaluations, reports and documents preparatory to the SOP itself. In particular, within phase WC3 of MEDOSSIC project have been predisposed the Existing Situation Analysis, reports on the identified national Good Practices and Investigational Institutional Settings, each for every partner territory of the project, as well as the Benchmarking, as synthesis document of analyses ref. WC3, and the Investigational Institutional Settings (WC4).

The Strategic and Operational Plan (SOP) is articulated as follows:
➔ **General framework of the existing situation**: Chapter 4 "Context and territory analysis".
After the introductory part, there is the examination of the general framework of the existing situation, through an analysis of the context and of the territory, with an introductory part related to elements of greatest relief in terms of social, economic and productive, but also environmental and technological situation, underlined both in synthetic descriptive way, and through the SWOT analysis, structured in order to point out the main requirements for the area of reference.
➔ **Participative process:** Chapter 5 "The participative process in the territorial context".
The situation about the main institutional stakeholders and the tools at disposal for the (eco)-innovation is underlined in a synthetic way. The modality with, in the different territorial partners of project contexts has been applied the participative process and how the different subjects participated in the process, is described, with some anticipation on the modalities of collaboration which will be adopted for the definition of the most operational aspects of the plan.
→ **SOP's strategy and objectives: Chapter 6 "Strategic Lines"**
The activities of analysis and investigation, the results and the emerged needs, their presentation and discussion in an approach based on the participation and on the involvement of social and economic actors of the territory bring to a joint, shared and legitimated definition of the common vision or a global objective to act on, to pursue the objectives of (eco)-innovation of the territory. Therefore, the section describes the global objective, the strategic lines and the operational objectives in accordance with the emerged needs and the existing resources.

→ Operational Plan: Chapter 7 "Operational Plan" and Chapter 8 "Good practices"

SOP ends with the definition of the operational plan for the implementation of pilot project: it contains the description of *what, why, how and when* the partners will realize the pilot projects. The definition of single operational level is tightly related with the evaluation and monitoring indicators of the achieved results and with the selection of possible good practices that can be helpful for the implementation of the pilot projects themselves.

3.3. DEFINITIONS OF KEY CONCEPTS

The SOP is based on some **key concepts**:

- **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).
- **(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.

Furthermore, when exploring eco-innovation, the following classification is provided:

1. ENVIRONMENTAL TECHNOLOGIES:

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

2. **ORGANIZATIONAL INNOVATION** for the environment:

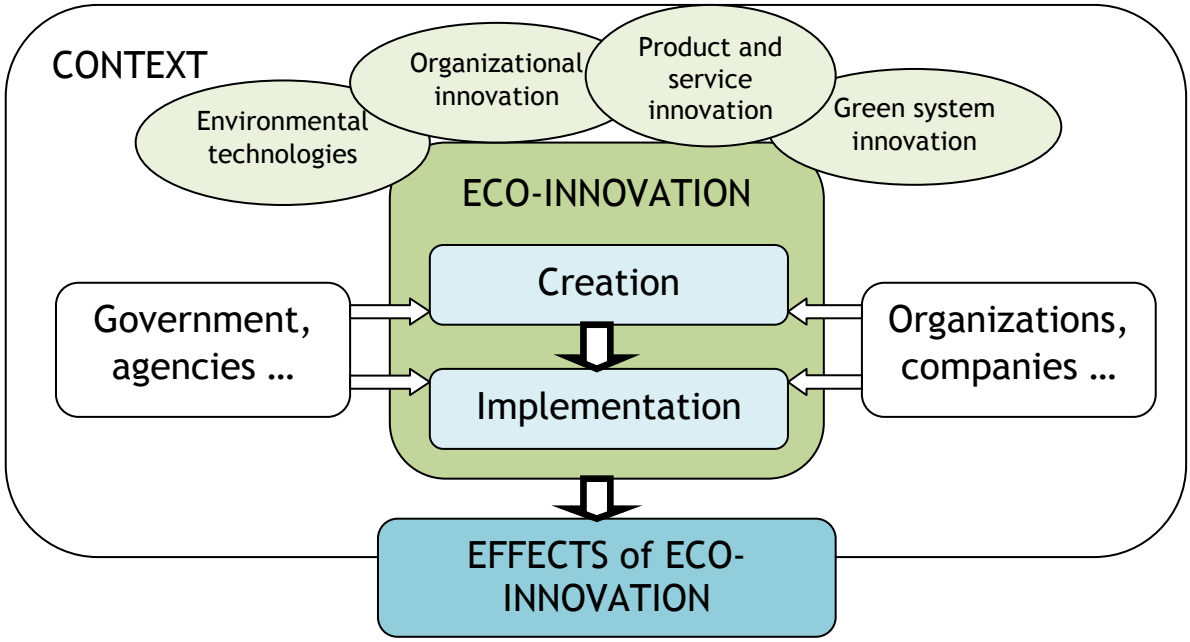
- pollution prevention schemes;

- 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 among companies so as to close material loops and to avoid environmental damages across the value chain (from cradle to grave).

3. **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;
   - less polluting and less resource intensive services (car sharing is an example).

4. GREEN SYSTEM INNOVATIONS:
   - alternative systems of production and consumption which are more environmentally friendly than existing systems (biological agriculture and renewable-based energy systems are examples).

Picture 1: The process of eco-innovation

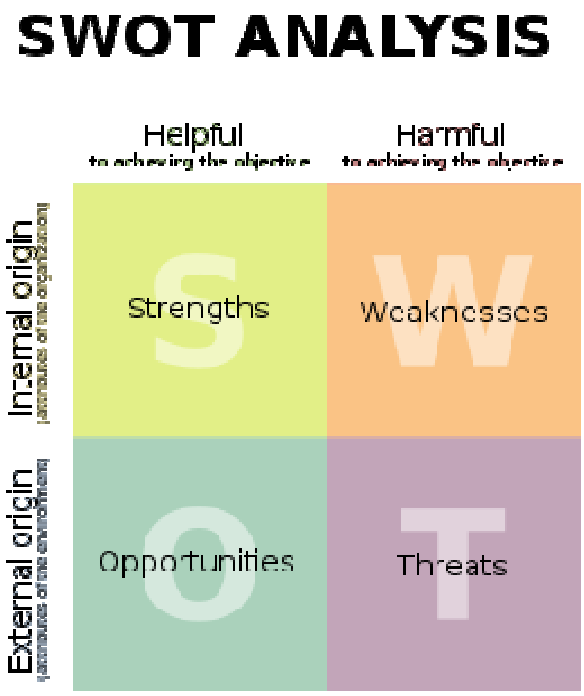


- **Stakeholders** where stakeholders are people, corporate bodies and organizations deriving from the public sector, companies and private sector, from the civil society that, through their resources, competences, role or actions, influence or are influenced by the process of eco-innovation
- **Partnership and participative procedure (or participated planning)**: the tool of the involvement of the stakeholders and the creation of partnership of various

nature is based on the conviction that development is not a subject of governments and administrations but of the community, operators and civil society in general, and on the principle that, governments and administrations must play the role of facilitators and animators in the development process, as well as of agree plans and collaborate with the territory. Therefore, the participative procedure foresees an involvement of all the actors that can directly or indirectly be involved in eco-innovation, according to a *bottom up approach* in order to share the priorities of intervention and define the lines of action with all the decision makers, actors as well as last recipients of impacts of eco-innovation, thus stakeholders.

- **SWOT analysis.** It is a tool of strategic planning used to evaluate the points of *strength* (Strengths), *weakness* (Weaknesses), the opportunities (Opportunities) and threats (Threats) of a project or "in an enterprise or in every other situation where an organization or an individual must take a decision to reach an objective". The finality of the SWOT analysis is therefore to identify existing points of strength and weakness , opportunities and threats in the territory and sector context or in key phenomena/contexts, in order to synthetically and clearly analyze and individuate the initial situation.

Picture 2: SWOT Analysis



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Part 4:
CONTEXT AND TERRITORY ANALYSIS

4. CONTEXT AND TERRITORY ANALYSIS

4.1 SYNTHESIS OF THE SOCIAL, ECONOMICAL, PRODUCTIVE, ENVIRONMENTAL, TECHNOLOGICAL AND INNOVATIVE SITUATION

Malaga has 1,593,068 inhabitants (Spanish National Institute of Statistics 2009); It is the province with the highest population density in Andalusia and the twelfth in the whole of Spain (within the group of thirteen Spanish provinces with more than 200 inhabitants per $km^{2,}$ all located on the coast, except for Madrid). The population density of Malaga grew by 34.67% from 1991 until 2008, which meant 213 inhabitants per km^2 instead of 158. It must be pointed out that most of the population resides in the coastal areas (781 inhabitants per km^2) while the inland areas are much less populated (61 inhabitants per km^2).

Although the majority of the population in the province (80%) is concentrated in twelve municipalities along the coast and in the metropolitan area, the profile of the average municipality in the province of Malaga (with a total of 101 municipalities) is of a territory with between 1,000 and 3,500 inhabitants. The average age being between 41-42 for women and 40 for men and with a lower index of women to men (96-97 women per every 100 men).

The population of Malaga presents a clear ageing pattern, with a Fritz index of 65 (mature population) and an old age index of 14.58%. In 2009, the birthrate was of 11.3 newborns per 1,000 inhabitants and the life expectancy was 82.7 years for women and 77.1 for men.

The population between 40 and 64 years of age continues to grow significantly, from 2006 to 2008, it increased from 26.22% to 32%. The population group aged between 20 and 39 years continues to decrease; in 2006 this sector of the population comprised 32.87% of the total, in 2008 this figure decreased to 32%.

The economy of Malaga is mostly based in the services sector (77% of the GDP in 2007 and 76% in 2000), consisting of the following activities: Trading, Tourism, Transport, Information Technologies, Real Estate and Rentals, Services provided to businesses, Cultural, Recreative and Personal services. A total of 74.5% of the population of the province is employed within the market services sector, either as self-employed or as an employee.

Within the activities mentioned, tourism stands out. The tourism sector of Malaga is situated in sixth place on a national scale while restaurants and bars take the fifth place. In 2009, 11.6 visitors entered through Malaga airport, of which 77.7% were from abroad. Two million visitors arrived to Malaga through the high speed train link Madrid-Malaga. The hotels hosted 4.91 million people, with 17.4 million overnight stays.

The agriculture and food sector, of traditional relevance in all the Andalusian territory, currently presents a very low contribution to the GDP of the province (approximately 2% over the last years). On the other hand, its environmental impact on the province's soil and rivers is very high.

Olive grove or vine cultivation by small and medium enterprises and cooperatives is greatly extended throughout the province. The olive grove sector occupies more than 42% of the agricultural land of the province and produces 68,000 tones of oil. The number of exploitations is 28,403, of which 24,680 correspond to olive groves for oil production. Most of the exploitations (47%) have a reduced size (between 1 and 5 hectares). From an economical viewpoint, this represents 26% of Andalusian agriculture and 31% of the vegetable production.

The male working population has been badly affected during the first year and a half of the economic crisis. The data collected showed that in 2007, the employment rate reached 70%, while in 2008 it decreased five and half points, equaling 2003 figures. In June 2009, it dropped to 58.6%, a level never reached previously within the period 2000-2008. With regards to female employment, it reached its highest peak in 2007 (48.2%), to drop significantly by the end of 2008 (46.8%). During the second term of 2009, the female employment rate decreased two points (44.8%), at a slower pace than the male rate.

The geographical location of hotels is concentrated within a reduced number of coastal municipalities: 64% of the total number of beds in the province are located in Torremolinos, Marbella, Benalmádena and Fuengirola.

The seasonal pressure (June-September) put on coastal areas, is reflected in waste production, water consumption, the impact of over-usage of sanitary sewer, and increase in energy consumption.

In inland areas, rural lodging has increased an average of 15% per year. This trend is moving the problems related to tourism to inland areas, where similar targets of sustainability and ecological balance need to be met in territorial planning.

The province of Malaga puts great pressure on the environment. On one side, it suffers a great water related stress, due to the overexploitation of water resources by the huge population (excessive when considering the climatologic characteristics of the territory and the unequal distribution of urban areas). According to the WEI (water exploitation index) the area of Malaga suffers a 164% of pressure, while any region over 40% is considered to be in a situation of acute stress for unsustainable use of water.

