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Environmental Protection in South-East Europe

“It is necessary to understand the links between environment and development in order to make development choices that will be economically efficient, socially equitable and responsible, and environmentally sound.”

Source: Keating 1993

The well-preserved natural resources of SE Europe should be regarded as one of its greatest comparative advantages. Therefore, it should be constantly emphasised that the countries of the region have the realistic possibility to establish a modern and progressive society and, at the same time, to preserve a good quality environment that human security, development and prosperity highly depend on. Economic growth, social cohesion and environmental protection can go hand in hand, as the concept of sustainable development suggests. The sustainable use of natural resources, pollution prevention and nature conservation secure community welfare that should be the primary objective of every local self-government. In this respect, much can be done at the local level.

The aim of this chapter is to acknowledge the progress and some recent achievements at the local level (often the first step towards a global solution) in the field of environmental protection in the region. For this purpose, successful initiatives and undertakings of different actors within different frameworks are presented in the form of six case studies. The focus is on a variety of approaches, themes and objectives:

The Troyan Environmental Action Project (Bulgaria) was chosen as one of the earliest Local Environmental Action Programmes in Central and Eastern European (CEE) countries, initiated in 1992. Afterwards, LEAPs have been implemented to some degree in most CEE countries. The Troyan EAP has demonstrated how a municipality, with the active participation of its citizens and the effective planning tools, can prioritize environmental problems, formulate cost-effective strategies to deal with these problems, and create new partnerships to implement the desired actions.

Developing the guidelines for the sustainable development of Jelsa Municipality (Croatia) has been chosen as a case study to emphasize the importance of a participatory planning process in which a local

community had a proactive role, the practice still uncommon in the region. This often results in unfeasible projects and plans because people fail to perceive them as their “own”, as they were not included in the planning and the decision-making process, and their opinions, approaches, values, and ideas were not taken into account. As a part of the planning process in Jelsa, a design has been defined which is currently available to the local authority: the first (often the most difficult) step in the direction of the planning of sustainable development.

What is LEAP?

The Local Environmental Action Programme (LEAP) is a participatory process for a regional or local community that leads to concrete environmental investments. LEAP involves setting environmental priorities and selecting the most appropriate actions for addressing priority environmental issues in the community.

LEAP provides a forum for bringing together a diverse group of individuals - sometimes referred to as a "Stakeholder Group" - with different interests, values, and perspectives. These individuals work together over a 12-24 month period - in partnership with the regional or local government - to agree on common priorities and actions for addressing environmental problems in the community. These priorities and actions are compiled in an Environmental Action Plan that serves as a blueprint for future environmental investments in the community. Recommendations from the environmental Action Plan are then incorporated into the decisions of the Regional or Municipal Council and other implementing bodies.

Why LEAP?

Your community will benefit from a LEAP, because the programme:

- emphasizes consensus approach among diverse sectors
- results in environmental actions with broad public support
- targets limited resources on most serious problems and biggest opportunities
- removes myths existing in communities (e.g. regarding real polluters and environmental issues)
- helps implement national policy at the local level
- supports implementation of the European Union requirements.

Source: ISC and REC 2000

The Integrated Municipal Waste Management in Ramnicu Valcea (Romania) case study contains successful practical solutions for managing municipal waste, one of the most acute environmental problems in the region - and wider. This case has already been recognized and acknowledged as one of the six Best Practices from Eastern and Central Europe in Urban Environmental Technologies at the Johannesburg Summit.

Another case study from Romania, from the town of Campeni, lists technical and economic advantages of the utilization of wood waste for the district heating fuel. It represents a remarkable step forward towards reducing dependence on non-renewable resources. The project also has a large potential for application in a number of urban areas with woodworking industries and district heating systems.

The activities in the Drina river basin aimed at solving the solid waste problem are presented as a case study from Serbia and Montenegro and Bosnia and Herzegovina. Having in mind the recent history of conflicts in the area, it is especially gratifying to see there is a will for joint actions in solving environmental problems at the cross-border level, initiated by local communities.

The protection of Eurasian Griffon (Croatia) is selected as a case study demonstrating an endangered species conservation. It owes its success to a holistic approach that includes working with the local community to protect not only the endangered species but also its habitat through sustainable practices. Additionally, the established Eco-centre serves as a tourist attraction and also promotes environmental education and voluntary work.

Finally, the theatrical event "Actors in Zagvozd"-Friends of Environment (Croatia) showcases a successful way of mobilising communities, activating rural areas and enabling the synergy between culture and environmental protection in order to promote natural and cultural heritage.

Although not every aspect of environmental protection is covered by this compilation, each of the selected case studies illustrates the outcomes of committed actions, stakeholders involvement, productive partnerships and sharing of resources and knowledge. It should also be noted that the financial assistance provided by international and donor organisations often played an important role, enabling local governments to overcome insufficient financing from the national budgets and to achieve their desired goals.

In conclusion, each case included in this overview has already

contributed to the better quality environment and made a step towards sustainable development of local communities in the region, often improving their quality of living and economic activities. Hopefully, the presented success stories will inspire and encourage future initiatives.

Case study 1. Troyan Environmental Action Project (Troyan EAP)

This case study is provided by the Institute for Sustainable Communities.

Location

Troyan (Bulgaria) is a community of 46.000 people situated in the northern foothills of the Balkan Mountains at the edge of a biosphere reserve and natural park. Approximately 145 km east of Sophia, its natural beauty and the ancient monastery make the area a popular recreational site.

Who participated

The project was managed by the US Institute for Sustainable Communities (ISC) that promotes environmental protection through participatory decision-making at the community level in Central and Eastern Europe and Eurasia through technical assistance and demonstration projects.

The Troyan EAP Committees comprised volunteers from citizen groups, farmers, teachers, students, municipal officials, and representatives from regional government agencies, non-governmental organizations (NGOs) and the private sector.

A US Peace Corps volunteer provided logistical support for the citizen committees.

Two full-time staff have been hired for the ongoing operation of the water conservation programme within the municipal leak detection office, and 1 full-time person has been hired at the municipal environmental education department for the environmental education programme.

Description

Environmental problems have compromised Troyan's beauty and economic prosperity. The poor solid-waste management and the inadequate sewage treatment were polluting the local water sources and causing health problems, and the combustion of high-sulfur coal and oil for home heating and industrial processes was polluting the air.

