Final Report ECOMED project

ECOMED

Soil and Water Bioengineering in the Mediterranean Ecoregion

Coordinator Organization: Escuela Técnica Superior de Ingenieros de Montes (UPM)

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1. Introduction

Landslides, erosion, and floods are natural processes, increase due human activities which can negatively affect the productivity of land and ecosystem's dynamics and increase soil loss and land degradation. The direct causes of these phenomena are region- specific. Climate change, including changes in short-term variation, as well as long-term gradual changes in temperature, precipitation and sea level rise, are expected to be an additional stress on rates of soil loss.

These techniques are widely used in Atlantic and Eurasian ecoregions and are gaining strength within the Mediterranean regions. Soil and water bioengineering techniques are also useful to protect natural riparian areas affected by rapid environmental changes.

The analysis of the soil and water bioengineering works evolution by studying the current state of existing soil and water bioengineering works is at the same time the major missing point in the Mediterranean scenarios, and the most important source of information for the needs of the professional specialization.

In order to improve the specialization level of the soil and water bioengineering sector in Mediterranean areas either an enhanced syllabus must be offered in HE centres or monitoring of the existing construction sites are needed. This is needed because there is no specialized training offered in soil and water bioengineering in most of the Mediterranean countries and there is a serious shortage of staff specialised in the technology enhanced restoration of degraded land in Spain, Greece, Portugal, Italy, Turkey and FYR of Macedonia.

Last December end the EEUU project ECOMED after three years of permanent activity, which is promoted by UPM (Universidad Politecnica de Madrid) in partnership with the following 13 partners, where we can find universities, private companies and research centers.

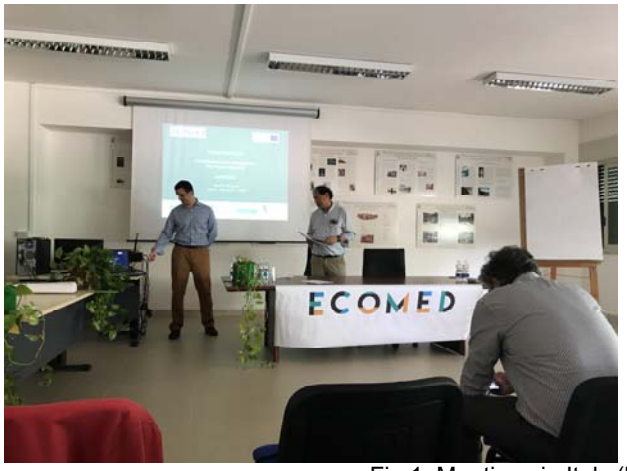
1. Instituto tecnico construzioni ambiente e territorio – Italy
2. Eastern Macedonia and Thrace institute of technology - Macedonia
3. University of Evora – Portugal
4. Istanbul university – Turkey
5. Glasgow Caledonian University – Great Britain
6. INRA Science and impact – France
7. JemmBuild – Italy
8. SCIA – Sangalli Coronel y Asociados – Spain
9. Eco Salix – Portugal
10. NATURALEA – Catalonia-Spain
11. Astrolabe – Greece
12. I.C.E-Ingenieur conseil en environnement – France
13. GEING – Krebs und Kiefer - Macedonia

2. Objectives

The aim of this project is to generate a sector-specific theoretical and practical syllabus essential for the specialization process of the Mediterranean soil and water bioengineering sector. In addition, to jointly develop a long-term interaction scheme among the stakeholders of the soil and water bioengineering sector and to deliver a training courses programme technology enhanced in “Soil and water bioengineering, Hazard Assessment and Techniques Selection in Mediterranean Environment”. This new syllabus will be generated during the implementation of the long-term strategy of the proposal “Specialisation process for the soil and water bioengineering sector in the Mediterranean environment (ECOMED)”.

3. Meetings and dissemination

Naturalea has participated in several meetings in Italy, Portugal, Greece, Scotland (GB) and other countries to have a precisely following of the project with the partners of the consortium. In these meetings, the main aid was to share the work done by each partner and fix the next steps of the project.



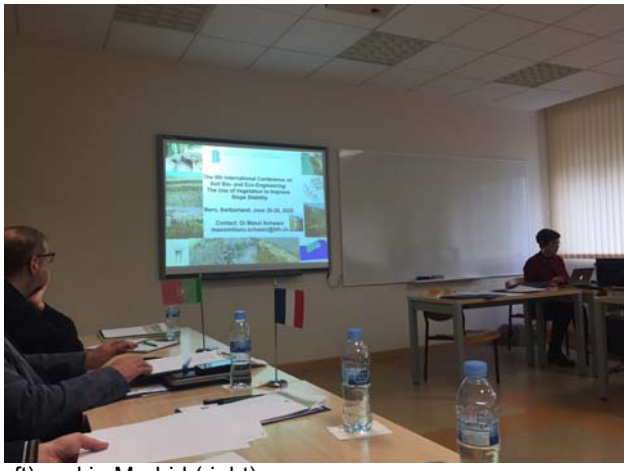


Fig 1: Meetings in Italy (left) and in Madrid (right)

Within the project, we made dissemination of the project in a local scale in the conferences and workshops that we contributed. Thus, we could provide information to the local people of how are we promoting the soil and water bioengineering in Europe and at the same time, we disseminated the project.