Rivers and aquifers are also polluted, not only due to the lack of waste water treatment plants in many of the inland municipalities and the ones around the river basin, but also due to the extensive agricultural and farming activities, which result in direct dumping into surface waters and indirect dumping (fertilizers, biocides) through lixiviation to subsoil waters. In 2008, 60% of the total length of province's rivers were in risk of not fulfilling the objectives of the Water Framework Directive for the year 2015, the same as with the renewable subsoil water resources. Likewise, Malaga is the province, within the Andalusian region, with the highest pollution levels being dumped from urban areas into the sea.

In relation to the use of land, Malaga presents a severe compaction of artificial land in its coastal area. In 2006, the first kilometer of coast registered an occupation of 47.17%. The diffuse urbanization is also an acute problem which is moving from the east and west coastal lines towards the inner areas. The scattered residential use of land increased three times faster than in the compact urban areas. There is also a very high risk of desertification (70% of the total surface) caused not only by natural factors but also by human factors as deforestation, bad agricultural practices, civil infrastructures and scattered urbanization, among others.

Biodiversity is seriously threaten by fragmentation and destruction of habitats, direct persecution, change in the use of land, occupation of public water basins and destruction of the vegetation of the river banks… all these facts provoke an increase in the number of species at high risk of extinction within the territory. As an example, the number of taxa of vascular flora existing in Malaga and included in highest risk categories has increased from 27 to 51 from the year 2000 to 2008.

On a technological and innovative potential level, the province of Malaga presents low industrial activity (18th within Spain), although it certainly has specific areas to encourage research and development in technology, as the Andalusian Technology Park, created in 1992, a national pioneer and European reference point. Equally, the tools derived from the national and regional R+D policies are present in the province, especially through a net of technological agents (RETA) boosted by the regional government.

4.2 SWOT ANALYSIS

Table 1 SWOT of the social system

STREGHTHS	WEAKNESESS
-High density and volume of population. -Incorporation of an important number of active immigrants into the population. -Significant importance of association networks within the province. -High population group in active age (25-40 years old) with high education.	-High unemployment rate (25-30%) -Low environmental awareness, which it is reflected in indicators such as the selective collection of waste -Progressive ageing of population -Significant social imbalance, which can be seen on the income distribution. The average wage of an individual from Malaga is three times under the EU-27 average. Moreover, more than 50% of workers in Malaga earn under 700 Euros per month, while 3.400 professionals in the province earn more than 100.000 Euros per month.
OPPORTUNITIES	**THREATS**
-Very spatially concentrated market. -Huge potential in immigrant human resources with lack of education. -Existence of participation and collaboration networks, useful to promote projects. -Huge potential in human resources between 25 and 40 years of age with superior studies and capacity for research and development.	-Reduction of active population rate and quality loss of the same. -Risk of increase of social exclusion and economic distinction among cities and neighborhoods. -Weak acquisition power of most of citizens -Lack of receptiveness in the majority of the population when trying to incorporate the environmental criteria in purchase decisions.

Table 2 SWOT of the economic and productive system

STRENGHTHS	WEAKNESESS
-Services economy (over 60% GDP) -Strong tourism sector with a wide range of offers (high, medium and low range). -Leading position in various economic indicators: 7th province in Spain for its economic activity, 6th in Tourism, 6th in Market Quota, 6th in Commercial Index and 5th in bars and restaurants (50 provinces in total) -Consolidated and diversified food and agriculture sector. -Partly independent with regards to internal demand. -Presence of associative entrepreneurial institutions with experience in the development of plans for improvement of economic activity.	-Very weak industrial sector (18th province in Spain) -Control of small family and part-time (not exclusive dedication) enterprises -High external dependency (tourism) -Low presence of R+D+I enterprises -Very low presence of R+D+I departments of staff in traditional enterprises -High precarious work conditions (low salaries and high number of seasonal jobs) -Lack of knowledge and awareness of the environmental impact of some standard processes (fertilization, weeds, waste management and elimination) by SMEs and micro-SMEs entrepreneurs, especially in the food and agriculture sector.
OPPORTUNITIES	**THREATS**
-A powerful tourism sector, with a high and medium range segment able to implement R+D initiatives. Potential for the province hotel offer to specialize in European markets. -Possibility to raise awareness about the need to reduce the environmental impact of the food and agriculture sector to fulfill the Common Agricultural Policy (CAP) which is oriented towards environmental sustainability and animal welfare.	-Persistence of low entrepreneurial awareness about the need to reduce environmental impact. -Risk of economic stagnation and slow coming out of the crisis initiated in 2008. -Risk of loss of a highly educated working generation. -Deterioration of lines of support for the entrepreneurial modernization due to budget restrictions in public administrations.

Table 3 SWOT of the territorial and environmental system

STRENGHTHS	WEAKNESESS
-Important presence of local development groups within the province. -High introduction of public environmental initiatives (*agenda 21* on a provincial level and *ciudad 21* on a municipal level). -Existence of Associations of Municipalities which allow the implementation of services which can not be dealt with by single municipalities. -Relatively good conservation of the inland environment (less altered than on the coast). -Existence of sustainable development plans for areas declared "Natural Park". -Presence of local initiatives for sustainable use of natural resources (forest bio-mass).	-High pressure on land resources: artificialization of 50% of the coast 1st km and presence of inland scattered urbanism. -High pressure on water resources: aquifers over-exploitation, nitrate pollution, spilling of untreated dump to surface waters, especially inland, occupation of public hydraulic domain (river basins). -Difficulties of ecological connection of natural spaces, causing problems to the normal development of species and the genetic variety of the local biodiversity. -Difficulties to store waste which can not be recycled or that do not count with recycling centres. Problems to install dumps.
OPPORTUNITIES	**THREATS**
-Numerous pressures on the environment are related to productive activities. European policies (CAP) will expect these activities to demonstrate an increased level of commitment. -Management of the environment as an economic activity which generates employment. -The diagnosis carried out on a municipal and regional level by instruments such *Agenda 21* and *Ciudad 21* allows potential direct intervention on the detected problems. -Environmental care is increasing the value of Malaga as tourist destination (although the tourism sector is already very relevant).	-Potential difficulties arising from financing problems due to budget restrictions. -Problems due to lack of labour and economic resources on a local level.

Table 4. SWOT of the innovation and eco-innovation situation (regional or local context)

STRENGHTHS	WEAKNESESS
-Settled presence of innovative entrepreneurial areas (Technological Park since 1992). -Presence of sectorial and regional agents, part of the Andalusian Technology Network (*RETA*), aiming to promote R+D+I. -Existence of a Regional Ministry of Innovation. -Regional Institutional instruments for R+D+I planning (*PAIDI* -see ESA-) with specific areas dedicated to eco-innovation. -University of Malaga, with various engineering and science faculties, whose departments participate in R+D+I projects and count with an office to transfer generated knowledge. -Clear position of regional, provincial and local institutions for environmental and sustainable technologies, as occurs with urban solid waste (compost and recycling) and waste mud (bio-gas plants). -Participation and enrolment of entrepreneurial agents and unions in the promotion of innovation through different programs (Inno-chambers).	-Persistence of an enterprise model with lack of innovative technologies and no interest in modernization unless it is financially supported and it is useful to reduce costs. -Economic crisis context which can affect regional and local instruments for innovation and eco-innovation support. -Weak connection between the University of Malaga and the provincial entrepreneurial network. The transfer of knowledge is not optimum. -Although the Technological Park of Malaga has been functioning since 1992, it has not managed to properly launch most of the enterprises established there (95% are SMEs). Most of them present a high dependency on direct help and of public lines of finance for enterprises implementing new technologies.
OPPORTUNITIES	**THREATS**
-To take advantage of the space offered by the Technological Park of Malaga and the assessment lines of *RETA*. -Existence of environmental problems derived from the economic activity, these problems count on financial initiatives to help solve them (losses on the hydric net, depuration, solid waste) with eco-innovative measures. -New orientation of CAP towards environmental sustainability, food quality and animal welfare, which will result in obliging sectors as the food and agriculture industry to reduce its environmental impact. There exist eco-innovative solutions highly valued by the community authorities. -Presence of powerful sectors, such as tourism (hotels), with a need to improve their energy infrastructures and also to reduce electricity costs. -Improvement potential in the relations between the University of Malaga and the provincial entrepreneurial network. -New law on Sustainable Economy, which promotes R+D+I.	-Persistence of economic stagnation and weakening of internal and external demand, with the consequent loss of income which would be otherwise aimed at financing R+D+I in the few enterprises which implement it. -Budget restriction which could result in a destruction of the innovative entrepreneurial network, dependant on public help. Equally, the risk of the disappearance of assessment instruments and the promotion of R+D+I as a result of the lack of public income. -Low awareness of entrepreneurs, especially in the part-time food and agriculture sector, which can lead to abandoning an exploitation instead of recycling it according to CAP.

Table 5: SWOT of eco-innovation in candidate sectors or with reference to a selected eco-innovation technology and requirements/intervention modalities analysis

Water Cycle

STRENGHTHS	WEAKNESESS
1.Positive experiences on reutilization of waste water for agriculture and leisure irrigation. 2.Important resources of subsoil water. 3.There is an available G.I.S for all the municipalities.	1.Unawareness of real consumption in small and medium municipalities. 2.Lack of water meters in municipal installations and premises. 3.Significative losses in the distribution networks. 4.Over-exploitation of aquifers. 5.Unawareness of illegal wells in rural environments. 6.Pollution of water by nitrates and other elements/products of agriculture and farming activities. 7.Direct dumping of untreated waste water in a high percentage of municipalities. 8.Uncontrolled industrial dumping into municipal sewerage networks. 9.Lack of separate networks for waste and rain water. 10.Bad condition of supply and sanitary networks, mainly in urban nucleus'. 11.Lack of real knowledge of the cost of service of the integral water cycle. 12.Rates do not match real costs. 13.Scarce funding and staff for service management. 14.Scattered population. 15.Lack of control of domestic consumption. 16.Lack of citizen awareness about the resource and its importance. 17.Lack of political will to identify the benefits of efficient water management. 18.Lack of control of electric consumption in electro- mechanical equipment. 19.Areas with a high risk of flooding.

OPPORTUNITIES	THREATS
1. To pursue at greater depth hydrogeology studies in the province. 2. To protect aquifers. 3. To guarantee and improve drinking water. 4. To carry out awareness programs for the efficient use of water on citizens, businessmen and farmers. 5. To evolve towards the establishment of water prices concordant with costs. 6. Drafting and approval of municipal ordinances for dumping into municipal sewer systems, through the construction of the EDAR [waste water treatment centre] or through the approval of the PGOU [general urban plan]. 7. To promote a saving and efficiency policy for water resources. 8. To improve and expand re-usage of waste waters: tertiary purification. 9. To establish indicators to assess and compare management systems. 10. New act for the integral water cycle.	1. Increase in water demand. 2. To consider water as a development factor instead of as a scarce natural resource. 3. Pollution of basins and underground waters due to agricultural practices and urban and industrial wastes. 4. Inadequate management of underground waters in the province. 5. Irregularity in the availability of water. 6. Management in small municipalities at individual level does not favour an efficient management. 7. Lack of application of the existing regulations. 8. Non-existence of European funds for investment. 9. Construction of more golf courses 10. Lack of ordinances about the spilling of waste waters.