The municipality wanted to improve the environmental conditions but had little experience in environmental management.

The 21-month demonstration project was aimed at improving the environmental management capacity of both the Government and the NGOs at the national and community levels. In particular, the project's aim was to transfer the environmental management expertise to municipalities and develop a model for environmental planning and management using a comparative risk assessment process and participatory decision-making methods. The ISC conducted 6 training sessions with the Troyan communities. The specific tasks of the Troyan EAP were to evaluate risks to public health, ecology and quality of life (social and economic factors) associated with the community's environmental problems, to rank these problems based on their relative risks, and to develop and implement an action plan to address the most severe problems. The project participants were assisted in gathering reliable and relevant data, in improving the quality of environmental analysis, and in adopting cost-effective solutions.

Objectives

- To develop local environmental management expertise by introducing a planning model which incorporates environmental risk assessment and participatory decision making methods. These methods were used to prioritize problems, compare risks and formulate cost-effective solutions.
- To serve as a demonstration for other communities that wish to put in place effective environmental management strategies.

Implementation

The project consisted of the following phases: project organization and initial training; problem identification and comparison of environmental risk; development of an Environmental Action plan and the selection of strategies; implementing strategy, monitoring and evaluation.

Phase 1: project organization and initial training

During the initial phase of the project, in early 1992, two Citizen Committees were formed to undertake the work on the project:

- 1) The Policy Committee - responsible for educating the public, soliciting public opinion, and actively involving the public. They also helped to identify environmental problems for study, review data and analyses prepared by the Technical Committee, and assist in preparing the environmental action plan. Its members came from all

the groups in the community - local government, business, non-government organizations, farmers, citizens, students, teachers, media, etc.

- 2) The Technical Committee - responsible for collecting and analyzing information about the risks associated with various environmental problems and their potential solutions. It consisted of people with specialized training, expertise and experience in the fields of environmental and/or public health, natural sciences, economics and pollution control.

The Committee members were appointed by the Mayor of Troyan on a voluntary basis.

The mandates and the terms of reference for these Committees were established under the direction of the ISC. A project office was established, a local coordinator hired, and a US Peace Corps volunteer appointed to provide the logistical support for the Citizen Committees.

The ISC provided the Committee members and the project staff with the necessary training and resources required to fulfil the risk-based planning tasks. The Committee members were responsible for evaluating the risks associated with the community's environmental problems, ranking these problems on the basis of their relative risks, and for developing and implementing an action plan to address the most severe problems.

Phase 2: Problem identification and comparison of environmental risk

During the next phase the Policy Committee undertook a poll to determine which environmental problems were considered to be the most serious ones by the residents. Four thousand citizens identified the inadequate supply of clean drinking water, air pollution, deforestation, and surface water contamination as the most serious problems. This information was used by the Technical Committee in compiling the list of problems. The Policy Committee also carried out numerous activities to educate the public: holding briefings, publishing articles in the local press, and setting up notice-boards.

The Technical Committee collected further data and assessed the scope of related environmental problems. During the initial phase of the project, the categories of risk were selected by the Technical Committee for the evaluation of environmental problems. The specific categories of risk used to evaluate the problems in Troyan included public health, ecology, and the quality of life (social and economic factors). The final

list of the problems was subjected to a comparative risk analysis in which the best available scientific information was used to assess the relative risks of environmental problems for human health, ecology and the quality of life.

The environmental problems were ranked based on the scientific information derived from the risk analysis and the public input. To help the Technical Committee achieve consensus on the priorities, a two-day working session was held. During this session, the information associated with the risk analysis was reviewed and a practice ranking session was convened.

Through an examination of the data and the public discussions, the problems were eventually ranked. Jointly, the two Committees identified two problems as the highest priorities: the poor quality and the low quantity of drinking water and the pervasive air pollution.

Phase 3: Developing an Environmental Action Plan and selecting strategies

With a focus on drinking water and air pollution, the Committees established the long-term goals and gathered some information on the alternative actions from the U.S., Western Europe, and CEE. The Committees then evaluated these actions based on, among other criteria, their relative cost-efficiency, effectiveness in addressing the problem, and the amount of time needed for the implementation. The Committees summarized this information in an EAP. A draft EAP was then circulated for comment among the public, the Municipal Council, and the staff of the Municipality. After the comments had arrived and were duly incorporated into the draft, the Troyan Municipal Council approved the final EAP. The ISC provided a grant to the Municipality to help implement the recommended actions.

Phase 4: Strategy implementation

As a framework for action implementation, the Committees developed a detailed Implementation Plan that identified specific steps, specified responsible groups and agencies, proposed a timeframe, and established a budget for each action. The Committees decided to focus on three specific implementation actions: the detection of leaks in underground pipes, the industrial water consumption, and the environmental education.

The Committees, in cooperation with the Municipality and the local water utility, established a comprehensive programme to detect and repair leaks in the underground water main and distribution pipes. The

Committees discovered that almost half of Troyan's drinking water escaped through these leaks. The Municipality purchased some leak detection equipment, and a western expert helped the local water utility staff design and implement the programme.

The Committees decided to target industrial water usage since industrial plants consumed more than 60 percent of Troyan's drinking water supply. A specialist conducted the wastewater audits for five largest industries in Troyan; these audits revealed enormous opportunities for saving water and reducing the wastewater flows. As a result, the Municipality implemented an industrial water audit and the control programme to reduce the industrial water consumption. Finally, the Citizen Committees supported the establishment of the Troyan Environmental Education and Information Center within the school system, which promoted the environmental education in schools and of the general public.

Phase 5: Monitoring and Evaluation

The Citizen Committees and the Municipality established a joint management team to oversee the project implementation. Further, the Municipal Water Utility established a special unit to detect and fix leaks, and digitize the map of the underground pipe network.

