

SUSTAINABLE DEVELOPMENT OF THE DAIRY INDUSTRY

Project description

Pilot project for the enhancement of the food industry and the introduction of sustainable agriculture practices in Montenegro.

The main project objective is the application of integrated approach and techniques for the sustainable management of the dairy supply chain, providing the national market with well identified typical products developed according to the best practices concerning the sustainability. This will add value not only to the Montenegrin dairy sector itself but also to the tourism, supporting the development of the agro tourism and promoting the image of Montenegro as a destination with high quality local products.

The first essential stage to reach these goals is the application of integrated approach and techniques for the sustainable management of the dairy products supply chain through: the establishment of business connection among farmers, the development of agricultural market infrastructure, the attraction of foreign capitals as a support for the investments into the sector, the construction and continuous improvement of the food safety control system, the promotion of Montenegrin food production and the preparation of guidelines manuals for integration of environmental protection and good practices of the EU Countries into the chain.

A pilot scale development model was used to evaluate the priority actions to be implemented at local level, providing at the same time a road map for the sector development in other areas of Montenegro. The most suitable pilot area has been identified in the Northeast region of Montenegro, involving the municipalities of Bjelo Polje, Rožaje, Berane, Andrijevica and Plav.

Project Status

The project activities started in 2009 under the coordination of the Ministry of Agriculture, Forestry and Water Management, with the involvement of all relevant stakeholders. The final goal is to define a road map for the sustainable development of the dairy sector of Montenegro and its approximation to the European standards. Activities carried out up to date:

- detailed survey on the pilot area concerning all the relevant aspects of the supply chain
- sector survey report
- road map and action plan for the sector development
- analysis of the suitable privatization option for Zora Milk Factory

MASTER PLAN FOR THE SUSTAINABLE TOURISM DEVELOPMENT IN THE MUNICIPALITY OF KOLAŠIN

Project description

The Italian Ministry for the Environment, Land and Sea and the Ministry of Tourism of Montenegro jointly identified the Municipality of Kolašin as a pilot area for the realization of a Master Plan for Sustainable Tourism Development, aimed at driving future initiatives for the long term improvement of the tourism industry in Montenegro, with full preservation and enhancement of natural resources.

The Master Plan, financed by the Italian Ministry for the Environment, Land and Sea, is a challenging and pioneering project aimed at creating an exemplary approach to sustainable tourism through the implementation of specific measures and actions in 10 key thematic sectors. These are: Urban Development, Transport and Mobility, Buildings - Architecture and Materials, Energy and Carbon Emissions, Urban Waste Management, Water and Wastewater Management, Watershed Management, Forest Management, Tourist Appreciation of Natural Resources, Promotion and Marketing of Sustainable Tourism.

The global vision is to guarantee the co-existence and full compatibility of the principles of Economic Growth, Social Equity and Environmental Sustainability. The concept of territorial metabolism, where the resources, feeding the territorial system as input, are processed through the territorial dynamics (metabolism) producing waste outputs (catabolism) and building up outputs (anabolism), has driven our team throughout the work and has demonstrated the need for a comprehensive and effective strategy to accurately predict the correct tourism development in the Kolašin area.

Our Master Plan, duly defining this strategy, will be implemented through an integrated Action Plan encompassing more than 70 specific initiatives grouped into the 10 thematic sectors and interrelated to fulfill a cross-sector approach.

The Master Plan is the first essential step towards the balanced development and long-lasting improvement of the tourist industry in the Kolašin area, through a sustainability-driven approach, complementing the new urban plans currently being drawn up for the town, and establishing guidelines for the utilization and protection of local natural resources.

The Master Plan can play a driving role in the desirable development of tourism in the Kolašin area, supporting the central and local government authorities in applying and enforcing sustainable principles to tourism activities, thus providing a fundamental guide for private and public investment in the region.

Project Status

The project implementation started in November 2008 with the opening of a local office in Kolašin. The activities were developed throughout 2009 and the Final Reports were delivered on December 2009. The official presentation of the Master Plan results was held on February 2010

TECHNICAL SUPPORT IN THE SECTORS OF THE CLEAN DEVELOPMENT MECHANISM (CDM) OF THE KYOTO PROTOCOL AND OF THE NATIONAL STRATEGY FOR SUSTAINABLE DEVELOPMENT (NSSD)

Project description

The project, financed by the Italian Ministry for the Environment, Land and Sea, aims at providing assistance to the Ministry of Tourism and Environment of Montenegro in pursuing the reduction of GHG emissions and the sustainable development.