Food and agriculture sector

STRENGHTHS	WEAKNESESS
1. Existence of knowledge agents. 2. Optimal natural resources and climate. 3. Communication infrastructures. 4. References of local leader SMEs. 5. Business Schools and high level Training Centres. 6. Use of state-of-the-art technologies in production chains. 7. “Tractor” effect of the tourism sector.	1. Small size SME 2. Prejudices towards the environment 3. Too much informative “noise” linked to innovation and sustainable development. 4. Lack of awareness. 5. Lack of training in EI within the SME sector. 6. Lack of coordination in the measures to be implemented by the SME. 7. Non-fulfilment of deadlines in support aids for SME. 8. Lack of information in SME to assume

	changes in the EI framework 9. Lack of water and lack of improvements in the management of the existing resources 10. Lack of control in production in the field. 11. High environment impact of some sectors, especially olive groves. 12. Lack of connection of UMA-OTRI and food and agriculture SMEs. 13. Lack of connection between the production system, Administration and research in eco-innovation.
OPPORTUNITIES	**THREATS**
1. Trend change in quality and environment management within the sector (45001, 14001). 2. Existence of an eco-innovative SME framework. 3. Political and economic framework related to eco-innovation (Sustainable Economy Act). 4. Positive perception of the term ORGANIC by the consumer. 5. Possibility of transforming the product through EI implementation. 6. To promote training in trades linked to the sector. 7. Recovery and promotion of autochthonous species	1. Treating frivolously the terms eco-innovation and sustainable development. 2. Competence loss if EI is not implemented in a short-medium term. 3. Lack of time to internalize and obtain subsidies/incentives. 4. Loss of market share due to a lack of eco-innovation.

Tourism sector

STRENGHTHS	**WEAKNESESS**
1. Positioning and representation 2. High number of hotels and related services. 3. Innovation transfer.	1. Exclusively economic approach. 2. Very difficult comprehensive management (economic, social and environmental) 3. Lack of innovation 4. Lack of awareness. 5. Lack of staff training. 6. Lack of information in associations.
OPPORTUNITIES	**THREATS**

1. Product differentiation. 2. Products focused on the customer. 3. In-depth studies of the Eco-innovation potential. 4. Domotic and Technological Development. 5. State mandatory environmental regulations for the sector. 6. Funds and incentives. 7. Comprehensive advice in the sector. 8. Redesigning of premises.	1. Lack of competence of the sector compared to Eastern Europe Participating Countries. 2. Cheaper tourist destinations. 3. Lack of professionals in the sector over the last 5 years. 4. Environmental conformity.

Waste sector

STRENGHTHS	WEAKNESESS
1. Central management in some public operators aware of the importance to protect the environment. 2. Existence of initiatives related to eco-innovation (recycling pants, compost and biogas) 3. Knowledge and use of environmental technologies by the existing operators. 4. Existence of Waste Management Master Plans at regional and national level which promote and boost eco-innovation.	1. High cost of necessary investments, apart from the crisis context and budget restrictions. 2. Low environmental awareness of the population, which can be seen in lower percentages than the regional and national average in selective collection. 3. Geographical difficulties to locate new dumps together with a higher average than the national and regional average in the generation of urban solid waste.
OPPORTUNITIES	**THREATS**
1. Availability of existing geographical information tools to exhaustively analyse the territory (location of new dumps). 2. To convert the difficulty for finding locations for new dumps into an awareness instrument for the populous. 3. To generate synergies between operators, given their reduced number in order to optimize resources. 4. The improvement margin shown by the selective collection ratio is an opportunity in itself.	1. Decrease in funding possibilities given the budget restrictions in public administration. 2. Rejection by local and environmental groups, the study of new locations for dumps.

5. THE PARTICIPATIVE PROCESS IN THE TERRITORIAL CONTEXT

5.1 LOCAL WORKSHOPS

5.1.1. The role of local workshops

There was a high representation of entities from the four sectors, as different public and private entities and associations participated (especially in the food & agriculture and tourism sectors).

Within the framework of public entities and administration, representatives from the different regional ministries, Malaga County Council, Provincial Consortium for Solid Waste, Provincial Consortium for Integral Water Cycle, European Resources Unit, Provincial European Information Office, associated entities (*MADECA, SOPDE),* town halls, various knowledge agents (*RETA, PTA, Parque Tecnoalimentario de la Axarquía, CITAGRO)*, SMEs and companies (*Bioazul, Mangra, Ecojara, Hotel Monte Malaga, Urbaser, Ecohotel Puerto de Ojén*, etc) together with various associations and cooperatives *(Oleoalgaidas SCA, AEHMA, Asoc. Vinos de Ronda, Consejo Regulador de la Denominación de Origen "Vinos de Malaga")* were present.

During each workshop, the importance of the candidate sectors proposed at the ESA (existing situation analysis) was unanimously confirmed. These identified the four main forms of environmental impact that the province supports: water, waste, tourism and food & agriculture activities.

5.1.2 Work method and steps taken at every local workshop

Two meetings took place: the first one, on the 13th April 2010, and a second one in June, to coincide with a course on eco-innovation, organized by the Provincial European Information Office of the Provincial Government of Malaga which took place during the 15th and 16th of June. The target of this second meeting was to provide feedback, therefore the attending groups were giving a report summarizing the conclusions reached during the April's meeting.

At each meeting, four work teams were created and a facilitator was present in each of them, whose task it was to implement in an efficient way the work method of the meetings.

The steps to take by the work groups in every workshop were the following:

1. To introduce the eco-innovation concept in its sector and its potential in a strategic entrepreneurial and/or institutional framework.

2. To carry out a SWOT analysis with regards to the current situation of eco-innovation in the sectors selected by the project.

3. To determine the need for intervention in a certain sector, in order to establish the strategic lines to be developed.

4. To establish the operational targets based on the strategic lines, as well as potential activities to develop for every operational target.

5. In those cases where it may be possible, a pilot project would be proposed, either considering the operational targets or the strategic lines established.

In order to assure that the team work was properly developed, four different charter models (matrix) –previously designed by the project partners- were used. The results obtained in each group were later introduced into those charters.

1. SWOT Matrix.
2. Consistency between intervention needs and strategic lines matrix.
3. Strategic and Operational Plan summary matrix.
4. Pilot project matrix.

5.1.3 Potential difficulties found during the participative process

The main difficulties arose from the need for precision that this type of meeting requires along with the meeting's target. On certain occasions the considerations went over the time limits, although in every sector, 100% of the proposed steps were achieved. There was a positive approach to the subject and the meetings proved to be an excellent occasion to promote a lively discussion that had to be channeled towards the establish methodology.

5.2 INSTITUTIONAL PARTICIPATION

5.2.1. Institutional framework for participants and main tools for eco-innovation.

Matrix 1 - Interest groups and eco-innovation support tools

Body	Operational level	Type of support	Support tools			Impact on eco-innovation in a local context	Involvement in SOP definition
			Title	*Brief description*	*Reference to project's document*		
Ministry of Science and Innovation	National	Political and strategic	Estrategy: VI National R+D+I Plan 2008-2011	Targeted towards the preservation, enrichment and optimal use of natural resources	ESA report	Direct impact on eco-innovation	NO
Ministry of Science and Innovation	National	Political and strategic	National reform programmes: Ingenio 2010	Achieve the convergence of per capita income and employment as well as knowledge society within the EU, through the following programs: 1. CENIT 2. CONSOLIDER 3. AVANZA Plan 4. EUROINGENIO Plan.	ESA report	Direct impact on eco-innovation	NO
Ministry of Development	National	Political and strategic	R+D+I Programme of the Strategic Plan for Infrastructure and Transport: Agua Programme	Technological innovation orientated to environmental recovery and regeneration of the hydraulic public domain as well as maritime and associated ecosystems.	ESA report	Direct impact on eco-innovation	NO
Ministry of the Environment	National	Political and strategic	Action plan in favour of environmental technologies	To enhance the establishment of environmental technologies in every economic sector, in order to increase efficiency in the usage of natural resources and energy.	ESA report	Direct impact on eco-innovation	NO
Ministry of Industry, Tourism and Trade	National	Informative and strategic	Technical research encouragement programme	To support saving and energy efficient initiatives to fight against the green house effect.	ESA report	Indirect impact on eco-innovation	NO

Ministry of Science and Innovation	National	Political and financial	Centre for the Development of Industrial Technology	To encourage technological innovation and development of Spanish companies by managing the requests for funding and support for R+D+I projects both on the national and international level.	ESA report	Direct impact on eco-innovation	NO
Ministry of Industry, Tourism and Trade	National	Support	Innoempresa Plan	To develop support measures for SMEs in order to strengthen the Spanish entrepreneurial network and to increase its innovation capacity.	ESA report	Indirect impact on eco-innovation	NO
Regional Ministry of Innovation, Science and Enterprise	Regional	Support strategies and search for finance	Innovation and Modernisation Plan for Andalusia 2005-2010	Direct Eco-innovation targets: 1.Promotion of energy R+D+I 2.Preparation of environmentally friendly measures which decrease the environmental impact.	ESA report	Indirect impact on eco-innovation	NO
Regional Ministry of Innovation, Science and Enterprise	Regional	Management, planning and diffusion strategies	Andalusian Research, Development and Innovation Scheme (PAIDI) 2007-2013	To serve as a finance tool, to organize and structure the agents involved in the Andalusian Knowledge Society, through: 1.Coordination of technological and knowledge networks. 2. Entities oriented towards the generation of knowledge 3. Entities oriented towards the implementation and transfer of technology and knowledge. 4.Entities to support the coordination, management and promotion of the Andalusian Knowledge Society. The main focus is on the treatment of "Natural resources, energy and environment" as they are specifically related to eco-innovation.	ESA report	Indirect impact on eco-innovation	NO
Regional Ministry of the Environment and Innovation, Science and Enterprise	Regional	Strategic planning and improvement of finance tools	ECREINETWORK Project	Objetives: - Development of regional policies to support eco-innovation and environmental technologies by improving and establishing finance, economic and technical tools.	ESA report	Indirect impact on eco-innovation	NO

				- Exchange of experiences among the European partners for the preparation and development of common initiatives. - Participation in the design and development of the European policies and the action plans orientated towards supporting eco-innovation and environmental technologies, strengthening the regional focus of European initiatives.			
Regional Ministry of Innovation, Science and Enterprise	Regional	Estrategic, organizative	Innovation and social economy development support programme 2009-2013	To encourage the development of an innovative, competitive and enterprising social economy within the framework of an Andalusian productive network. Its second line of activity consists of: 1. Innovation in products and services. 2. Organizational innovation: relations with suppliers and clients, marketing, trading, logistics and distribution, environmental management, energy efficiency, human resources and social liability of companies. 3. Quality innovation, introduction and certification of environmental quality management systems and company excellence EFQM [European Foundation for Quality Management]. 4. Technological innovation, identification of technological needs and introduction of technological development and improvement projects.	ESA Report	Indirect impact on eco-innovation	NO
Regional Ministry of Innovation, Science and Enterprise	Regional level: Andalusia	Strategic and Investment encouraging	Incentive program for sustainable energy development in Andalusia 2009-2014	Encouragement of company support and investment or expenditure projects which result in a more efficient energy use or which favour the use of renewable energy sources. The objective is to benefit environmental protection and the improvement of self-supply and energy infrastructures of Andalusia.	ESA Report	Indirect impact on eco-innovation	NO
Regional	Regional	Management and	Innovation and	Promotion of innovation by managing and granting			NO

Ministry of Innovation, Science and Enterprise		search for incentives	Development Agency of Andalusia (IDEA)	incentives to companies and other services including new business incubator.			
Regional Ministry of Innovation, Science and Enterprise	Regional	Innovation support through the transfer of information and technology	Andalusian Technology Network(RETA)	To encourage and guarantee innovation and the transfer of technology, to enhance networking systems, to promote internationalization and to improve the competitiveness of the Andalusian productive network. Name of programs developed: NOVAPYME, EVA, TRANSFER, CLUSTER DIGITAL, PRAI-RETA	ESA Report	Indirect impact on eco-innovation	YES (PARTICIPATION IN MEETINGS AND FORUMS)
Regional Ministry of Innovation, Science and Enterprise	Regional	Support to research, finance and cooperation	Andalusian Technology Corporation	Private institution formed by universities, research centres, innovative companies, financial entities and public administration. Objectives: To support technology transfer from Universities, to promote cooperation with technological agents, to optimize the available resources and to promote the presence of Andalusian companies in the National R+D Plan and in the VII EU Framework Programme	ESA Report	Direct impact on eco-innovation	NO
Andalusian Technology Park (PTA)	Regional	Logistic and entrepreneurial cooperation support	Andalusian Technology Park (*PTA)*	It is an area "of high quality for the installation of innovative SMEs and big companies, dedicated to production, advanced services, R+D and are respectful of the environment". Activities carried out by the *PTA* and services to companies: - Incentive programme to promote sustainable energy development in Andalusia - Foundation of Science and Technology Centre - Foundation of Technology transfer service and international relations - Seat for the Andalusian Technology Network (RETA	ESA Report	Direct impact on eco-innovation	YES (PARTICIPATION IN MEETINGS, FORUMS AND SURVEYS)