Results

- Troyan Municipality repaired 70 leaks in the underground pipe network and replaced almost one kilometre of pipes, resulting in water savings of approximately 10%.
- Digitized the map of the underground pipe network was produced.
- A new environmental ordinance that requires industries to pay based on the amount of water they use and to file information on their water consumption with the Municipality was adopted. The ordinance requires the largest industrial water users to develop their own water supply, where feasible.
- An audit of the entire water system was conducted and detailed the water audits of the largest industrial plants. The plants were provided with the information on how much they were wasting, how much money this cost them, and the specific measures they could take to decrease their water use.
- The relationship between the Municipality and industry regarding environmental problems has improved as a result of the project. Major industries have subsequently met with Municipal officials to

discuss the solid waste and wastewater management plans. Several industries are now seeking funding to implement some low-cost pollution prevention methods.

- A new environmental education center that promoted environmental education in the schools and for the public was established.
- The EAP Committees produced several publications and distributed them to all Bulgarian municipalities: it conducted a national workshop to share the Troyan experience and encouraged other municipalities to initiate similar projects.
- A national environmental assistance programme is now emerging with some strong support from the Ministry of Environment. Three Ministries signed a Memorandum of Understanding pledging to work together to assist municipalities to address environmental problems and consequently established an inter-ministry environmental task force.

Lessons learned

- In the risk analysis stage, there were many problems in determining what information was available and from which sources, the ways of obtaining and accessing information; and data accuracy/validity. The ISC recommends that communities undertaking similar projects conduct a preliminary survey of information providers.
- It is critical that the key national and regional governmental agencies, which can provide environmental assistance to municipalities, are identified and their cooperation ensured. The municipalities would benefit from assistance regarding fiscal management, environmental legal authority and responsibilities, auditing and monitoring, using management tools, project design and implementation, environmental enforcement, project financing, work plan development, public participation and technical issues.
- Training should also be provided for the representatives of the national government agencies, the NGOs and the private sector in roles and functions, strategic planning, work plan and budget development, financial management, public involvement, monitoring and evaluating programme implementation. The project evaluation forms should be integrated into the training activities.

Financing

The US EAP, in cooperation with the US Agency for International Development, provided funding to the ISC to carry out the Trojan EAP (US\$ 335.000) and to implement an action plan (US\$ 60.000). The ISC provided a grant to the Municipality of Trojan of up to US\$ 35.000 to implement the recommended strategies, and covered the cost of the publication of the project documents. The Municipality is responsible for providing a 10% contribution towards the implementation, either in labour or materials.

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Case study 2. Guidelines for Sustainable Development of Jelsa Municipality

This case study is provided by ODRAZ, Croatia.

Location

The Municipality of Jelsa, the island of Hvar (southern Adriatic), Croatia. Jelsa Municipality is situated in the middle of Hvar, has approximately 3800 inhabitants and covers an area of 118 km².

Who participated?

The research was prepared and conducted by the NGO ODRAZ, based on its own field work and with an input from the colleagues from the International Institute for Industrial Environmental Economics from Lund, Stockholm Environmental Institute, and the Jonnaum Research from Graz.

The research was conducted in partnership with the local authorities, in cooperation with the local NGOs (CIMA Jelsa, CIMA Vrboska), and the participation of individuals dedicated to their community. Around 50 people were involved in the process.

Description

As in many local communities, the local government in the municipality of Jelsa *improvises rather than plans* its development. The reasons for

this are many, but the most significant ones are the poor information exchange (national - regional - local government - citizens), and the poorly developed good-governance (transparency, quality management, public participation).

An analysis of this lack of systematic planning at the local level was conducted by experts and relevant individuals.

A report "Guidelines for Sustainable Development of Jelsa Municipality" was developed as a baseline planning document for the local government. This process was envisaged as a *model* so it could be *replicated* in similar communities.

Objectives

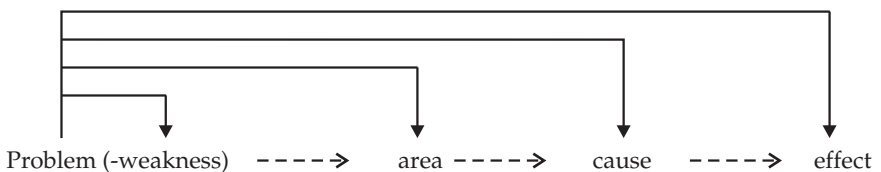
- to *initiate* the planning process by using all available local resources to create a sense of priority and common interest aimed at achieving sustainable development
- to draft a vision of development of the municipality of Jelsa including a priority action plan as a baseline planning document for local government that would bring together relevant development topics.

Implementation

Step 1

Prepare and revise with authorities the assessment methodology and action plan for implementation. The methodology was based on the variation of the "problem tree" analysis.

The problem analysis was conducted regarding the problem's origin (where it belongs - the area, e.g. local government, SME, environmental issues) and dividing it into the cause and effect.



Step 2

Information gathering and overview of the situation in the municipality and the current development practices. Based on this information and input from the participants of the research the mapping of the current situation was completed. This current situation helped pinpoint the three main development scenarios (see table 1).

Step 3

The "Island Sustainable Development" Congress was organized to present the concept of sustainability, and the concrete examples and potentials of sustainability in different fields of work. Some of the topics covered marine biodiversity and marine protected areas, solar energy, organic agriculture, credit lines such as island tourism incentives, natural and historical heritage and eco-tourism, nautical tourism.

Each topic aroused great interest and the participants asked a lot of questions after the lectures and exchanged information. In this way approximately 150 islanders directly - and many more indirectly - raised the awareness of their own responsibility for their development as well as of the opportunities to do it effectively.

Step 4

The assessment of the opportunities for sustainable development included:

- individual interviews with 30 local representatives
- overview of the situation in the municipality and the current development practices
- problem cause-effect analysis
- analysis of developmental resource potentials
- producing development scenarios
- designing the development of Jelsa
- defining development priorities and potential projects
- publishing the report "Directions for Sustainable Development of Jelsa Municipality".

Based on the research and opinions expressed by the inhabitants of Jelsa during interviews, the overview of the situation in the municipality and the current development practices was compiled. The criteria in determining the priorities were: 1) importance, 2) urgency and 3) implementation ability. Based on these criteria, four priority areas were identified - the Main Development Areas (see table 2).

The overview of the situation can be presented in the form of the main development scenarios. The table below gives the simplified scenarios regarding the Main Development Areas (MDA). A more detailed analysis of each MDA was conducted and presented in the study but here only the general findings are offered.




