

## ITALY

Restructuring and  
developing physical  
potential and promoting  
innovation

Cooperation on a pilot project that could provide a more viable and sustainable alternative to manage river banks.

### Summary

Management of water courses in many rural areas in Italy has become more and more an issue. In the past usually farmers were undertaking the maintenance of river banks. Currently, the legislation to authorize these works has become more complicated and represented an obstacle to farmers' activities.

These considerations brought a group of actors in the area around the Musone river, between Ancona and Macerata in the Marche region, to cooperate to implement a pilot project that could provide a more viable and sustainable alternative to manage river banks.



Before the project



After the project

#### Location

Marche region

#### Programming period

2007 – 2013

#### Axis / Priority

Axis 1 - Competitiveness

#### Measure

M124 - Cooperation for development of new products, processes and technologies

#### Funding (EUR)

Total budget 267 457

EAFRD 114 779

National/regional 114 819

Private 35 859

#### Project duration

2014 – 2015

#### Project promoter

ASSAM Regional Agency for the agri-business sector (lead partner)

#### Contact

[massisavoretti@gmail.com](mailto:massisavoretti@gmail.com)

### Results

Preparation of the detailed action plan;

Carry out four studies to evaluate the viability and environmental sustainability of the project;

Works along the river bank: creation of trails; woods cut using appropriate equipment; cleaning the river bed; afforestation of certain areas; etc.

Creation of a storage for residues.

### Lessons & Recommendations

- ❑ It is important to consider carefully local conditions before deciding about specific activities to be undertaken.
- ❑ The implementation of such approach ensure to preserve the ecosystem, to protect biodiversity and particularly to save money.
- ❑ Bureaucratic issues can absorb a lot of time and slow down the implementation of such projects. Particularly, obtaining different permits from different authorities it is highly time-consuming.
- ❑ Such an integrated approach works if there is agreement among all partners involved about the activities to be implemented. Investing some time and, to a certain extent, some money on coordination and cooperation is considered crucial to the success of the project.

## Context

Management of water courses in many rural areas in Italy has become more and more an issue. During the '60s and '70s, farmers whose holding bordered or were crossed by water courses were usually undertaking the maintenance of river banks. This preserved from soil erosion, reduced floods caused by the presence of woods and other obstacles to the water flow, contributed to preserve both vegetal and animal biodiversity. Furthermore, woods collected with these works were used for heating houses.

During the past 20 to 30 years the requirements needed by the legislation to authorize these works has become more complicated and represented an obstacle to farmers' activities. Local authorities, usually provinces and municipalities, started being in charge of these activities. However, works were often done with approaches considered too invasive, using earthmoving machines with negative consequences on the stand, high costs and high production of waste to be disposed of. These interventions were often responsible for the radical modification of the plant cover typical of river beds.

Furthermore, in the past decade, the urgent need to save public money and the continuous cuts of local authorities' budget resulted in the abandon of most of the public waterways domains, particularly when small to medium rivers were concerned. Frequent floods that happen nowadays in rural areas, and not only, are caused also by a poor management of water courses, other than to incontrovertible changes on climate conditions. This obliges the authorities to intervene after that serious damages already occurred, with even higher costs than those needed to maintain rivers in healthy conditions.

These considerations brought a group of actors in the area around the Musone river, between Ancona and Macerata in the Marche region, to cooperate to implement a pilot project that could provide a more viable and sustainable alternative to manage river banks.

## Objectives

Actors involved in planning and then implementing the projects were multiple, due to the complex nature of the objectives pursued. In particular, promoting cooperation between different actors was considered important to make the project happening. For this reason, it was decided to apply for funding under M124. The lead partner was the Regional Agency for the agri-business sector – ASSAM (Agenzia Servizi al Settore Agro-alimentare delle Marche); other partners were local agricultural holdings and cooperatives and four different

universities – University of Bologna, University of Siena, University of Technology of the Marche region and University of Camerino.