University of Malaga (UMA)	Local and Provincial	Promotion of organizational and scientific activities	Knowledge Transfer Office	To enhance and manage promotional and organizational activities and those of transfer of knowledge arising from the UMA. To promote scientific and technical collaboration, in order to favour the interaction among UMA researchers and the entrepreneurial and social environment, and to promote their participation in different support programs for the development of R+D+I activities.	ESA Report	Direct impact on eco-innovation	YES (PARTICIPATION IN MEETINGS AND FORUMS))
Regional Ministry of the Environment	Regional	Strategies and encouragement of environmental technologies	Andalusian Environmental Plan 2004-2010	Different programmes related to eco-innovation are developed: encouragement of production and sustainable consumption programme; integration of environmental issues on the sectorial policies programme or the encouragement of environmental goods, services and technologies programme.	ESA Report	Indirect impact on eco-innovation	NO
Malaga Town Hall	Local and Provincial	Strategic and Legal	Municipal Energy Agency	Development of CEVER and FOVER projects: -CEVER: energy optimization of all pre-school and primary education schools in the city, monuments, municipal buildings, premises and sport facilities. -FOVER: the target is the installation of 109 photovoltaic plants in every school in the city and in municipal buildings	ESA Report	Direct impact on eco-innovation	NO
Malaga Chamber of Commerce, Industry and Navigation	Local and Provincial	Knowledge support and finance search	Innochambers Programme	Within the programme, companies are offered: 1. An individual diagnosis of their competitive skills, offering improvement proposals. 2. A specialized advisor in the development and implementation of the recommendations in the field of innovation. Finance is achieved through the European Regional Development Fund and the Regional Ministry of	ESA Report	Indirect impact on eco-innovation	YES (PARTICIPATION IN MEETINGS, FORUMS AND SURVEYS)

				Innovation, Science and Enterprise.			
Regional Ministry of Innovation, Science and Enterprise	Regional	Informative and support on enterprise cooperation	Andalusian Technology and Innovation Network (RAITEC)	It creates the connections among the different technological agents that form the network (service providers) with the Andalusian productive network (entities requiring the service).	ESA Report	Indirect impact on eco-innovation	NO
Regional Ministry of Innovation, Science and Enterprise	Regional	Informative	Andalusian Research Results Transfer Network (RATRI)	Informative website aimed at providing a wide range of information on the activities and lines of R+D+I finance developed in Andalusia.	ESA Report	Indirect impact on eco-innovation	NO
Entrepreneur confederation of Malaga	Local and Provincial	Strategic and institutional support	Social agreements on economy, innovation and employment in the province of Malaga.	The aim is a modernization of the strategic sectors of the province, including the diversification towards new technologies or renewable energies.	ESA Report	Indirect impact on eco-innovation	NO
Comisiones Obreras Union	Local and Provincial	Strategic and institutional support	Social agreements on economy, innovation and employment in the province of Malaga.	The aim is a modernization of the strategic sectors of the province, including the diversification towards new technologies or renewable energies.	ESA Report	Indirect impact on eco-innovation	NO
Unión General de Trabajadores Union	Local and Provincial	Strategic and institutional support	Social agreements on economy, innovation and employment in the province of Malaga.	The aim is a modernization of the strategic sectors of the province, including the diversification towards new technologies or renewable energies.	ESA Report	Indirect impact on eco-innovation	NO
Provincial Government of Malaga	Local and Provincial	Strategic and institutional support	Social agreements on economy, innovation and employment in the province of Malaga.	The aim is a modernization of the strategic sectors of the province, including the diversification towards new technologies or renewable energies.	ESA Report	Indirect impact on eco-innovation	YES (PARTICIPATION IN MEETINGS, FORUMS AND SURVEYS))
Provincial consortium for urban solid waste (Environmental and Territorial organization of the Provincial Government of	Local and Provincial	Logistics and installations	Valsequillo treatment plant for waste from construction and demolitions	The Valsequillo (Antequera) waste treatment plant bases its activities on the treatment of construction rubble which is treated to become material for roads and other infrastructures. - Construction and planning of plants to treat biogás, mud and large volume rubble.	Eco-innovation good practices catalogue for the province of Malaga.	Indirect impact on eco-innovation	YES (PARTICIPATION IN MEETINGS, FORUMS AND SURVEYS)

Malaga)							
APREAN Renewables	Regional	Informative and of entrepreneurial cooperation support	Eco-innovation support aiming to adapt to renewable energy quality and control rules	Eco-innovation support, aiming to adapt to renewable energy quality and control rules	Eco-innovation good practices catalogue for the province of Malaga	Indirect impact on eco-innovation	YES (PARTICIPATION IN MEETINGS, FORUMS AND SURVEYS)
BIOAZUL	Local	Private enterprise with participation in international projects	Good practices	Creation of LODOred-100k, an innovative environmentally friendly product which aims to reduce mud over-production in treatment plants.	Eco-innovation good practices catalogue for the province of Malaga	Direct impact on eco-innovation	YES (PARTICIPATION IN MEETINGS, FORUMS AND SURVEYS)
Monte Malaga Hotel	Local	Innovative private enterprise	Good practices	Adapting the building to include environmental, energy saving and energy production features.	Eco-innovation good practices catalogue for the province of Malaga	Direct impact on eco-innovation	YES (PARTICIPATION IN MEETINGS, FORUMS AND SURVEYS)
Clock-Technologies	Local	Innovative prívate Enterprise	Good practices	Its activities are aimed to design, produce and integrate equipment and RFID (Radio Frequency Identification) solutions which are environmentally friendly.	Eco-innovation good practices catalogue for the province of Malaga	Direct impact on eco-innovation	YES (PARTICIPATION THROUGH SURVEYS)

5.3. AN OVERAL VIEW ON THE CURRENT INSTITUTIONAL CONTEXT

5.3.1 *Main interest groups and innovation and eco-innovation tools*

Main actors or institutions that are able to support eco-innovation more efficiently both on the regional and local level, are the Ministry of Science and Innovation, the Regional Ministry of Innovation, Science and Enterprise and the Andalusian Technology Network (RETA). The first belong to the public institutions group, and RETA is a non profit association founded by the Andalusian regional government in 2005.

The Ministry of Science and Innovation belongs to the Spanish government. Since 2008 it gathers all the R+D+I tools implemented on the national level, among them, the ones worth mentioning are: the National R+D+I Plan, Ingenio 2010 Plan, PROFIT Programme, the programmes of the Technical and Industrial development centre (CDTI) and INNOEMPRESA plan. The nature of most of these is economical or financial, except for the National R+D+I Plan, which is mainly a document focusing on innovation policies and action guidelines.

The Regional Ministry of Innovation, Science and Enterprise has created two basic documents aimed at supporting innovation in Andalusia: the Innovation and Modernization Plan 2005-2010 and the Andalusian Plan for Research, Development and Innovation 2007-2013 (PAIDI). These are tools of political, economical and financial nature (the first one was allocated 560 million Euros).

The Andalusian Technology Network (RETA) functions as a group of agents aimed at advising Andalusian enterprises on innovation related topics (finance, proceedings, courses, available technologies…); these are distributed both on a territorial and sectorial trend.

When elaborating the Strategic and Operational Plan, only the RETA participated by having some of its agents present at the participative processes and at the drafting of the good practices catalogue.

5.3.2 Difficulties and problems encountered in relation to interest groups and eco-innovation tools

There were no problems arising in relation to the innovation support tools created by the regional and local authorities. It could be the case that there is a difficulty when trying to have a deeper knowledge of the same, but at the same time, RETA's activity is aimed at overcoming such difficulties.

5.3.3 Future actors and tools

The main tool for the closer future is the National Science, Technology and Innovation Law.

As the Ministry of Science and Innovation mentions in its official web, the National Science, Technology and Innovation Law will substitute, once approved, the current Law on Scientific and Tecnological Research from 1986. Its main purpose is to establish a general framework for the encouragement and coordination of scientific and technical research, thus, contributing to sustainable development and social welfare by generating and spreading knowledge and innovation.

The text is made up of four Titles and a Preliminary Title, in which the purpose and objectives of the law are contemplated; it also defines the Spanish System of Science and Technology, which is integrated by the State general administration system and the different regional government systems, and which also includes coordination, finance and execution agents.

The first Title describes the role of general coordination of the State General administration which is granted by the Spanish Constitution, without forgetting the important role of the Regional Governments when it comes to executing research policies.

Coordination is based on a recently created Spanish Science and Technology Strategy, which is the reference framework along the coming years to reach the targets shared by all the territorial administrations; the Council for Science and Technology policies, formed by high level representatives from the State General and Regional Administrations; the Advising Council for Science, Technology and Innovation, which advises the first one and in which all the social and economical agents are represented and lastly the Spanish Research Ethics Committee, which is the consultive body in charge of overseeing ethics in research.

The second Title focuses on human resources dedicated to research. It pursues to create an outline for the professional development of the research staff. Within its new creations, there is an ambitious regulation of mobility between public entities and the private sector, the drafting of labour contracts specific to researchers and the clear idea to evaluate the possibility to develop a professional career in the public research bodies of the State General Administration.

The third Title deals with the encouragement of scientific and technical research, innovation, the appreciation and transfer of knowledge and the scientific and technological culture.

Firstly, it regulates the tools and measures for the encouragement of research, defining an open list of measures to adopt by the financial agents. It also foresees the possibility to sign collaboration agreements.

In relation to the appreciation and transfer of knowledge, it is established that the rules of private law will be the ones applicable, and by which the transfer of knowledge will take place.

The last chapter is dedicated to the internationalization of the system and development cooperation, which points out the importance of these aspects for the research activity.

The fourth Title regulates the encouragement and coordination of research activity in the State General Administration. It is forecasted to create a coordination body: the Governmental Commission for Scientific, Technological and Innovative Policies, which is similar to and consistent with the model ruling the Spanish Science and Technology System. An instrument for multiyear planning is created: the State Plan for Scientific and Technical Research.

Elements and instruments helping to change the productive model are defined in the State Innovation Strategy.

Secondly, the fourth Title foresees the existence of two finance agents of the State General Administration, the newly created National Research Agency and the Centre for the Development of Industrial Technology, which aims to encourage innovation.

Lastly, this Title defines, enumerates and specifies the main functions of the Public Research Bodies of the State General Administration.

The draft also contains a high number of additional provisions which cover very different aspects, transitory provisions, a derogatory provision and final provisions, which amend an important number of laws.

6. STRATEGIC LINES

6.1 IDENTIFICATION OF ECO-INNOVATIVE SECTORS AND ECO-INNOVATION TYPOLOGY

To choose the candidate sectors, not only the most powerful and dynamic productive sectors were taking into account, as is the case of tourism, but also those which represent a high risk for the environment, although they do not have a high relevance on the province GDP. The best example being the food and agriculture industry, and in particular the olive grove industry.

Integral water cycle management and the treatment of urban solid waste have been the sectors chosen due to the high population that the province supports. The high number of population is not only due to its steady population increase, but also due to seasonal visitors, which in some areas as the Western Costa del Sol could reach a 76% of the resident population.

1. Tourism sector. Hotels

The hotel sector belongs to a services model in which customers come in and out from a specific installation.

This sector is a perfect candidate to implement eco-innovation as the energy saving and efficiency measures to be developed in its premises imply a benefit both for the owner and for the customer. Also, environmental engagement gives an added value to the hotel and it is appealing for certain sectors of the population which are environmentally aware.

Renewable energies and energy efficiency should be underlined as the main eco-innovations to be implemented in this sector.

With regards as to how to introduce these technologies, installing solar panels to produce electric energy for illumination and for heating and air conditioning of the installations, as well as to produce sanitary hot water; an energetic auditing should be first carried out.