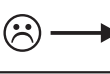


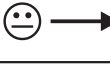





Each area in the scenario is given a mark:

- positive/desirable

- neutral/undetermined
- negative.

Arrows indicate the trend of improvement or deterioration of the specified area, while its curve direction defines the depth of the change.

Table 1.: Development scenarios of Jelsa Municipality

| <i>Main Development Areas</i> | | <i>Scenarios</i> | | |
|-------------------------------|--|---|---|--|
| | | Existent | Globalistic | Towards sustainability |
| a | <i>The island carrying capacity</i> |  |  |  |
| b | <i>Local development planning</i> |  |  |  |
| c | <i>Local economy, self-employment</i> |  |  |  |
| d | <i>Social capital, heritage, environment</i> |  |  |  |

This cumulative table presents 3 basic scenarios that try to encompass the 4 Main Development Areas. The nature of the shown trends is qualitative, based on the research findings. It should be noted, however, that the measurable development indicators should be defined in the future in order to secure a better and more precise planning.

Results

- For the first time an analysis of the local conditions was made in cooperation with the local community, regarding the problems and resources necessary for development, in order to determine the priorities and the areas of development
- A report "Directions for Sustainable Development of Jelsa Municipality" was produced as the basic planning document for the local government
- The assessment of the current situation in Jelsa Municipality includes a number of positive and negative aspects. The Main Development Areas logically follow from them. The table below presents the link between the main causes of problems with the promoters of development as well as with the main areas of development. Based on these areas, the overall design, priorities and possible activities will be envisaged

- Regional and expert institutions in charge of planning incorporated the findings into their activities
- The project's results will be used for educating other communities' local authorities.

Table 2.: Main causes of problems, promoters of development and main areas of development

| Main areas of development | Negative aspects (main causes) | Positive aspects (resources and values-promoters of development) |
|--|--|---|
| <i>The island carrying capacity</i> | The island urbanization has most probably reached its maximum capacity. | Existing tourist accommodation and road infrastructure is enough for tourism development in environmentally sound manner. |
| <i>Local development planning</i> | The system of planning, cooperating, deliberating and negotiating does not exist. Improvisation and lack of transparency dominate in governance. | The need for defining mutual interests of local authorities on the island or region and the need for public participation are being recognized. |
| <i>Local economy, self-employment</i> | Tourism as dominant activity is not integrated with other businesses. Transition economy failed to provide mechanisms for developing entrepreneurialism or for marketing existing domestic products. | Potential for family business, crafts, agriculture, tourism, development of new products and services. |
| <i>Social capital, heritage, environment</i> | Local population growth is negative. On the other hand, tourist pressure increases, jeopardizing local quality of life. | Heritage (nature, autochthony, tradition and rich history, architecture, antiquities and archaeology). Preservation of social networks through participation of youth in local development. |

Lessons learned

Most of the foreign financial assistance fails in the attempts to provide the change for development, the reason being that they use their own concepts and approaches, along with the expertise inefficient in a community's *unique* surroundings. Learning how to launch a systematic

approach in a community's sustainable development planning is a long and arduous process that has to rely *completely* on local resources.

1. Foreign and domestic donors should invest in *local level know-how* (1 EU or US expert costs as much as 5 to 10 local ones)
2. Local community and government should recognize their *responsibility* in enabling quality environment for the future generations
3. Regional government should be responsible for *bridging the tasks* expected by ministries and/or local governments
4. Local resources (public, private, individual) should *unite* around common interests especially building human potentials (youth, the unemployed) for sustainable business, social capital improvements and good governance.

Financing

Quality planning requires continual improvement. The first cycle was completed and further activities will depend on the commitment and wisdom of the municipality leaders. This includes different opportunities for fundraising that are available.

Therefore, the local self-government should define the direction of its development as soon as possible to be prepared to join positive trends in the country and abroad and to secure sustainability.

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Case study 3. Integrated municipal waste management in Ramnicu Valcea

This case study is provided by the Ramnicu Valcea Town Hall.

Location

Ramnicu Valcea, the capital of the Valcea county (south-central Romania), is a town of 125.000 inhabitants. It is situated at an altitude of 440 m on the right bank of the Olt river.

The main industries of Ramnicu Valcea are: chemical industry, processing industry, thermal energy and electricity production. Lately, Ramnicu Valcea has tried to acquire a new identity by developing tourism activities, taking into account the special natural potential of the area.

Who participated?

The German Agency for Technical Cooperation (GTZ), based on the Technical Cooperation Agreement concluded between the Romanian Government and the German Government has been carrying out a non-reimbursing assistance programme in Ramnicu Valcea in the field of urban waste management, since 1997.

The consultants of the German Company PPI (Project Partners International) and the sanitation company of Goettingen provided technical assistance.

In addition, German consultants and 10 students of the Ecological University of Bucharest assisted in determining the composition of waste.

The Ramnicu Valcea Town Hall, the public local authority, was responsible for: improving the waste collection and transport system, determining waste composition, introducing the selective collection of organic waste, building up a pilot composting plant, drawing up investment projects, carrying out intensive information campaigns to raise citizens awareness of environmental issues. The municipality also had an important role in synchronizing the activities of the local actors involved in municipal waste management (households, private sanitation companies, environmental protection inspectorate, health inspectorate, small economic agents, etc.).

Description

The waste management system in Ramnicu Valcea was inadequate, resulting in higher loading periods, lower productivity for the sanitation

company, its non-esthetical aspect and a health hazard for the population and the environment. The waste disposal in the landfill was not controlled, causing environmental pollution while the citizens' awareness of the waste management issues was extremely limited. The purpose of this project is the implementation of a new system of waste anagement in order to improve the city's sanitary and esthetical conditions, to protect the population's health and the environment, and implicitly, to bring the local administration in line with the European standards. The project began in 1997 and is ongoing.

Objectives

The main goal of this project is to promote a national strategy on urban waste management and to implement a waste management system in Ramnicu Valcea according to the European standards.

The municipality, together with the German consultants, set the following objectives:

- Developing a waste-management strategy
- Improving the collection and transport system of urban waste
- Reorganizing the waste-disposal system
- Reducing the amount of waste deposited currently in the landfill through the selective collection and composting
- Drawing up projects to obtain funding for an ecological landfill, a compost plant and shutting down of the actual landfill
- Monitoring all information regarding the waste-management system
- Raising population awareness on waste-management to the level of the European standards.