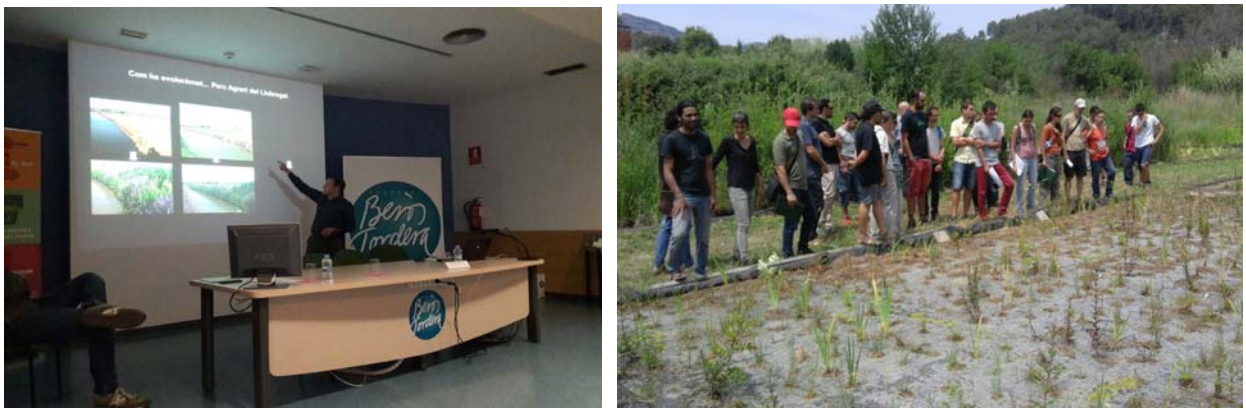


Fig 2: Conference and workshops making dissemination of ECOMED project

4. Contribution on the project

18 case studies related to slopes consolidations, fluvial and coastal areas in the Mediterranean region were exposed within the ECOMED project.

Naturalea has contribute on showing a case study in order to face problems of erosion, habitats and landscape degradation at the fluvial area of Tenes river in Santa Eulàlia de Ronçana (Barcelona), where soil and water bioengineering techniques were used to recover riparian ecosystem and renaturalize the environment.
This case study give a practical view of the implementation of soil and water bioengineering techniques in a fluvial area and it is a good example for new projects.

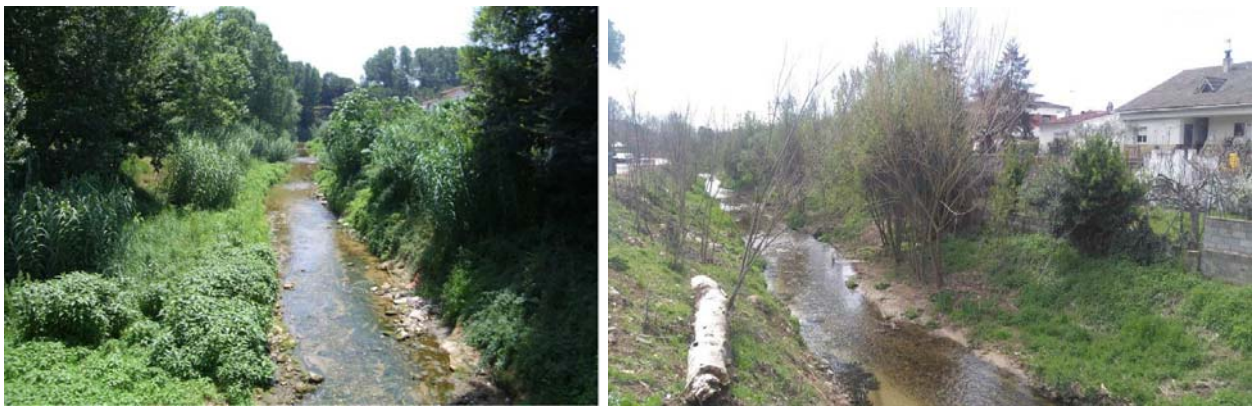


Fig 3: Initial and final situation of Tenes river downstream the municipality of Santa Eulàlia de Ronçana

Moreover, we collaborated in the report of evaluation of training, monitoring outcomes and existing routines adaptations needs to report the results of surveys to check the sector needs and update the skill needs on the Mediterranean ecoengineering sector.
This report was addressed to people, companies and institutions linked to the field of soil and water ecoengineering, as designers, private companies, people working in academic and research institutions, contractors and subcontractors …
The survey was conducted through five online questionnaires. The aim of each questionnaire was to better understand the current state, the future needs and changes to be undertaken by the soil and water bioengineering sector across a range of Mediterranean countries.

5. Conclusions

The soil and water bioengineering is becoming more and more popular in the business, administration and academic worlds, as demonstrated during the ECOMED project.
It is still necessary to disseminate the benefits and possibilities of soil and water bioengineering techniques, and for that, the evolution of the knowledge to training centers, research centers and professionals who design and implement solutions of the sector is a key point.
The combination of ECOMED and the existing professional associations represented by the European Federation of Soil Bioengineering (EFIB), offers very good synergies and possibilities to advance in that sense.

Fig 4: Final ECOMED congress in Madrid

More information available at www.ecomedbio.eu