2. Food and agriculture industry

The Food and agriculture industry is characterized by a model whereby family SMEs or small cooperatives are predominant. Most of the workers have another source of income.

The following activities have an impact on the environment:

1. Farming and land cultivation: cultivation, sowing, fertilization, feeding, plague control, etc.
2. Transport and transformation of raw materials using water or energy as input.
3. Obtaining of the final product, ready to commercialize.
4. Management of waste produced by machinery and installations.

The main type of eco-innovation to be extensively implemented in the food and agriculture industry is: bio-remediation technologies in the olive grove sector, use of low cost porous materials as additives for the soil (zeolites), pre-management of waste by low cost reactive agents (metallic iron for example) and composting.

Other types of eco-innovation with a high level of acceptance are the creation of local markets to commercialize ecological products and the starting of a sustainable and ecological installation for the ecological stockbreeding of a native species of goat from Malaga.

3. Water cycle management sector

The water cycle management sector is the most suitable candidate for innovation development, given its territorial, economical, social and environmental nature, and also due to the different levels of management from the different administrations.

During the water cycle different actors appear, each realizing specific activities aimed at developing eco-innovative tools during the management process:

- Phase 1: Water collection at reservoirs and water extraction using drilling techniques in aquifers.
- Phase 2: Supply of water deposits.
- Phase 3: Drinking water treatment.
- Phase 4: Consumer supply and volume and water net leak control
- Phase 5: Flow of waste water: flow of greywater and blackwater
- Phase 6: Waste water treatment:

The type of eco-innovation proposed is the auditing of water infrastructures on a pilot municipality. Thus obtaining a faithful register of water leaks in the distribution network, permitting the reparation on these and increasing the system efficiency. It was also proposed the implementation of treatments for mud elimination and reduction by using environmentally friendly products.

4. Waste

The waste treatment sector has been selected as candidate due to the importance of its management in the territory, which handles the organization of collection, installations and waste transfer to waste treatment plants.

These aspects are widely covered in the province of Malaga, where there are three waste management areas.

- Provincial Consortium for Urban Solid Waste: manages urban waste of 89 municipalities and serves a population of 519,044 inhabitants (2008). Waste is treated in the Environmental Complex of Valsequillo (Antequera) and in the Urban Solid Waste treatment centre of Casarabonela. It also handles waste compaction in transfer stations, in order to make it easier to transport to the treatment plant.

- Association of municipalities of Western Costa del Sol

The Association of municipalities of Western Costa del Sol manages urban waste of eleven municipalities, which represents a population of 477,470 inhabitants (2008). Waste is treated in the Comprehensive Urban Solid Waste Treatment Plant of the Association of Municipalities of Western Costa del Sol, located in Casares (Malaga).

Furthermore, it also counts with two transfer plants in the municipalities of Marbella and Fuengirola. USW arrives directly to the treatment plant from the municipalities and indirectly from the transfer stations.

Mijas municipality counts with its own USW Treatment Plant, therefore it does not make use of the Casares Plant. Torremolinos dumps its waste in an illegal and non authorized dump located in its own territory.

- Municipality of Malaga.

Malaga Town Hall manages its urban waste through the half public Enterprise, Limasa (*Servicio de Limpieza Integral de Malaga III, S.A.)* whose main aim is the provision of public cleaning services, collection, transportation, treatment and removal of urban solid waste in Malaga city.

It served a population of 566,447 inhabitants in 2008. Waste is treated in the Environmental Centre of *"Los Ruices"*.

The eco-innovations to be implemented in this sector include the production of energy from urban solid waste, with the purpose to at least, cover the needs of the installations for urban solid waste treatment and management, although the eco-innovation implemented was a geographic auditing of the province of Malaga, with the purpose of locating places apt to install new dumps. The map created will make visible the difficulty involved in continued accumulation of waste produced in the province.

6.2 IDENTIFICATION OF GLOBAL TARGETS

The global targets identified at the workshops to which the candidate sectors attended are outlined below. Specific aims and strategic lines of the Strategic and Operational Plan will be developed in order to create the various pilot projects:

- Water cycle sector:

    - *Global target*: Promotion of eco-innovation in the water sector.

- Waste management sector:

    - *Global target*: Promotion of eco-innovation in general terms.

- Food and agriculture industry:

- *Global target*: to encourage the implementation of eco-innovation in the food and agriculture industry (quality, transformation, product control, waste management…)

- Tourism sector/hotels:

    - *Global target*: Promotion of eco-innovation in general terms.

6.3 STRATEGIC LINES

The strategic lines defined for each of the candidate sectors are:

Sector A: Integral water management

> Strategic line: Saving and efficiency on the management of the integral water cycle and encouragement of service improvement.

Sector B: Integral waste management

- Strategies of integral waste management in the public sector
- Strategies of integral waste management in the private sector

Sector C: Food and agriculture industry:

- Strategies of appreciation of sub-products through eco-innovative methods.
- Implementation of new eco-innovative methods of product control and waste management.
- To associate eco-innovation with "differentiation and product excellence"

Sector D: Tourism sector

- Definition of eco-innovation and explanation of why eco-innovation is necessary.

6.4 FRAMEWORK OF OPERATIONAL TARGETS

The strategic lines defined for each of the candidate sectors are:

Sector A: Integral water management

Strategic line: Strategic line: Saving and efficiency on the management of the integral water cycle and encouragement of service improvement.

Operational targets

1.1 To save water

1.2 To improve the service

Sector B: Integral waste management

Strategic line: Waste management strategies in the private sector

Operational Targets

1.1 Creation of a data base with all the enterprises to be included in the integral management of waste

1.2 Waste management in accordance with the current legislation

1.3 Ellaboration of waste management plans

1.4 Specialization of the sector

Strategic line: Integral waste management strategies in the public sector

Operational targets

2.1 Zoning of new waste management installations.

2.2 Research in new technologies in order to minimize costs of selective collection.

2.3 Development of efficient waste management methods.

Sector C: Food and agriculture industry:

- **Strategic line:** Strategies of appreciation of sub-products through eco-innovative methods.

Operational targets

1.1 To promote appreciation of sub-products in food and agriculture sub-sectors of the province through eco-innovative methods.

1.2 To promote consumption of these sub-products related to the food and agriculture industry.

Strategic line: Implementation of new eco-innovative methods for product control and waste management.

Operational targets

2.1 To decrease and improve the control over the use of chemical products in agriculture.

2.2 To minimize the impact of generated waste.

Strategic line: To associate eco-innovation with "differentiation and product excellence"

Operational targets

3.1 To promote the highest quality product in the sector with the lowest environmental impact.

3.2 To promote differentiation related to eco-innovation in the sector, through the development of new products and their commercialization.

Sector D: Tourism sector

Strategic line: Definition of eco-innovation and explanation of why eco-innovation is necessary.

Operational targets

1.1 To meet the existing associations.

1.2 To establish the objective public.

1.3 To create the sector work plan and pilot experience.

1.4 Sector specialization.

1.5 Study of the sector eco-innovative potential.

6.5 ANALYSIS OF EXISTING COHERENCE AMONG INTERVENTION NEEDS AND POTENTIAL STRATEGIC LINES AND OPERATIONAL TARGETS

MATRIX 2 - ANALYSIS OF EXISTING COHERENCE AMONG INTERVENTION NEEDS AND STRATEGIC LINES

1. Water cycle management

a) Intervention need	b) Sector / eco-innovative typology	c) Strategic lines	d) Interested parties engagement	e) Strategy relevance
1. Aquifer over-exploitation and pollution	Integral water cycle management	Saving strategy and efficiency on the integral water cycle management and encouragement of service improvement	Provincial Consortium for water cycle management, Andalusian water agency, Town halls, Provincial government of Malaga, consultancy/engineering	4
2. Numerous dumping (industrial, waste, untreated)				4
3. Bad condition of water supply and drainage network				5
4. Management control and consumption billing problems				5
5. Water usage, efficiency awareness programmes				3
6. Absence of separate networks for waste and rain water				2

2. Food and agriculture industry

a) Intervention need	b) Sector / eco-innovative typology	c) Strategic lines	d) Interested parties engagement	e) Strategy relevance
1. Assessment of eco-innovation in the Food and agriculture industry	Food and agriculture industry	1. Sub-products appreciation through eco-innovative methods 2. Implementation of new product control methods and waste management through eco-innovation 3. Association of eco-innovation with product excellence and differentiation.	SMEs, Provincial Government of Malaga, associations, cooperatives, knowledge agents and consultancy and engineering	5
2. On the ground production control				4
3. Environmental impact of the sector				4
4. Promote the transformation and quality of the product associated with eco-innovation				5

3. Waste Management Sector

a) Intervention need	b) Sector / eco-innovative typology	c) Strategic lines	d) Interested parties engagement	e) Strategy relevance
1.1. Coupling of SMEs into the integrated management systems	Waste management	1. Strategy for comprehensive management in enterprises	Private companies, within the sector, associations and consultancies	4
1.2. To promote in house management of construction waste				5
1.3. Reduction of company waste				5
1.4. Waste valuation				5
1.5. Exploitation of subsidies				1
2.1. Location of new management premises		2. Strategy for comprehensive management in public sector	Public Administration	5
2.2. Avoidance of the extra cost of selective waste collection				3
2.3. Reduction of waste generated at origin				4
2.4. Development of new compost application technologies within the field.				3

4. Hotel sector

a) Intervention need	b) Sector / eco-innovative typology	c) Strategic lines	d) Interested parties engagement	e) Strategy relevance
1. Product differentiation	Tourism (Hotels)	Definition of eco-innovation and justification of the need for eco-innovation	Private companies, within the sector, associations and consultancies	3
2. Lack of mindset				3
3. Lack of professionals				3
4. Lack of competitiveness				2
5. Studies about the eco-innovative potential of the sector				5

MATRIX 3 - FRAMEWORK OF OPERATIONAL TARGETS

1. *Integral water cycle management sector*

SOP Global targets	Strategic lines	Operational targets	Identification of potential actions
Promotion of eco-innovation within the water sector	1. Saving and efficiency strategy in integral water management and improvement promotion in the service	1. To save water	1. Development of awareness campaigns for the population 2. Meetings schedule 3. Implementation of efficient technologies promoting real water consumption knowledge 4. To promote the improvement in irrigation management in parks and gardens
		2. To improve the service	1. To carry out an update of the stock in the facilities of the integral water management in every municipality using G.I.S. 2. To develop software that allows keeping track of all the costs and income of integral water cycle facilities: staff, reactives, energy, repairs, acquisitions, fuels, vehicles, etc. 3. To develop a software which allows the preparation of standard templates which register all damages, types and reparation times. 4. To carry out an installation and renewal plan for meters in municipal premises, as well as those private ones which are more than 8 years old.

2. Food and Agriculture Industry

SOP Global targets	Strategic lines	Operational targets	Identification of potential actions
To promote the implementation of eco-innovation in the food and agriculture industry (quality, processing, product control, waste management)	1. Appreciation of sub-products through eco-innovative methods	1.1. To promote appreciation of sub-products in food and agriculture sub-sectors 1.2. To promote consumption of these sub-products related to the food and agriculture industry	1. Viability study linked to assessment and analysis of associated sub-products' potential. 2. Staff training of associated SMEs 3. Incentives and funds linked to projects of this type. 4. Development of promotion and awareness raising campaigns, conferences and discussions for consumers
	2. Implementation of new eco-innovative methods for product control and waste management	2.1. To reduce and improve control over the use of chemical products in agriculture 2.2. To minimise the impact of generated waste	1. Raising awareness within the sector 2. Use of alternative products (organic products) 3. Promotion of pilot research projects related to organic agriculture or farming (selecting a single variety or species).
	3. To associate eco-innovation with "differentiation and product excellence"	3.1. To promote the highest quality product in the sector with the lowest environmental impact 3.2. To promote differentiation related to eco-innovation in the sector, through the development of new products and their commercialization.	1. Study of existing products on the market related to eco-innovation. 2. Promotion study in the sector of potential organic products. 3. Analysis of funding possibilities for projects related to product excellence and eco-innovation.