Implementation

The project has four main components.

The first component was the *introduction and improvement of the municipal solid waste-collection program for the town* by means of the donation of 5.000 bins and three compacting trucks from German government. The Town Hall organized meetings with the owners' associations in order to explain the bin locations and their importance so that the city collection sites be re-disposed and hygienized.

The second component and probably the most important was the *determination of the waste composition* to enable future informed decisions about the Integrated Waste Management Strategy for

Ramnicu Valcea. This action was supported by the German consultants and 10 students of the Ecological University of Bucharest, in four sessions (June 2000, October and February 2001 and May 2002). The analysis showed that more than 55% of the domestic waste is vegetable.

In accordance with the results of the waste-composition analysis, and beginning with November 2001, Ramnicu Valcea switched to the *selective collection of the vegetal waste* out of the inert waste.

This action also enjoyed the support of Germany: 4.000 recipients (bin type), with a capacity of 7 l for 4.000 apartments were deposited in the pilot area, as well as the machinery necessary to run a pilot station for composting (branch cutting machine, loader and mechanical sieve to sift the composted material). In November 2001, the municipality delivered 1.260 bins in the pilot area, accompanied with the informational materials with a view of raising the population's awareness.

The pilot project duly started, and so far more than 500 tons of compost have been created from the collected organic waste. The plan envisages a city-wide expansion of the programme.

The third component was the opening of the national *Information Center for Waste Management*, to raise the citizen awareness and educate and train the sanitation companies and public officials.

Related to this is the fourth component of the project: the development of the *Integrated Waste Management Manual*. In the next two years this manual will be used as a basis for training all interested public and private sectors in the Integrated Waste Management principles and the implementation of such programs all over Romania.

In order to go on with the implementation of the communitarian acquis in Ramnicu Valcea, regarding the waste disposal manner, the waste amount reduction through various treating and minimizing methods, the municipal authorities promoted an educational campaign in the field of environmental protection, both at the general population and the school establishment levels. Thus they published and distributed various materials, such as folders, posters, leaflets, booklets.

Results/achievements

- The waste-loading period was reduced from 15-20 min/m³ to 3-4 min/m³ and the risk elements for the population health and the environment decreased.

- Communication was improved between citizens, public administration, other local authorities and all stakeholders at local and national level, through the opening of the first Information Center in the field of Waste Management in Romania.
- The feasibility study regarding the Integrated Municipal Waste Management in Ramnicu Valcea was drawn up and submitted to the European Union; thus the ISPA financing was obtained.
- The current landfill was rearranged and a new technology was applied to control the disposal of waste and the first pilot plant for composting organic waste was built.
- The waste deposited was reduced through the introduction of the selective collection of organic waste in the pilot area initially comprising 1260 households.
- A web site was created, containing the data on waste management, the results obtained within the project framework, the analysis guidelines for determining the waste composition, the relevant legislation.
- Intensive information campaigns were carried out in order to raise people's awareness of the waste management issue, concomitantly with the introduction of ecology classes in schools.
- To date, 7 seminars were held and approximately 170 representatives of local authorities, public institutions and private waste companies were trained on the Municipal Solid Waste Management.
- The results obtained through this project prevailed in the decision to award the Diploma "City Towards EU Compliance Award" to the town for three consecutive years for its remarkable progress in the field of waste management, water and air quality, and the provision of access to environmental information.
- In 2002, the Dubai Municipality in the United Arab Emirates and the UN-HABITAT awarded Ramnicu Valcea Town Hall the Certificate of Best Practice for this project.
- At the Johannesburg Summit, the same project was declared (together with other 5 projects) Best Practice from Eastern and Central Europe in Urban Environmental Technologies.

Lessons learned

- In order to implement the project successfully, the municipality needed experience and coordination from professionals in this field. Thus, the consultants not only provided financial support but also technical assistance and guidance. They provided concrete examples from a city (Goettingen) of similar size, and of approximately the same structure of relief .
- Another important aspect of the success was the presentation of every stage of the project in the local mass media. Public debates and briefings were organized in order to involve the public in the decision-making process. Consequently, the citizens were more open and willing to cooperate in the project's implementation. Also, by presenting project on the Town Hall web site (www.primariavl.ro), the results obtained were made public so that other local authorities could benefit from the experience gained by Ramnicu Valcea.
- The creation of the initial conditions, the objectives, and determining the priorities according to technical and economic criteria, form an essential element for the success of this project. It is very important to create a database and to establish the performance indicators so that the level of project implementation can be assessed at any moment.
- The public-private partnership should be taken into account in the process of implementing the project. The municipality must involve all the stakeholders (sanitation service providers, Environmental Protection Inspectorate, Public Health Inspectorate, non-governmental organizations, schools and kindergartens, commercial companies, owners associations etc.) from the beginning of the project in order to ensure the correct application of the decisions made.

Financing

The local authority benefited from the financial support from GTZ (5000 bins, three compacting trucks, the equipment for the composting plant and the Info Center, training for the Municipal Solid Waste Management).

The ISPA financing, amounting US\$ 1,4 million, 75% of which represent non-reimbursable funds, was obtained for the following objectives: shutting down the current landfill, constructing a new ecological landfill and a composting plant and introducing a new collection system. 25% of

the investment will be provided from the local budget through an EBI loan that will be reimbursed using the sanitation tax.

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Case study 4. Wood waste utilisation for district heating

This case study is provided by the Romanian Agency for the Energy Conservation (ARCE).

Location

Town Campeni (Romania), with a population of 10.000, located nearby the Aries Forest Basin, at the feet of the Apuseni mountains in western Romania.

Who participated?

Partners in the project implementation were:

- Consultant: Romanian National Timber Institute
- PHARE Programme Coordinator: Romanian Ministry of Industry and Trade - General Direction for Programmes with International Organizations (financial part) and Romanian Agency for Energy Conservation (technical part)
- Co-worker: Romanian Ministry of Water, Forests and Environment Protection, General Direction for Monitoring and Ecological Control
- Designer and Supplier of Boilers: SC Terma Prod SRL from Romania
- Project beneficiaries: the district heating company GOTERM SA and Campeni Municipality Hall.