A first important result of the project was the establishment of the Designated National Authority (DNA), responsible for the implementation of Clean Development Mechanism (CDM) initiatives in the Country, according to the requirements of the Kyoto Protocol. Specialized and continuative capacity building on legal, procedural and technical issues related to CDM projects was provided to the DNA staff. The Italian experts supported the DNA for the preparation of the procedures for CDM projects evaluation process and for the creation of the DNA website.

The technical assistance provided within the project contributed to have an operative DNA by the end of 2008. The first CDM projects in Montenegro were submitted to the DNA during the first half of 2009.

Further support was provided to enforce the national know-how on the management of the Kyoto Protocol issues and on the approximation to the EU schemes on renewable energy, energy efficiency and emission reductions and in the future climate change negotiations, with specific reference to the step-by-step obligations and actions Montenegro shall perform towards this target.

Concerning the implementation of the National Strategy for Sustainable Development (NSSD), within the project a set of demonstrative initiatives was identified and preliminary evaluated. The pilot projects will provide a valuable example to understand the actual effects of the sustainable development projects of the three pillars of this approach (Economy, Society and Environment) defining key energy inputs and outputs, and other natural resources production, consumption and/or saving, as well as footprint and materials requirements, direct and indirect employment generation and an estimate of capital operational costs and revenues, define the likely investments needed, the operational costs and the revenues generated by the project.

Within the project scope, the Italian experts are developing a communication and dissemination strategy related to the ongoing activities in Montenegro in the CDM and Sustainable Development sectors. Specifically, the project foresees the assessment of European programs that are relevant for Montenegro, the establishment of a network among potential investors, and technology providers, the organization of promotional events, i.e. workshops in Brussels, intermediate and final dissemination seminars in Podgorica and in Italy

Project Status

Activities carried out up to date:

- DNA establishment
- training of TOB members
- preparation of the procedures for CDM projects evaluation process and for the creation of the DNA website
- assistance in the Evaluation of PDD connected with the CDM Portfolio
- proposal for DNA structure and procedures improvement
- revision of PDDs, now ready for approval (Bundling of Plevlja and Niksic landfills)
- permanent office established in Bruxelles to provide dissemination activities on the bilateral cooperation towards EU authorities
- Identification and evaluation of Sustainable Development projects
- monthly Newsletter on Sustainable Development activities in Montenegro regularly uploaded on Montenegro DNA website

INTEGRATED AND SUSTAINABLE MOBILITY SYSTEM IN PERAST

Project description

The Italian Ministry for the Environment, Land and Sea is promoting the development of an integrated and sustainable accessibility system for the town of Perast, a UNESCO world heritage site located in the Boka Kotorska bay.

The project idea consists in improving the town accessibility, limiting the use of private cars and implementing tourist services through the development of a system of sustainable mobility inside the old village of Perast and connecting the local system with the main surrounding cities through an intermodal system, contributing to the improvement of tourist traffic and emissions reduction.

The multimodal integrated transport system and service will be based on interchange parking places system, electrical powered personal short range transport system with solar powered charging station and innovative goods delivery service.

The project target is to operate on the modal shift to increase the use of innovative zero emission systems and of public transport system, while maintaining competitive travel time and travel costs through a management system to support the accessibility procedures.

Only authorized persons, such as residents, disabled or aged people, freight transporters, will be allowed to use their car in the village area. This means to transform the town in a limited traffic zone, with interchange areas where the tourists can leave the car and visit Perast walking or using ecological vehicles; combining these restrictive measures with the use of innovative, ecological and amusing vehicles, can play the role of attractive element.

The Perast mobility system will include bikes (traditional and electrical), electrical cars and Segways. The use of these vehicles can be considered the core of the mobility system. Around it, an integrated transport system will be implemented.

