



PROGECO - Ecological Engineering as a means to protect Mediterranean environment

Erosion, landslides and flooding, ensuing from the heavy rainfall that occurs in the Mediterranean countries every year, cause enormous damage to the environment. The INTERREG IIIB project PROGECO (Protection du territoire par le biais du génie écologique à l'échelle du bassin versant) has introduced a new approach in the participating countries, based on techniques that not only protect the environment, but also help reduce financial loss for the local populations affected. PROGECO has received EU funding from the INTERREG IIIB Western Mediterranean Programme. The project has proved to be of both local and national significance.

Flourishing cultivations and vegetation climbing down steep slopes is the picture many people have of the environment and vegetation of the Mediterranean region. But the cultural and ecological environment around the Mediterranean also has big problems with landslides, flooding and soil erosion, recurring year after year primarily during the rainy periods in the autumn and winter months.

As the key motivation underlying the PROGECO project, it was discovered that those techniques used to tackle natural disasters in other countries, and commonly referred to as Soil Bioengineering, were practically not used in most Mediterranean countries.

”We started the project by thoroughly researching the techniques best suitable to the Mediterranean environment: we decided to refer to them as Ecological Engineering, thus intending to stress their complex environmental implications”, says Maria Antonietta Dessena, project leader for PROGECO.

The techniques that Maria Antonietta Dessena describes are aimed at restoring the local environment’s natural condition by using the vegetation against phenomena such as erosion and landslides. A GIS-aided analysis of various factors in the environment and surroundings, with special emphasis on the river basin scale, also makes it

possible to predict where the risk of, for instance, landslides is greatest.

The techniques used involve both planting plants and re-shaping slopes and banks. This prevents erosion, since the plants can stop heavy rain from dragging away the soil. Use is primarily made of natural and, especially, living materials, for instance by installing structures made of logs and planting trees and other plants. But artificial materials are sometimes also used, such as metal cables and concrete blocks.



Trial of Ecological Engineering techniques in three Mediterranean areas

During the project, PROGECO will try out the new techniques in three different Mediterranean areas: Sardinia, Eastern Macedonia (Greece) and the Algarve region in Portugal. These three selected areas have all had problems caused by heavy rainfall and subsequent flooding and accelerated erosion.

”We finished field work in Sardinia in September, well in advance of the next rainy period”, says Maria Antonietta Dessena. ”The other two areas are slightly behind schedule at present, but we still hope to complete the work within schedule”, she continues.

The trials are being studied by national experts who will publish the results locally in the three trial areas and nationally in the three participating countries.

PROGECO started in May 2004 and will be completed in June 2006. Seven people on average for each team are working on the project, most of them geologists, environmental engineers, meteorologists and ecologists. The project has six partners around the Mediterranean: the Ente Autonomo del Flumendosa (EAF), the Istituto Nazionale della Montagna (IMONT) and the Region of Umbria in Italy, the Instituto Superior Técnico (IST-CEHIDRO) and the Comissão de Coordenação e Desenvolvimento Regional do Algarve (CCDR-A) in Portugal, the University of Thessaly in Greece and, as observer, the Institut National de Recherches en Génie Rural, Eaux et Forêts (INRGREF) in Tunisia.

Although the project is dispersed between several countries, the collaboration between these countries

works very well. The participants travel through the countries together presenting the project and participating in various seminars. The project members maintain ongoing contact to monitor the progress of the activities in the three trial areas. Several ministers and governors have also become involved in the project, since it is considered to be of major national importance in all the participating countries.

Local inhabitants – the key to success

PROGECO has also highlighted the importance of involving the local inhabitants in the affected areas. The information provided through the project is vital to the local population, but the inhabitants in areas at risk of natural disasters can also play a key role in preventative efforts. The project’s aim is to make inhabitants aware of the environmental implications of land management and farming practices at river basin scale, and to teach them how to use the Ecological Engineering techniques to prevent erosion, landslides and flooding, which cause enormous financial losses. To communicate the experience and knowledge resulting from the PROGECO project, a guideline manual will be produced that describes practical measures for reducing environmental disasters in Mediterranean contexts. Producing this manual is vital, since no specific manual currently covers these issues for all partner countries.

PROGECO will not wait until the project is over to disseminate the information. In 2005, Maria Antonietta Dessena presented the project and the use of the techniques at several meetings and seminars in the participating countries.

”We aim to provide these areas’ inhabitants with a manual on how to apply the techniques. It’s important to inform the inhabitants of the trials we are conducting and their results. We want to pass this knowledge on to the population”, concludes Maria Antonietta Dessena.

PROGECO

Lead Partner: REGIONE SARDEGNA - Ente Autonomo del Flumendosa, Italy

Partners: IMONT - Istituto Nazionale della Montagna - Ufficio Difesa del Suolo, Italy; Regione Umbria - Servizio « Programmi per l'Assetto del Territorio, Italy; IST - Instituto Superior Técnico – CEHIDRO, Portugal; CCDR A - Comissão de Coordenação e Desenvolvimento Regional do Algarve, Portugal; UTH - Université de Thessalia - Département de Planification et Développement Régional - Laboratoire de l' Environnement et de la Planification Spatiale, Greece; Institut National de Recherches en Génie Rural - Département d'écologie, Tunisia

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