Description

Initial situation: Thermal power station no.1 equipped with four hot water boilers type PAL running on CLU (light fuel oil) and producing heat in amount of 2175 Gcal/year (8 h/day) and domestic hot water (2 h/day)

with the consumption of about 324 t CLU/year. Boiler efficiency: max. 70%.

Situation after modernization: Two boilers type PAL 15 made in Romania, running on sawdust with calorific power of 2.100 Kcal/kg.

The efficiency of the boilers measured after the test period is 83%, producing 4.087 Gcal/year, which is 88% higher than the old thermal power station operated in 1998. Moreover, the boilers are each provided with a spare burner on CLU being completely automated.

This project demonstrates the technical and economic advantages of wood-waste utilization as fuel for district heating. The project also has a large potential for replication in a large number of urban areas with woodworking industries and district heating systems: Nehoiu, Busteni, Vatra Dornei, Campulung, Moldovenesc, Abrud, Bicaz, Tg. Neamt, Gura Humorului, Campina, etc.

Objectives

- Utilisation of wood waste instead of fossil fuels for generating heat
- Reduction of environmental pollution (no dumping of this residue into the rivers)
- Reduction of costs for heat-generation.

Implementation

The beneficiary of this project is the town of Câmpeni, selected for the following reasons:

- high amount of wood residues from the Arieş Forest Basin - about 54.000 tons/year
- high cost of heat-production by light-fuel burning and the increased level of state subventions
- high pollution level of the Arieş River due to the dumping of wood residues and sawdust generated by the local wood-processing plants
- deep concern and cooperation of the local authorities e.g. the Câmpeni town council and the mayor's office of the county of Alba, as well as by the district heating companies GOTERM SA regarding the project implementation.

Based on the local wood-waste resources, the replacement of the two existing old boilers in the Thermal Plant with two modern boilers burning

sawdust, was chosen as an optimal solution. Boilers were designed and manufactured by Romanian companies.

This thermal power station has been provided with all the new systems suitable for wood-waste burning: unloading platform, silo, inclined belt conveyors, exhaust plant and automation.

The new boilers were put into operation in the winter of 1999.

Results

- Energy savings and reduction of fuel costs:

| Project features | Initial situation | After modernisation |
|--|-------------------|---------------------|
| Calorific power of fuel Hi [Kcal/kg] | CLU 9.600 | Sawdust 2.100 |
| Specific consumption -ecc/Gcal - | 0,204 | 0,172 |
| Heat generation -Gcal/an - | 2.175 | 4.087 |
| Cost of heat generation - Euro/Gcal - | 26,45 | 15,20 |
| Subvention - Euro/Gcal - | 18,0 | 3,1 |

- Reduction of environmental pollution
 - Utilisation of about 2.345 t wood waste/year
 - Reduction of CO₂ emissions released when burning fuel oil by some 1.000 t/year
 - Reduction of SO₂ emissions in the open by some 14,5 t/year
- Other advantages
 - The increase of available heat in the thermal station of about 88% represents an improvement in the population's welfare
 - A substantial reduction of subventions from the Local Council for covering the heat costs
 - The replacement of the fossil fuels (whose cost will increase in the future) by the cheap local fuel will benefit the poorer population
 - The reduction of pollution due to the dumping of wood residues into the rivers will increase the tourism potential and consequently boost the area's economic development
 - The use of the equipment designed and made in Romania will significantly reduce the investment costs.

Lessons learned

- It is possible to successfully transform one existing installation fueled by liquid fuel into a biomass-fueled installation
- A strong cooperation between local authority, national / governmental agency, equipment providers and consultancy companies is of special importance for the project's success
- It is possible to reduce subventions for thermal energy.

Financing

The total cost of the project was about 120.000 euro: 100.000 was provided by the EURO PHARE funds and about 20.000 euro by the local funds.

The funding by PHARE grant is aimed at the implementation of a priority project within the strategy of utilization of renewable energy resources drawn up by experts from Romania and the EU and specially the biomass utilization for district heating.

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Case study 5. Cross border municipal environmental cooperation: The Drina River Basin

This case study is prepared by the Regional Environmental Centre for Central and Eastern Europe, Country Office Serbia and Montenegro.

Location

Drina River Basin, Lake Peručac - territory of the municipalities of Bajina Bašta (Serbia and Montenegro) and Srebrenica (Bosnia and Herzegovina), Bajina Bašta, town in the Western Serbia on the right bank of the river Drina. Area of the municipality is 673 km².

The municipality of Srebrenica is situated in the eastern part of the Republic of Srpska. The municipal center is the town of Srebrenica. The eastern part of the municipality lies on the bank of the Drina River. The total area of the municipality is 533,4 km² and the existing population of the municipality of Srebrenica is estimated to around 8.000 inhabitants (new census is expected).

Who participated?

- The Regional Environmental Center for Central and Eastern Europe (REC), Norwegian Ministry of Foreign Affairs
- Municipalities of Bajina Bašta (Serbia and Montenegro) and Srebrenica (Bosnia and Herzegovina); Municipalities of Užice (Serbia and Montenegro), Višegrad (Bosnia and Herzegovina), Foča (Serbia and Montenegro), Zvornik (Bosnia and Herzegovina); other interested municipalities in the Drina River Basin - local authorities
- Hydro Power Plants Višegrad and Bajina Bašta; Public Utilities (local and national), National Park “Tara” - relevant institutions
- NGOs.

The first stakeholders' meeting, held in October 2003 in Bajina Bašta, gathered for the first time the interested parties from the two countries in an effort to develop a unified approach to the technical solution for cleaning Lake Peručac, but also to obtain the common perspective for cleaning the Drina River banks and to discuss the option for further cross-border cooperation in different areas (information exchange, educational and public-awareness raising campaigns, NGO cooperation, etc). The meeting was organized by REC.

Norwegian Ministry of Foreign Affairs financially supported the project.

The entire Drina River Basin used to be managed separately, without a joint cross-border approach.

Description

The purpose of the “Cross-Border Municipal Environmental Cooperation: the Drina River Basin” project is to identify, design, prepare, and solicit external financing for a solution to the problem of solid waste that flows from the River Drina into Lake Peručac.