Project Status

The project started in 2009 with a feasibility study delivered to the Ministry of Tourism of Montenegro. A public presentation of the concept design was held in Perast on January 2010 to inform the stakeholders about the project. Activities carried out up to date:

- traffic flow measurement and analysis on July-August 2009;
- feasibility Study for the Sustainable Mobility System issued on December 2009 (English version)
- concept Design (English version) presented in January 2010
- detailed design (English version) completed in February 2010
- preparation of Montenegrin version of Feasibility Study/Detailed Design ongoing

MASTER PLAN FOR THE SUSTAINABLE TOURISM DEVELOPMENT IN THE MUNICIPALITY OF ŽABLJAK

Project description

The Italian Ministry for the Environment, Land and Sea is promoting the realization of a Master Plan for the sustainable tourism development in Žabljak, aimed at avoiding pressure on the environment, thus exceeding the “carrying capacity” of the Žabljak area.

The Master Plan, accounting for the site features such as the outstanding natural resources, rich biodiversity, specific landscape values, etc., should avoid producing considerable pressures on the environment, in terms of destruction of the traditional landscape, congestion in the transport system, air/land/water pollution, inefficient use of energy, etc.

The Master Plan pursues a sustainable development approach to the resort construction and management, i.e. the simultaneous satisfaction of the constraints related to economic development of tourism activities, social equity and environmental protection. To this aim, the guiding idea is to value all the possible local points of attraction, with particular attention to the natural and human heritage, maximizing at the same time the efforts to preserve the area of intervention and the ways to take pleasure of it.

The Master Plan has the general objective of applying the principles of sustainability to all tourism activities to be implemented in the Žabljak region and it will contribute to the ongoing process of privatization of tourist areas in Montenegro, in order to avoid an uncontrolled massive construction like happened along the coast.

The tourism development of the area is modeled through a metabolic approach: the resources, feeding the territorial system as input, are processed through the territorial dynamics (metabolism) producing waste outputs (catabolism) e.g. destructive activities and building up outputs (anabolism) e.g. constructive activities; the Master Plan will regulate these processes, providing guidelines for the most sustainable options.

Project Status

The results of the project, launched on July 2009, will be available by the end of 2010.

Activities carried out up to date:

- realization of technical surveys
- data collection and analysis
- identification of the Master Plan objectives
- evaluation of the ongoing planning activities in the area

RENEWABLE ENERGY RESOURCE ASSESSMENT IN MONTENEGRO - WIND, SOLAR, AND BIOMASS

Project description

Within the cooperation for Environmental Protection between Italy and Montenegro, in 2007 the Italian Ministry for Environment, Land and Sea financed the Renewable Energy Resource Assessment (RERA) in Montenegro, focused on wind, solar and biomass potential.

The theoretical resource potential was estimated through field data and modeling tools, then the exploitable potential was assessed superimposing the most relevant constraints, such as natural protected areas, distance from roads and electric lines, etc..

The results of the study were considered by the Montenegrin Government for drafting the energy strategy. RERA was used as a valid support for the implementation of energy production initiatives in the sector of renewable sources, leading to identify the most promising sectors and areas for the development of the renewable energies and to suggest possible follow up actions for the improvement of the use of renewable energies.

The RERA project provided a valid support for the implementation of energy production initiatives in the sector of renewable sources in the Montenegro territory. The main objective was to provide a first Renewable Energy Resource Assessment for the Republic of Montenegro, with specific reference to the following three renewable energy sources: a) wind, b) solar, and c) biomass.

The most suitable areas for wind power installations were preliminary identified; according to this preliminary estimation, Montenegro showed an overall potential of 400 MW taking also into account the zones with medium potentiality. This potential energy output could provide up to 20-25% of the yearly power consumption of the Country.

Maps of global solar radiation over the whole territory of Montenegro were produced with the values of global radiation on a daily basis. The assessment showed that Montenegro has one of the greatest solar energy potential in the South-Eastern Europe, since the annual number of sunshine hours is more than 2,000 hours for most part of the country and even 2,500 along the coast. The solar energy potential was assessed in two of the most promising sectors: solar thermal energy for households and solar thermal energy for the tourism industry.