Main objectives of the projects were to:

- Prevent overbank flooding and soil erosion, by facilitating water run-off, particularly after intense rain and rainstorms.
- Avoid that huge quantities of biomass are carried by water flow to the river mouth.
- Ensure the ecological and protective role of plants and bushes typical of the river banks and bed, through new plating of indigenous varieties, if needed. This vegetal species represent a both a protection to the soil erosion and help preserving also animal biodiversity.
- Set the stage for establishing a wood-based supply chain for production of energy, based on the biomass resulting from the maintenance works, creating new sources of income for farmers involved and reducing, as a consequence, the cost of these activities.

## Activities

Some preliminary research and analysis was done before the effective start of the project, to identify the best area along the river where to implement this integrated approach to watercourses and their surroundings. Four main blocks of activities were implemented, namely:

1. Research and preliminary studies to better plan the works along the river, based on the evaluation of the effects different types of activities can have on the river ecosystem.
2. Management of works in selected areas along the river.
3. Organisation and management of the activities related to the use of forest residues for energy production.
4. Dissemination of results.

A number of additional actions, complementary to these three blocks of activities, were implemented, in relation to bureaucratic requirements, internal communication between partners and coordination of activities. The initial tasks, mainly undertaken by the lead partner, envisaged the request of authorizations to different regional, provincial and local authorities.

### **Research and preliminary studies**

These activities were carried out by the Universities involved in the project.

- The University of Camerino, department of phytogeography, analysed the biota of the area identified, to better plan wood cuts and possible other actions of restoration of the area, including the definition of the best varieties to be planted when needed. The river is a complex system and often in the past actions were done without careful considerations of all elements, due usually to the urgency related to natural events. The University carried out a comprehensive environmental analysis of the area, defining the best intervention options.
- The University of Siena (Department of physical, earth and environment sciences) carried out an evaluation of the impacts that the planned actions could have on the hydraulic efficiency of the river and on its ecosystem.
- The University of the Marche region (Lab of biomass) was in charge of the analysis on the biomass collected during the work, in particular defining its characteristics, its emissions when burning as well as the environmental sustainability and viability of its use for producing energy.
- The university of Bologna, Department of agricultural economy, was in charge to analyse the viability of the integrated approach as well as its possible spill-over effects. Costs-benefits analysis, profitability, viability of specific investments planned, economic relevance for rural area.

### **Management of works in the selected area along the river**

These activities were carried out by the agricultural holding of Mr. Savoretti and by the Cooperative Undicesimaora. Specific equipment was purchased and four people trained for the works. The activities entailed: creation of paths along the river banks to better access the work area; wood cuts, collecting and transporting residues to the storage area. After the cleaning activities, the two beneficiaries started with the planting activities, where needed, using the local varieties selected in the previous phase by the study carried out by the University of Camerino.

### **Organisation and management of the activities related to the use of forest residues for energy production**

The results of the study carried out in relation to the use of forest residues for producing energy highlighted the

environmental and economic sustainability of this type of activity, both in terms of additional sources of income for farmers and in terms of benefits for the community. The preparation of a storage area was planned, where woods and other residues could be stored. A storage area was prepared, woods and other residues were stored according to their future use, namely fire-woods, to be sold, industrial timber, woods to produce woods pellets.

### **Dissemination activities**

A number of activities such as the preparation of articles and the organisation of events was planned. The scope was not only to disseminate the results to the broader public but also to show the opportunities that such an approach could offer to farmers.

## **Main results**

Main results of the project were:

- Identification of the area of intervention along the river;
- creation of the temporary joint venture among partners in the project;
- preparation of the detailed action plan;
- four studies to evaluate the viability and environmental sustainability of the project; to identify the best methods for cleaning the area and the more appropriate species for afforestation, when needed; to evaluate the best use of residues (firewoods, wood-pellets, industrial timber, etc.) and set the basis for energy production.
- Works along the river bank: creation of different trails to facilitate the access to the bank; woods cut done using the most appropriate equipment; cleaning the river bed; afforestation of certain areas. The restored river bank preserve the surroundings areas from floods but represents also an important area where animal biodiversity can be preserved.