Within the framework of the project, the information on waste-management practices in the municipalities located in the basin was gathered. This information allowed to define the problem of waste and to recommend possible solutions. Following these activities, the REC organized a stakeholder forum, which gathered all the relevant parties to discuss the problem of waste and present technical options to clean Lake Peručac. The conclusions from the stakeholder meeting formed the basis of an agreement for further action to solve the problem. The dialogue initiated between the stakeholders at this meeting was continued in two working groups established to further develop and

finalise the agreement. Those were the Institutional working group (representatives of the cross-border institutions relevant for the project implementation) and the NGO working group (the NGOs from Bosnia and Herzegovina and Serbia and Montenegro).

Based upon the initial consensus and the results of the work in groups, the REC was responsible for preparing a detailed work plan to implement a feasible solution to the problem. The feasibility study and action plan proposed at the II stakeholders' meeting held in April 2004 enabled the communities in the Drina River Basin to seek financing for the solution to the problem of waste.

The data collection was conducted in two phases. In the first phase the REC experts together with the external consultants interviewed the regional actors and distributed the questionnaire to the municipal centers regarding the information on waste management, institutional background, previous activities, etc. In the second phase, the feasibility study was developed, jointly between the REC and the two working groups.

II stakeholders' meeting gathered both working groups. The technical solution for the problem (procurement of the water-cleaner vessel and the waste compactor) was discussed, which will be managed by the "Tara" National Park and the Public Utility from Bajina Bašta; also discussed were the supportive activities aimed at providing the sustainable effects of the project implementation (the cross-border NGO activity, the formation of the "Drina River Board" - a joint body that would monitor the implementation of the technical solution and prepare the activity plan for a broader stakeholders involvement).

Objectives

- Establishing consensus of all interested parties in the region of the River Drina and Lake Peručac on the proposed technical solutions for the prevention of further pollution by solid waste
- Organizing forums for all interested groups with the aim of elaborating the proposed solutions and expressing opinion
- Developing a cross-border agreement on supporting the chosen solution between the key interested groups regarding the project
- Development of a Feasibility Study which will be submitted for future donor financing.

Implementation

The overall activity plan for the project implementation was divided into three phases, following the project objectives:

1. Inception phase

Establishment of the cross-border contacts, after almost ten years of atrocities and disputes in the region, was in the focus of the project implementation team. Also, an expert team was conducting field visits and analysed the questionnaires. A pre-feasibility study was developed.

2. Identification of feasible solutions for cleaning Lake Peručac with supportive activities. Documents developed at this stage are the Feasibility Study for cleaning Lake Peručac and the conclusions of the two working groups. The next step is providing the equipment, as suggested in the feasibility study and approved by the stakeholders (water-cleaner vessel and waste compactor).

3. Supportive activities, establishment of the Drina River Board (this phase should follow the provision of the technical equipment).

Results

- The project brought together the stakeholders from the Drina River Basin for the first time in almost ten year to discuss a joint approach for solving environmental problems in the basin
- Cross-border environmental cooperation was established (institutions and NGOs)
- Inter-municipal agreement was developed between the municipalities of Srebrenica and Bajina Bašta, addressing various issues
- Selection of the best technical solution for cleaning Lake Peručac; it was agreed upon and approved by the stakeholders from both countries
- Stakeholders identified possible actions for the sustainable cooperation in the region, including a cross-border body (the Drina River Board), to provide assistance to target-oriented stakeholders groups (organic farming, eco tourism, cross-border waste management, etc.).

Lessons learned

- There is a will for joint actions in solving environmental problems at the cross-border level

- The institutional and other cooperation in the region is poor due to insufficient regulations and legal framework, but also because of insufficient capacities within the institutions and organizations at the local level.
- The environmental problems in the Drina River Basin could not be solved partially.
- The scope of activities should include capacity building and support to various groups of stakeholders (applying best practices, sharing experience)

Financing

The project was supported by the Norwegian Ministry of Foreign Affairs and implemented by the REC. The total budget amounted to 58.770 Euro.

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Case study 6. Eurasian Griffon protection

This case study is prepared by the Eco-centre "Caput Insulae"- Beli.

Location

The islands of Cres (specifically the ornithological reserves Kruna and Podokladi), Krk, Prvić and Plavnik (Croatia).

Who participated?

The eco-centre "Caput Insulae"- Beli in partnership with the Ornithological Institute and the local community of Cres.

Description

The Eurasian griffon colonies on the islands of Cres and Krk had about 25 pairs of the griffon vulture each. The locals did not know much about the value of these birds, and their sensitivity towards wider ecological

problems, which had a huge impact on griffons' life, was nonexistent. This fact caused massive poisoning of the birds, especially on the island of Krk. The local farmers had had some problems with bears and wild dogs which they tried to solve with illegal poisoning. There was also some legal poisoning going on by chemicals without the adequate precaution, causing the poisoning of water sources for other animals. This resulted in a critical situation on the island of Krk. Today, the colonies on the island of Krk have 3 couples and on the island of Cres 70 couples, due to a more active protection. The situation on the island of Cres is a result of many years of cooperation with the local community, which has made the people more environment-conscious. The relationship with the local community of Cres was also established, which allowed getting all the necessary information about the Eurasian griffons when imminently threatened (i.e. in case a young bird falls into the sea and needs to be rescued, the locals will do it on their own and bring it to the sanctuary or they will call the Eco-Centre for assistance). They also collaborate by bringing their dead animals (sheep) as food for the griffons. The marking of the young chicks has commenced, which enabled scientists to objectively assess the number of vultures. Each marked bird was consequently tracked, and the data about their movements around Europe collected; also, the number of these birds nesting could be established with precision. From those numbers the mortality rate can be deduced and the average rate of the increase of their colonies. The research data have been designed by the Ornithological Institute, and collected by the volunteers organised through the Volunteer Programme of the Eco-centre Caput Insulae - Beli.

Objectives

- to have completely self-sustainable colonies, with less human involvement each year
- to stop the poisoning
- to protect the marine area of the Ornithological reserves
- to spread the colonies over the areas where they used to live
- to have local people completely aware and involved in the protection of endangered species and their own environment.