3. Waste Management

SOP Global targets	Strategic lines	Operational targets	Identification of potential actions
Promotion of eco-innovation in general terms	1. Strategy for comprehensive management in enterprises	1.1. Creation of a data base with all the enterprises to be included in the integral waste management	Data base with all enterprises
		1.2. Waste management in accordance with the current legislation	To establish a public target
		1.3. Preparation of waste management plans	To draw up a management plan for industrial estates.
		1.4. Specialization of the sector	Conferences, courses and discussions.
	2. Strategy for comprehensive management in public sector	2.1. Zoning of new waste management facilities	Preparation of a map with potential locations for dumps
		2.2. Research in new technologies in order to minimize costs of selective collection	Projects together with technology centres in the sector
		2.3. Development of efficient waste management methods	Market analysis for new systems

4. Hotel sector

SOP Global targets	Strategic lines	Operational targets	Identification of potential actions
Promotion of eco-innovation in general terms	1. Definition of eco-innovation and explanation of why eco-innovation is necessary	1.1. Meeting the existing associations	Meetings of associations
		1.2. To establish public targets	To establish a public target
		1.3. To create the sector work plan and pilot experience	To draw up a working plan
		1.4. To promote sector specialization	Conferences, courses and discussions
		1.5. Study of the sector eco-innovative potential	Preparation of an energy audit in a hotel as a pilot experience

7. OPERATIONAL PLAN

7.1 GOOD PRACTICES RELATED WITH THE LAUNCH OF THE STRATEGIC AND OPERATIONAL PLAN

7.1.1 GOOD PRACTICE IN ECO-INNOVATION N.1 ***LODOred (reducer of sewage sludge)***

Good practice title	LODOred (reducer of sewage sludge)
Enterprise / corporation	BIOAZUL S.L.
Description of the good practice	The creation of an innovative and environmentally friendly product aiming at reducing sewage sludge. This is a very important issue as identified by new European legislation, as this kind of waste has increased due to an increase in urban population. This product has been developed to be used in water treatment plants. LODOred-100k enhances the catabolic efficiency of bacteria found in activated sludge and slows down their capacity to generate new biomass. This process results in the reduction of surplus sludge at source.
Info (webpage, contacts, etc.)	E-mail: info@bioazul.com Web: www.bioazul.com
Name of the MEDOSSIC project partner who has analysed it and designated it as Good Practice	***European Resources Unit-Provincial Government of Malaga and SOSTEMAS S.C.***
Usage of Good Practice in pilot projects	The importance of this good practice as a tool for pilot project within the waste management sector may affect positively the reduction of sludge generated in the different treatment plants with capacity to develop it. Furthermore, this tool might be fundamental in order to plan the management of the pilot project of the Integral Water Cycle.

7.1.2 GOOD PRACTICE IN ECO-INNOVATION N.2 ***"Extension of the scope of the ISO 14.001 and product improvements"***

Good practice title	Extension of scope of the ISO 14001 and product improvements
Enterprise / corporation	Clock Technology
Description of the good practice	The good practice detected in this enterprise originates in the commitment of CLOCK TECHNOLOGY to energy efficiency, being coherent with their environmentally friendly behaviour in their end products and in the organizational cycle. This attitude towards new technologies taking advantage of and respecting the environment is reflected in the manufacturing processes and in the implementation of the product on a small scale, prototypes and electronic, home automation and telecommunication devices. Among these good practices, a project for energy improvement in a residence for the infirm through the installation of thermal solar energy must be highlighted.
Info (webpage, contacts, etc.)	Web page: www.clock-technology.com E-mail: info@clock-technology.com
Name of the MEDOSSIC project partner who has analysed it and designated it as Good Practice	European Resources Unit-Provincial Government of Malaga and SOSTEMAS S.C.
Usage of Good Practice in pilot projects	The extension of the scope of the ISO 14001 is a very coherent business attitude towards the search for new technologies using and respecting the environment. The application of such a standard favours energy saving and efficiency in buildings and it could be very useful for the pilot project on Energy Audits in hotels of the province.

7.1.3 GOOD PRACTICE IN ECO-INNOVATION N.3 ***"Sustainable hotel using eco-technologies"***

Good practice title	Sustainable building using eco-technologies
Enterprise / corporation	Monte Malaga Hotel
Description of the good practice	The Monte Malaga Hotel has designed a building with the following features: environmentally friendly, energy saving and energy cogeneration. The good practices in the construction of this building are: - Installation of photovoltaic solar panels in the façade which, at the same time, provide shade - Natural conditioning of rooms, avoiding energy waste - Better use of "intelligent lighting" regulated according to the exterior sunlight using a home automation device.
Info (webpage, contacts, etc.)	E-mail: monteMalaga@hotelesmonte.com Web page: www.hotelesmonte.com
Name of the MEDOSSIC project partner who has analysed it and designated it as Good Practice	European Resources Unit-Provincial Government of Malaga and SOSTEMAS S.C.
Usage of Good Practice in pilot projects	The development of this good practice is an example of the application of environmental technologies in public buildings, including tourist facilities, very important in the province and mainly over the last years on the West coast of Malaga.

7.1.4 GOOD PRACTICE IN ECO-SUPPORT TO ECO-INNOVATION N.4 ***"Support for technology innovation"***

Good practice title	Support for technology innovation
Enterprise / corporation	Technology Park of Andalucía
Description of the good practice	Support for technology eco-innovation through logistic support and funding programs for sector enterprises. The following good practices are detected: - Incentive program for sustainable energy development in Andalucía - The establishment of the Science and Technology Centre - The establishment of the Technology Transfer and International Relationships Service. - Headquarters of the Andalusian Technology Network (RETA)
Info (webpage, contacts, etc.)	E-mail: spalomo@pta.es Web page: www.pta.es
Name of the MEDOSSIC project partner who has analysed it and designated it as Good Practice	European Resources Unit-Provincial Government of Malaga and SOSTEMAS S.C.
Usage of Good Practice in pilot projects	The creation of institutions, tools and support elements for the funding, information, training and production of eco-innovation are crucial in order to launch any of the pilot projects presented in the strategic/operational plan.

7.1.5 GOOD PRACTICE IN ECO-SUPPORT TO ECO-INNOVATION N.5 ***"Support for innovation in renewable energies"***

Good practice title	Support for innovation in renewable energies
Enterprise / corporation	APREAN Renovables
Description of the good practice	Support for eco-innovation through funds for adaptation of control and quality standards of renewable energy. The good practices developed are as follows: - Support for implementation and development of the Andalusian Energy Plan (PLEAN) 2003-2006, projected until 2010. - Support for the Andalusian Plan for Energy Sustainability (PASENER) 2007-2013. - To adapt those applying enterprises to the modifications according to Spanish RD 661/2007, regulating the activity of electric energy production
Info (webpage, contacts, etc.)	E-mail: aprean@aprean.com Web page: www.aprean.com
Name of the MEDOSSIC project partner who has analysed it and designated it as Good Practice	European Resources Unit-Provincial Government of Malaga and SOSTEMAS S.C.
Usage of Good Practice in pilot projects	Support for the implementation and adaptation to new ecological technologies responds to the need for enhanced energy reduction and efficiency as observed in the pilot project on energy audits to hotels within the province.

7.2. PILOT PROJECTS

PILOT PROJECT 1: "Integral water management: innovative management of the integral water cycle in the small and medium municipalities of the province of Malaga"

7.2.1 GENERAL DESCRIPTION

Project name: PILOT EXPERIENCE FOR THE INNOVATIVE MANAGEMENT OF THE INTEGRAL WATER CYCLE IN THE SMALL AND MEDIUM MUNICIPALITIES OF THE PROVINCE OF MALAGA

Operational targets: Use of innovative tools in management of integral water cycle.

Using the main target as the starting point the following specific targets are developed:

- To achieve sustainable water consumption
- Use of innovative tools in the management of the integral water cycle.
- To gain an exact knowledge of immediate, medium and maximum water consumptions within a municipality
- To determine the performance of municipal networks and this way, the possible leakages. This will allow to plan and optimise the surveys or work to be carried out
- To obtain the real costs of the integral water cycle (supply, sanitation and purification) in the municipality.
- To establish an indicator system which may be useful for the whole province and which allows a sustainable and efficient management of water resources existing in the municipality.
- To promote a responsible use of water, through educational and awareness raising activities for the population in general and for school children in particular.

Involved sector or subsectors: Water. Potential subsectors: construction, automation, new technologies.

Eco-innovative technology used (service/product/process): The technology used in order to establish the proposed action is not directly linked to eco-innovation. However, it is a basic tool to create the data bases needed in order to establish the criteria and strategies for the management of integral water cycle. This technology is based on the GPS (Global Positioning System) for water infrastructures and on the Geographical Information Systems (GIS), as well as on the creation of cost management software and software to collect and visualize water consumptions in real time.

Target groups: *Provincial Consortium for Management of Integral Water Cycle, Town hall of the selected municipality, SITMAP (Territorial Information System of the Provincial Government of Malaga), Andalusian Department for the Environment, enterprises linked to management and treatment of water (Bioazul S.L., Aguas del Torcal), computer enterprise for the creation of software.*

General description of the action to be implemented: The need for an efficient management of water resources for small and medium municipalities in the Province of Malaga through the handling of telematic and remote control equipment has presented an opportunity to improve these facilities, either through pumps, valves, level and flow sensors, etc. This pilot tool is based on the generation and transmission through remote supervision systems in real time, of the results of optimizing water resources in small and medium municipalities.

The information generated is analysed with Geographical Information Systems in order to define the current situation and to generate potential strategies to improve the efficiency of these facilities.

Through the information and analysis generated in all the aforementioned aspects, the expected results of this management tool are:

- The appearance of a common tool, in each territorial area, with which it is possible to load and view data related to supply as well as to the purification process.
- To establish some basic purification indicators.
- To determine some basic supply indicators.
- To create a single database for waste waters.
- To define the remote control model in small and medium municipalities.
- To favour the exchange of experiences and technologies between different agents.
- To install pressure and flow sensors in networks in order to monitor the quality of the service.
- To perform a pilot experience of remote reading with subscribers and a billing example in the corresponding period.

7.2.2 PERFORMANCE AND MANAGEMENT MODALITY

Partnership competencies and their organizational modalities Provincial Consortium for Water of the Malaga Province dependent on the Provincial Government of Malaga is a qualified partner very suitable at provincial level as it has previously participated in cooperation projects with other institutions in a satisfactory way. As for the organizational modality, the Consortium would be the executor of the project directly on the target municipality and would coordinate the rest of participating bodies.

Management model selected for the action: Currently, the Consortium manages a high number of municipal water treatment plants (40 municipalities). Therefore, its ability to have a global vision and possibilities in order to carry out a follow up of the project and its results explains the reasons why this entity leads and executes the project, coordinating the rest of participants.

Procedure: The pilot experience for innovative management of integral water cycle in small and medium municipalities is divided into three phases:

1. Preparation of an inventory and diagnosis of facilities taking cartography and databases in the Territorial Information System of Malaga (SITMAP) as starting point. The aim is to locate, through GPS, all existing facilities in the province participating in the water cycle. In such an inventory, all supply, collection, distribution, sanitation and purification facilities will be observed.
2. Potential action to improve facilities belonging to the integral water cycle.
3. Assessment of the costs of the integral water cycle

The execution term is estimated at 4 months. The following obstacles are foreseen:

- Potential lack of agility of Town hall, lack of availability and receptivity.
- Lack of involvement of the necessary staff of the Town hall.
- Potential instability of weather, making fieldwork difficult.

- Lack of time frame necessary for execution.

Integration and coherence with other planning tools for the local development in the territory: Collaboration in order to include the results of the pilot project in some of the local development planning tools, however the integration of this type of infrastructural audit together with municipal or supramunicipal town planning (including municipal Agendas 21) is considered very appropriate.

7.2.3 ACTIVITIES WITHIN THE STRUCTURE OF THE PILOT PROJECT

The project is structured in three sections. The first one is orientated towards data compilation about the existing facilities in order to get a description of these premises', a series of proposals for action in the improvement of such facilities and an economic assessment about establishing tariffs and management costs.