Before the project



After the project

- Creation of a storage for residues and their classification, based on their possible use.
- A final seminar to inform about the results of the project was held in September 2015. The results of the project were published also in the websites of the universities that participated to the project, as well as in the website of the lead partner (ASSAM) and in the website of the cooperative Undicesimaora. Some articles were also published in local newspapers.

The main scope of the project, being it a pilot project, was to collect information about the real possibility to implement a similar approach. Information collected and the positive results of the activities implemented showed that such approach can be implemented. For this reason, some of the beneficiaries are still working together to launch on a regular basis the production of energy from forest residues.

### Key lessons

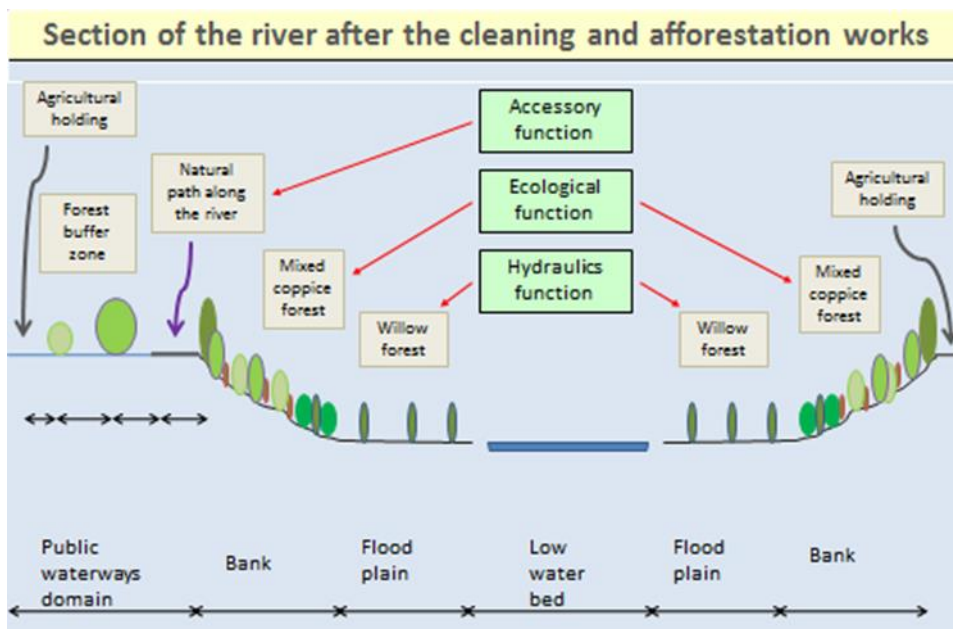
The example can be transferred in any other area, being based on an integrated management approach. However, it is important to consider carefully local conditions before deciding about specific activities to be undertaken. The

studies carried out by the Universities represented an important step to plan the most appropriate activities to restore the river banks and also to decide upon the best species to be used for afforestation.

The implementation of such approach ensure to preserve the ecosystem, to protect biodiversity and particularly to save money. In fact, to restore agricultural potential after natural disasters have occurred it is more expensive than planning and implementing actions that can prevent these damages.

Two additional issues should also considered carefully when planning a similar project:

- Bureaucratic issues can absorb a lot of time and slow down the implementation of the project. Particularly, obtaining different permits from different authorities it is highly time-consuming.
- Coordination and cooperation among partners is also an important issues. Such an integrated approach works if there is agreement among all partners involved about the activities to be implemented. Investing some time and, to a certain extent, some money on coordination and cooperation is considered crucial to the success of the project.



### Additional sources of information

<http://www.assam.marche.it/progetti5/fiumi-e-biomasse>