Implementation

- marking the griffon vulture chicks
- building the bird sanctuary and quarantines

- building the feeding areas and monitoring sites
- regular monitoring and data base updating
- entering the network of the similar projects and exchanging the information
- protection of the sea areas of the griffon vulture colonies
- workshops and projects with the local community about different topics (i.e. use of pesticides, promoting traditional farming connected with eco-tourism, etc.).

Results

- increase of the number of griffon vulture in the colonies from 25 to 70 couples on the island of Cres
- two feeding areas built
- bird sanctuary and quarantine built and completely operational
- joined the network of all the projects on the protection of vultures in Europe
- local people made aware and proud of the value of the Eurasian griffons' colony on their island.

Lessons learned

A complex programme of endangered species protection is not possible without the involvement of scientists, volunteers and the local people. The only possible way is to develop a programme with a holistic approach where the scientists and environmental protection NGO work together with the local community towards protecting not only an endangered species, but also the whole locality where this species lives together with people and their way of life in sustainability with nature, which is conducive to their welfare.

Financing

General sponsors of the Eurasian Griffon's project:

- Fima, Varaždin (1998), Croatian Institute for Physical Planning, Zagreb (1999-2000)
- Primorsko-goranska County, Budapest Zoo, Pliva and Agrocor financed the first feeding site
- Open society (Soros), Regional Environmental Centre (REC) and Croatian Television sponsored the building of the first sanctuary

- Croatian Ministry of Environmental Protection financed the building of the second sanctuary
- private donations of the visitors to the interpretation centre in the building of the NGO Eco-centre Caput Insulae - Beli
- private donations through the special programme of virtual adoption of the Eurasian Griffon

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Case study 7. Theatre Encounters “Actors in Zagvozd” - the Friends of the Environment event

This case study has been prepared by the Actors in Zagvozd cultural association.

Location

Zagvozd municipality, the Imotski Border.

Who participated

The cultural association of Actors in Zagvozd, the Zagvozd Town Council, the local community of the municipality of Zagvozd, painter and graphic designer Vedran Karadža, local people.

Description

This year the seventh *Theatre Encounters in Zagvozd* took place.

Since its inception, this cultural event has been quite successful. It has only confirmed a need for such a cultural content in rural areas: it has also been exceptionally well received by the population of Zagvozd and their visitors, as the beneficiaries of the project, but also by the general public and the cultural establishment.

Since the programme is carried out in a rural region, with specific spatial and environmental characteristics, a need was felt to advance the basic project in a way that a synergy should be established with other fields (e.g. environmental protection and sustainable development), with a

goal of presenting to the local community and the general public - along with the cultural content - the developmental potentials of this region.

The developmental potentials of this region are the preserved environment, special natural resources and scenery, part of which belongs to the territory of the Biokovo Natural Reserve, i.e. a locality under legal protection. The non-protected area is also an area of unique regional features, traditional architecture, ethnographic heritage.

Unfortunately, we are witnesses that in this region, as well as in the entire Croatia, there is no sufficient awareness of the value of the traditional scenery or heritage, consisting of the scenery and environment, architecture and bio-diversity as a whole.

Therefore, the goal of this project's implementation is to link the cultural event with the environmental protection and sustainable development as well as to find new ways of educating and informing people about both fields.

By organizing a cultural event in a way that together with some cultural content the local environmental values and scenery are also presented, the wish is to sensitize primarily the local community and then also the general public to accepting new values. *In the context of this project this means inducing a responsible attitude towards the environment and the native region.*

Goals

Short-term goals:

- Raising awareness for a need for a responsible attitude towards the environment and the proper waste disposal
- Developing in the local population a positive attitude to the values of the native region and encouraging environmental protection and concern.

Long-term goals:

- Culturally sustainable development of villages with environmental protection as one of its basic assumptions
- Stimulating the cultural development of the local community through the acceptance of good-quality cultural contents, recognition and respect of the local traditional and natural heritage.

Implementation

1. Organizing a regional cultural event in a rural area along with the incorporation and presentation of the natural and cultural heritage of the whole municipality
2. Designing advertising materials of the events, the purpose of which - apart from promoting theatre encounters as a cultural content - will also be presenting the local resources of biological and environmental diversity
3. Organizing a local work drive of clearing the dumping grounds. The Zagvozd municipality secured the waste transport, 20-30 volunteers actively participated with occasional assistance of the local population
4. From the waste collected at the illegal dumping grounds an eco-installation is formed (in 2004 the installation was made by Vedran Karadža, a painter and graphic designer), which is then exhibited on the main square in Zagvozd during the cultural event
5. When the event finishes and is officially closed, the eco-installation is "publicly" removed, i.e. driven away and disposed of at the nearby waste dump
6. The campaign of clearing illegal dumping grounds, the creation of a new art installation and the disposal of the eco-installation at the dumping ground is "public" and the media are therefore invited to cover these events.

Results

- The public is better sensitised to environmental issues
- Clearing the nature of ca. ten tons of waste
- Enhanced responsibility of local population for massive waste and illegal waste areas
- Enhanced responsibility of the general public for the creation of illegal waste dumps
- The general public is better sensitised to cultural contents
- Promotion of sustainable development initiatives.

Lessons learned

The way in which synergy was achieved between the two fields (culture and environmental protection) proved to be a good way of promoting cultural and natural or environmental values.

Financing

- Ministry of Culture
- The County of Split and Dalmatia
- Zagvozd Municipality
- Numerous companies and public corporations
- Ministry of Environment, Physical Planning and Construction provided 40.000 kn for environmental campaigns.

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Appendix

The Phare programme, ISPA and SAPARD are three pre-accession instruments financed by the European Union to assist the applicant countries of Central and Eastern Europe in their preparations for joining the European Union

ISPA stands for *Instrument for Structural Policies for Pre-Accession* and finances environment and transport projects

SAPARD stands for *Special Accession Programme for Agriculture and Rural Development*

Phare stands for *Pologne, Hongrie Assistance a la Reconstruction Economique* and was established in 1989 to support the transition of Poland and Hungary to market economies and was later extended to include Albania, Bosnia Herzegovina, Bulgaria, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Latvia, Lithuania, Romania, Slovakia and Slovenia, to provide assistance for community infrastructure in the areas of transport and environment.