The biomass energy potential assessment was focused on forestry resources, wood waste and agriculture. For the forestry, the evaluation was based on the data provided by the competent authorities (forestry institutes, etc.). Regarding the wood waste, the available data on the wood industry sector in Montenegro were evaluated, with specific reference to the identification, description and evaluation of the local sector of activities (sawmills, other wood processing industries, etc), the assessment of production capabilities and capacities, the estimate of the amount of wood waste generated, etc. Concerning agriculture, the evaluation was based on the estimation of the possibility to produce biofuel.

The analysis of the potential of wind, solar and biomass energy sources shows that renewable energies can play a significant role in the fuel energy infrastructure in Montenegro. However, there are a number of barriers that prevent greater utilization of renewable energy in the Country, i.e. very low prices of traditional fuel energy sources, lack of investors interested in investing in these technologies, absence of a complete legislative base to promote renewable energy, lack of information to the population, not aware of the opportunities of renewable energy. For the development of wind and biomass energy sources, feasibility studies are needed to assess the actual suitability of specific interventions from the technical-economic perspective. In the solar energy sector, since distributed systems in the household and tourism sectors are expected to eventually take place, a specific market study and an exemplar show case project could support and accelerate the actions of the decision-makers.

Project Status

The study was officially presented to the Montenegrin Government in February 2007, and then used as reference document for the preparation of the Energy Development Strategy of Montenegro by 2025.

FEASIBILITY STUDIES FOR CDM PILOT PROJECTS

Project description

The Italian Ministry of Environment Land and Sea, with the technical support of the Government of Montenegro and local public institutions, pursued the development of 4 feasibility studies for CDM pilot projects, devoted to the promotion of renewable energy sources. Specifically, the initiatives concerned two small hydro power plants (at Slano and Krupac water reservoirs), a wood biomass power plant in Berane and a biogas to energy system in the Podgorica landfill.

SHPP

After a preliminary evaluation of the feasibility of the SHPPs only the Krupac project was considered feasible. The reservoir of Krupac is located in Niksic plain, in western Montenegro, about 5 km north-west of Niksic; Krupac Reservoir was built on the Mostanica River, about 50 years ago and has a surface of the reservoir is about 5.5 km². The SHPP Krupac could be built downstream of the outlet work of Krupac dam in order to exploit the available head between the reservoir water level and the water canal elevation downstream.

Landfill Gas to Energy

Podgorica landfill is the only operative sanitary landfill in Montenegro. The landfill site is located in the South-Eastern part of Podgorica, 6 km from the centre of the city.

The Feasibility Study was developed taking into account the current configuration of the site and its development program. Based on the study outcomes, the expected overall electricity production should be approximately 165,000 MWh over 21 years. The quantity of CO₂ avoided from CH₄ combustion and from electricity displacement should result in a total CO₂ reduction of 690,000 tons.

Berane Biomass Power Plant

The feasibility study was aimed at providing the Italian and Montenegrin Ministries, the relevant International Financial Institutions and the potential public/private investors with a preliminary evaluation of the technical, economical and administrative feasibility of a power plant fed with wood biomass (3 MW net electric power). The fuel for the proposed power plant will be wood residues from forests and from sawmills, and the area involved in the project includes the Municipalities of Berane, Andrijevica, Rozaje, Plav and Bijelo Polje in the North East of Montenegro.

The power plant will be located within an old paper factory site, in the Municipality of Berane. The old paper factory is located out of Berane, in the North-East of the city, between river Lim and stream "Brnjica". The performed survey, the data analysis and the proposed power plant configuration supported the technical feasibility of the project.

Project Status

SHPP

The Feasibility Study for the Krupac SHPP, showing a potential yearly energy generation of approximately 1,600 MWh, with an operating time of 4,140 h/year, was delivered to the Ministry for Economic Development of Montenegro and to EPCG on March 2008.

Landfill Gas to Energy

After the approval of the study by the Montenegrin authorities and the site owner, the Italian company ASWS was selected through a Call for Expression of Interest, published on May 2009 and aimed at realizing the project in partnership with the local site owner. The representatives of the selected company have performed a site visit on September 2009 and agreed on the steps for the joint venture creation in February 2010.

Berane Biomass Power Plant

After the approval of the study by the Montenegrin authorities, the local partner (Municipality of Berane) officially approved the project activities in September 2009. In December 2009 the Mayor of Berane signed an exclusivity agreement with the Italian side to update and review the study and assist the Municipality in the selection of the company for the construction and operation of the plant.