1. Activities to build up an inventory and diagnosis of facilities:

   Collection facilities and initial connection network:
   - Description and assessment of facilities: collection elements, channelling, storage, electric installation, etc.
   - Information about potential pollution points of surface and/or underground water.
   - Basic study of proposals to establish protection areas for aquifers.
   - Determining optimal storage capacity.

   Distribution network facilities:
   - Description of elements, features and types of networks, materials, cut-off and control elements.
   - Description of the network and operation modes.
   - Assessment of consumption based on available data

   Sanitation:
   - Taking the street map SITMAP as a base, to carry out a description of collectors and their features.
   - Description of rainwater network
   - General assessment of the network, need for rainwater spillways, etc.
   - Waste ordinance in force in the municipalities, specifying the degree of involvement.

   Purification:
   - Description of the EDAR state
   - Assessment according to waste parameters
   - Considerations on the potential re-usage of purified water
   - Definition of integral elements of costs.

2. Proposed action in order to improve facilities belonging to the integral water cycle.

- In supply
- In sanitation
- In purification
- Comments on current prices and costs.

3. Assessment of the costs of the integral water cycle

- Survey of the existing income and costs within one year of supply, sanitation and purification
- Analysis of current prices
- Determining of current cost recovery for each service.

7.2.4 FINANCIAL PLANNING

Economic budget

- Preparation of the inventory and diagnosis: 13,300€
- Proposed actions: 2,000€
- Updating the SITMAP: 4,000€
- Preparation of costs software: 6,000€
- Consumption software: 3,000€

Are there any possibilities of applying for funding to other sources apart from MEDOSSIC?

This is not taken into account, however the Department of the Environment and Town Planning of the Provincial Government of Malaga, the Andalusian Agency for Water of the Regional Government or the Regional Department for Innovation, Science and Enterprise could be involved.

Economic and financial sustainability

To a large extent, the pilot project continuality will depend on the involvement of the Town hall through its staff, who will be in charge of using the software and updating the information in the Geographical Information System for water infrastructure. The cost for the software does not present a problem as it will be supplied for free. Other town halls may also use it and apply the audit technology using their staff or collaborating with Provincial Government.

7.2.5 MONITORING AND EVALUATION

IMPACT INDICATORS

Global objective	Impact indicators	Current value, if identifiable	Expected value
Adaptation of the price to the real cost	Differential between the real cost and the price paid by consumers	-	-

RESULT INDICATORS

Global objective	Result indicators	Current value, if identifiable	Expected value
To know the fulfilment level of the network inventory	% of network inventoried compared to the total	-	-
To know retrospective water consumption data	Number of months with registered data	-	-

REALIZATION INDICATORS

PILOT PROJECT 2: "Plan for the reconversion of the goat production sector in Malaga to organic production"

7.3.1 GENERAL DESCRIPTION

Project name: PLAN FOR THE RECONVERSION OF THE GOAT PRODUCTION SECTOR IN MALAGA TO ORGANIC PRODUCTION

Operational targets: The main objective is to determine the organic production potential of the goat population in the province of Malaga.

The specific objectives of this pilot project are:

1. To systematize information and knowledge about pasture systems in the province.
2. To promote reconversion of the goat production sector in Malaga.
3. To articulate short channels for marketing the organic and local goat production.
4. To promote the coordination of the goat sector in the province.
5. To boost biodiversity through the promotion of local breeds.
6. To promote shepherding as a area of green employment.
7. To give value to the environmental services provided by organic farming in the region.

Sector or subsector: Food and Agriculture. Organic farming.

Eco-innovative technology used (service/product/process): Eco-innovation participates in the production process, but also in the supply/marketing process analysing the potential of short marketing channels.

It is an eco-innovative project which implies a change in production and consumption patterns to reduce environmental impact of a production and business activity.

Target groups: The project needs the collaboration and participation of collectives of the province involved in this sector, for example, *Asociación Al-Munia, Asociación Cabra Malagueña*, Rural University of the Serranía de Ronda, *COAG-Malaga, Veterinarios sin Fronteras*, as well as of the farming sector in the province and the marketing and supply sector.

This project is for farms predisposed to the change to organic production through new eco-innovative technologies, mainly farmers in the province which have the local breed of Malaga goat. The purpose is to obtain data and inform farmers and shepherds in the province.

General description of the action to be implemented: This reconversion plan includes an action plan where the potential and reconversion costs of three farms, located in the province of Malaga, to organic production in the management and marketing of the product, giving priority to short marketing channels.

The three models of organic farms included in this plan are:

- Farm for milk production managed by shepherd: The Malaganian goat in the hills of Malaga.
- Farm for milk production under semi-stabulated conditions: The Malaganian goat in the Axarquía.
- Farm for meat production managed by pasture: Serranía de Ronda.

7.3.2 PERFORMANCE AND MANAGEMENT MODALITY

Partnership competencies and their organizational modalities Partners participating in the project shall fulfil some selection criteria together with a contrasted experience in the sector with influence at provincial level. Thus, participants shall have:

- Experience in the organic farming sector at provincial level
- Experience in short marketing channels
- A commitment with regards to the necessity for cooperation between the different collectives in the sector at provincial level.

The Association al-Munia has contrasted experience in the management of projects for promoting organic production and marketing in the province and has, therefore, an extensive network of contacts and potential actors for developing the project.

This association will coordinate the different organizations involved (farmer professional organization, associations for promoting organic production, promoting farming and biodiversity). This will consolidate an already existing contact network within the agricultural sector in Malaga.

Management model selected for the action: This association, al-Munia (www.almunia.org) is formed by technicians from multidisciplinary fields (commercial-economic, production and communication). Its size (8 partners) allows the application of participating methodologies within the organization. This way of acting together with the multidisciplinary approach of the association and with its contrasted experience in the promotion of organic agriculture (including production, marketing and consumption of organic food) provide the association an ideal profile to coordinate provincial projects which involve different economic sectors. On the other hand, thanks to its experience, 6 years working in this sector, the association has a well established local contact network as well as a direct knowledge of the socioeconomic context of the agricultural sector in the province, which is beneficial towards executing the current project.

Procedure:

The elaboration of the project comprises of 5 phases:

1. Detecting collaborating farms (month 1)
2. Systematization in the handling of collaborating farms (month 2-3)
3. Reconversion study – definition and budget of a plan of action (month 4)
4. Market analysis – economic assessment. (month 4)
5. Proposed action and budget for marketing in short channels and diffusion of results. (month 5)

Integration and coherence with other planning tools for local development in the territory: Surveying of those regional and provincial institutions and entities which are performing similar support actuations in order to identify synergies and complementarities and to get an optimal development of the project.

7.3.3 ACTIVITIES WITHIN THE STRUCTURE OF THE PILOT PROJECT

This pilot project will develop the following activities in order to analyse and evaluate the reconversion potential and costs of organic production farms and their market and economic perspective:

1. *Detecting collaborating farms*

Survey of and visits to farms, farmer cooperatives and goat farmer associations in order to identify collaborators.

2. *Analysis of the current production and marketing*

   Enquiries and group discussions will be performed in order to get contrasted information about the handling of exploitations and about the applied marketing strategies.

3. *Reconversion study -definition of a plan of action*

   3.1. Analysis of an economic technical plan - Aiming at establishing reconversion viability

   3.2. Comparative analysis of economic results in conventional and organic farms.

   3.3. Viability study of organic production.

4. *Market analysis and the subsequent economic assessment*.

   To carry out market research, demand research and marketing research.

5. *Diffusion of results*

   Distribution of information about the results obtained to other participants in the project and any other interested collectives and/or institutions. Publication of the results obtained.

7.3.4 FINANCIAL PLANNING

Economic budget

Phase	Objective	Activity	Repetitions	Price/Unit	Budget
Phase 1	Project presentation	Technical coordination (in working hours)	4	120	480 €
	Selection of the farm	Trips	0,2	10*120	240 €
Phase 2	Questionnaire preparation	Technical coordination	3	120	360 €
	Data collection	Interviews	50	6	300 €
	Conclusions from questionnaires	Technical coordination	4	120	480 €
Phase 3	Reconversion plan	Technical coordination	9	120	1,080 €
Phase 4	Data collection for economic analysis	Technical coordination	4	120	480 €
	Conclusions from questionnaires	Technical coordination	2	120	240 €

	Economic analysis conclusions	Technical coordination	2	120	240 €
Phase 5	Result presentation	Technical coordination	2	120	240 €
		Speakers	3	90	270 €
		Expenses	2	35	70 €
		Materials	50	5	250 €
		Results layout	1	350	350 €
		Printing	150	5	750 €
Other	Administrative expenses		4	120	480 €
				Total (VAT excluded)	**6,310 €**

Are there any possibilities of applying for funding to other sources apart from MEDOSSIC?

Alternative funding sources are not taken into consideration for the first phase.

Economic and financial sustainability

There are funding alternatives from the Ministry for the Environment, Rural and Marine, the Regional Department for Agriculture and Fisheries, the Department of Innovation and from the Provincial Governments which may help to the continuality of some of the actions carried out within the project framework.

7.3.5 MONITORING AND EVALUATION

IMPACT INDICATORS

Global objective	Impact indicators (global)	Current value if identifiable	Expected value
To promote implementation of eco-innovation in the agriculture and food sector	Number of employees in organic farms	-	-
To promote implementation of eco-innovation in the agriculture and food sector	Number of agricultural farms eligible to be transformed for organic production	-	-
To promote implementation of eco-innovation in the agriculture and food sector	Attendance of employees and owners of the sector of information and raising awareness symposiums	-	-
To promote implementation of eco-innovation in the agriculture and food sector	Number of involved administrations and institutions		
To promote implementation of eco-innovation in the agriculture and food sector	Number of strategic alliances created		

RESULT INDICATORS

Global objective	Result indicators (strategic)	Current value, if identifiable	Expected value
To determine the organic production potential of the goat population in the province.	Number of agricultural premises which manage their waste using some kind of ecological process	-	-
To determine the organic production potential of the goat population in the province.	Number of agricultural premises which manage their waste using some kind of eco-innovation	-	-
To determine the organic production potential of the goat population in the province.	Number of dynamized farmers in organic production systems (disaggregated by sex)	-	-
To determine the organic production potential of the goat population in the province.	Number of hectares providing environmental services	-	-
To determine the organic production potential of the goat population in the province.	Pasture surface with shrub surface control able to generate forest fires.	-	-
To determine the organic production potential of the goat population in the province.	Number of potential hectares dedicated to organic farming	-	-

REALIZATION INDICATORS

Global objective	Realization indicators (operational)	Current value, if identifiable	Expected value
To promote the implementation of Eco-innovation in the agriculture and food sector	Number of transformed exploitations	-	-
To promote the implementation of Eco-innovation in the agriculture and food sector	Number of employees in newly transformed organic exploitations	-	-
Appreciation of sub-products through eco-innovative methods	New products originating from the implantation of eco-innovation in exploitations and municipalities	-	-
Facilities and performed activities	Number of visits and diffusion activities performed	-	-

PILOT PROJECT 3: "Energy audit in a hotel in the province of Malaga"

7.4.1 GENERAL DESCRIPTION

***Project name**: Evolutive study of cost savings through the implementation of eco-innovation measures in a hotel in the province of Malaga*

Operational objectives:

The objective of this energy audit tool is the reduction of energy consumption, the improvement of its efficiency as well as minimising the environmental impact linked to tourism activities.

General objective: To promote Eco-innovation in the tourism sector (hotel)

Specific objectives:

- Previous diagnosis
- Energy advice
- Action Plan
- Energy indicators
- Subsequent diagnosis
- External Communication

Involved sector or subsectors: Tourism. Hotel sub-sector. Associations.

Eco-innovative technology used (service/product/process): Eco-innovation is involved in the production process, but also in the service process, analysing the potential of the different affected areas, such as Energy, Water Management, Urban Solid Waste.

Target groups: Enterprisers of Tourism Sector, associations, Provincial Government of Malaga, Engineering Consulting.

General description of the action to be implemented: The action promoted by this project is aimed at searching commitment and raising awareness of hotels and customers as for energy saving and efficiency.

Regarding this, the performance of audits in different hotels within the province is proposed. Being aware of the wide range of hotels, a selection of hotel typologies based in the geographical location, main activity, category and size and hotel rooms is proposed.

The aim of energy audits in hotels is to perform a diagnosis of the energy balance of the building in order to define the main action lines to improve the building energy situation.

7.4.2 ACTUATION AND MANAGEMENT MODALITY

Partnership competencies and their organizational models:

- Hotel with long experience in the sector and predisposed to assume works.
- Important hotel association within the sector which would contribute with its contact network to promote the works and results obtained.
- Engineering-Consultancy with technical equipment and qualified for this type of work such as analysis, advice and implementation of eco-innovative measures in hotel facilities.

Management model selected for the action:

- Technical survey: carried out by the engineering consultancy specialised in these projects.
- Hotel association: broad diffusion of results amongst its partners.
- A 3-star hotel, 30 years old and with real saving possibilities.

Procedure:

This pilot project is divided into 5 phases:

First phase: Data collection and audit planning. 2 months

Data selection

1 - Interview with those responsible for the hotel and collection of information.

2- Audit planning. (Working plan and chronogram)

3-Visual inspection.

4- Questionnaire.

5- Simulation.

6-Preliminary report.

Data collection.

Incongruous cases.

Unique cases.

Conclusions.

Second phase: Experimental measures. 6 months

Planning the measuring process.

Instrumentation.

1-Comfort parameters.

2-Electric parameters.

3-System parameters.

4-Comparison of real and simulated values.

5-Environmental impact.

Third phase: Energy balance diagnosis of the hotel. 2 months

Energy balance

1- Lighting

2- Heating and Air conditioning

3- Hot Water

4- Water saving
5- Kitchen and laundry
6- Lifts
7- Horizontal and vertical measures (cladding).

Exploitation of solar energy

Cogeneration

Energy Management Systems

Fourth phase: Analysis for the improvement of the building. 1 month

1- Analysis of the energy improvement of the building.

Considerations on the buildings insulation.

Considerations on conditioning systems.

Considerations on the control and regulation.

Considerations on energy recovery.

Considerations on solar energy.

2-Analysis of the economic viability of improvements.

Fifth phase: Final report. 1 month

In order to perform the energy audit correctly, it is necessary a one year term in order to study how the hotel functions in summer and winter.

Integration and coherence with other planning tools for the local development in the territory:

There is not information about this topic.

7.4.3 ACTIVITIES WITHIN THE STRUCTURE OF THE PILOT PROJECT

- Previous diagnosis, initial audit, to get to know the initial position of the hotel.
- Strategic Advice, to inform of the potential improvement points and extension of eco-innovation processes.
- Action Plan, to establish a schedule.
- Indicators of the aspects developed in the Action Plan.
- Subsequent diagnosis, final situation, comparison with the initial position.
- External Communication and diffusion of project results.

7.4.4 FINANCIAL PLANNING

Economic budget

"Energy audit on a 4-star hotel"

- *Sub total: €8,000*
- *VAT18%: €1,440*
- *Total: €9,440*

Are there any possibilities of applying for funding to other sources apart from MEDOSSIC?

Incentive order for sustainable energy development 2007-2013 of the Regional Department for Innovation.

Economic and financial sustainability

The aim of this project is to create a model for the rest of the partners. Thus, through the presentation of this hotels experience, other hotels may enter to participate in this initiative.

7.4.5 MONITORING AND EVALUATION

IMPACT INDICATORS

Global objective	Impact indicators	Current value, if identifiable	Expected value
Promotion of eco-innovation in general terms	Initial hotel situation with regards to energy consumption	-	-

RESULT INDICATORS

Global objective	Result indicators	Current value, if identifiable	Expected value
Promotion of eco-innovation in general terms	Number of actions performed in the hotel	-	-
	Execution level of the budget	-	-

REALIZATION INDICATORS

Global objective	Realization indicators	Current value, if identifiable	Expected value
Promotion of eco-innovation in general terms	Number of hotels participating in the project	-	-
	Number of visits		
	Number of diffusion activities carried out.		

PILOT PROJECT 4: Self-managed organic street market network: Sustainability of local organic markets.

7.5.1 GENERAL DESCRIPTION

Project name: Trading of agriculture and food products in local markets

Operational objectives: Production and manufacturing of organic products through local production and distribution systems based in short trading channels, bringing together the productive sector and potential customers.

Involved sector or sub-sectors: Food and Agriculture Industry.

Eco-innovative technology used (service/product/process): The innovation in this project is related to the establishment of principles and norms regulating the functioning of markets and their control and follow up system, whereby producers act as supervisors and, at the same time, are supervised.

Target groups: Producers and traders of the agriculture and food sector with short distribution channels. This plan is addressed to producers and traders and aims to improve prices paid to producers by consumers. In this sense, the aim is to create employment in production areas.

General description of the action to be implemented: The aim of this project is to establish a working methodology in order to create a network of markets managed and controlled by the producers themselves together with other agents who participate in the organisation of this activity and those regulating and controlling their functioning.

7.5.2 PERFORMANCE AND MANAGEMENT MODALITY

Partnership competencies and their organizational modalities

Management model selected for the action:

Procedure:

Integration and coherence with other planning tools for the local development in the territory:

7.5.3 ACTIVITIES WITHIN THE STRUCTURE OF THE PILOT PROJECT

In order to establish an operational methodology of local organic markets, the following lines of action are to be included:

1. To assess realistically the marketable volume in local markets:

   The aim is to asses the different productive systems and the marketable viability of the total production through local markets trying to establish a balance point between supply and demand in local markets.

2. To study the auto-organizational abilities of local organic markets.

   Establishment of some “rules of the game” in organic markets agreed and controlled by the sector.

3. To develop group actions.

Development of support structures in a group dimension for producers, allowing for the circulation of a diverse product range and limiting the financial investment of each producer to develop a new circuit, apart from reinforcing social solidarity and territorial cohesion.

4. To mobilise market competences to develop direct sales.

   Establishment of a training itinerary for producers who may be responsible for the marketing activities, so they can transmit consumers the differential features of their products, their production methods and the idiosyncrasy linked to the production of their products.

5. To guarantee the quality, the origin and the production method of products.

   The establishment of a working system or procedure and organisation to follow up in local markets that guarantee the quality and origin of the products sold in the market, with criteria and principles which imply the participation of producers and the rest of agents involved in their organisation.

6. To establish a progressive approach.

   The strategy to be followed will be studied and analysed from a favourable and motivational point of view.

7. To conceive new products.

   The design of activities that might be carried out to provide an additional offer to the acquisition of products in street markets, timing it according to the different seasons and the most representative production within that season.

8. To analyse the minimum conditions for organising a local market

   A series of determining factors to decide the location of markets and their design will be analysed.

   Among the factors to be more deeply analysed there are the following:

   a) Analysis of the influence area,
   b) Adequate equipment to organise the market, tables, stands or sales points,
   c) Analysis of the supply of the product,
   d) Frequency of participation of farmers in markets,
   e) Appropriate diversity of products in the market, etc.

7.5.4 FINANCIAL PLANNING

Economic budget

Are there any possibilities of applying for funding to other sources apart from MEDOSSIC?

Economic and financial sustainability

7.5.5 MONITORING AND EVALUATION

IMPACT INDICATORS

Global objective	Impact indicators	Current value, if identifiable	Expected value
Production and manufacturing of organic products with local production and distribution systems.	Impact of organic production in local economies	-	-

RESULT INDICATORS

Global objective	Result indicators	Current value, if identifiable	Expected value
Production and manufacturing of organic products with local production and distribution systems.	Number of organic products available in the market		
	New local enterprises and cooperatives		

REALIZATION INDICATORS

Global objective	Realization indicators	Current value, if identifiable	Expected value
Production and manufacturing of organic products with local production and distribution systems.	New local enterprises and cooperatives	-	-
	Existence of a street market network offering organic products managed by the local population	-	-

PILOT PROJECT 5: "Map with potential locations for new dumps in the province of Malaga"

7.6.1 GENERAL DESCRIPTION

Project name: *Map with potential dumps in the province of Malaga*

Operational objectives:

1. Zoning of new waste management facilities

2. Research in new technologies in order to minimize the cost of selective collection

3. Development of efficient waste management methods

Involved sector or subsectors: Waste. New Technologies.

Eco-innovative technology used (service/product/process): The aim is to create an innovative product, understood as a means to raise awareness among the population about the scarcity of new locations to place waste generated in the province.

Target groups: Provincial Government of Malaga, Engineering Consultancy.

General description of the action to be implemented: The project involves the performance of a geographical, geological, environmental, economic and social analysis of the Malaga area, aiming at the elaboration of an explicative cartography on the availability of places to locate dumps.

7.6.2 ACTUATION AND MANAGEMENT MODALITY

Partnership competencies and their organizational models:

- Provincial Government of Malaga
- Engineering Consultancy with technical equipment qualified for this kind of analysis works.

The Provincial Government of Malaga, through the Provincial Consortium for Solid Urban Waste, would coordinate the works. In these works a consultancy would be in charge of performing the fieldwork while the entry of geographical information would be done through the Geographical Information System of the Provincial Government (SITMAP) and the publication would be done by the publication centre (CEDMA) of the Provincial Government.

Management model selected for the action:

- Technical survey: carried out by the engineering consultancy specialised in these projects.
- Provincial Government: coordination of works, capture of GIS layers and publication of the map.

Actuation procedure:

This pilot project is divided into 4 phases:

First phase: Data collection in fieldwork.

Second phase: Incorporation of data to the GIS of the Provincial Government of Malaga.

Third phase: Capture of GIS layers and publication of the map.

Fourth phase: Public diffusion of the map.
Integration and coherence with other planning tools for the local development in the territory:

There is not any kind of information on this topic.

7.6.3 ACTIVITIES WITHIN THE STRUCTURE OF THE PILOT PROJECT

- Fieldwork
- Systematization of collected information and preparation of this information for the SIG
- Capture of GIS layers for the Geographical Information System.
- Map edition
- Information symposium

7.6.4 FINANCIAL PLANNING

Economic budget: approximately 6,000 euro.

Are there any possibilities of applying for funding to other sources apart from MEDOSSIC?

There is no information related to this topic. Potentially the Regional Department for the Environment of the Andalusian Government or the Regional Department for Innovation, Science and Enterprise.

Economic and financial sustainability

The project may attain sustainability through information maintenance and revision done by the Provincial Government of Malaga (Provincial Consortium for Solid Urban Waste and SITMAP).

7.6.5 MONITORING AND EVALUATION

IMPACT INDICATORS

Global objective	Impact indicators	Current value, if identifiable	Expected value
Promotion of eco-innovation in general terms	Increase of information about new dumps in the province	-	-

RESULT INDICATORS

Global objective	Result indicators	Current value, if identifiable	Expected value
Promotion of eco-innovation	Number of generated SIG layers	-	-

in general terms	Preparation of the map	-	-
	Number of diffusion activities carried out	-	-

REALIZATION INDICATORS

Operational target	Realization indicators	Current value, if identifiable	Expected value
Zoning of new waste management facilities	Percentage of provincial territory analyzed	-	-

8. SYNOPTIC SYNTHESIS FRAMEWORK

SECTOR	Water				Agriculture and Food			
Global Objective / Pilot Project:	Environmental technology	Organisational Innovation	Innovative product and service	Green system innovations	Environmental technology	Organisational Innovation	Innovative product and service	Green system innovations
Global objective: Promotion of Eco-innovation in Water **Pilot Project:** Integral water management								
Global objective: To promote eco-innovation in the Agriculture and Food Sector **Pilot Project:** Conversion plan of the goat production sector in Malaga to organic production.								
Global objective: Promotion of Eco-innovation in the Agriculture and Food sector. **Pilot project:** Self managed organic street market network: sustainability of local organic markets.								

SECTOR	Tourism				Waste			
Global Objective / Pilot Project:	Environmental technology	Organisational Innovation	Innovative product and service	Green system innovations	Environmental technology	Organisational Innovation	Innovative product and service	Green system innovations
Global objective: Promotion of Eco-innovation in the tourism sector. **Pilot project:** Energy audit in a hotel in the province of Malaga								
Global objective: Promotion of eco-innovation in general terms **Pilot project:** Map of potential location of dumps								