

ENVIRONMENT (FP7-ENV-2012)

ENV.2013.6.3-2 ECO-INNOVATIVE DEMONSTRATION PROJECTS

Project title: POST-MINED POLLUTED LANDSCAPES RECLAMATION BY MEANS OF VALORIZATION OF DIFFERENT RESIDUES

Project objectives:

The main objective of this project is to evaluate, demonstrate and disseminate an alternative sustainable for the reclamation of mining sites using both methods amendment materials and phytostabilization. The project will achieve this objective by using waste materials generated from organic wastes and marble industry, which present alkaline and organic characteristics, respectively, to improve physical, chemical and biological conditions, which guarantee the development of microbial communities and plant colonization, essential to long term soil formation and evolution. With this, we will achieve the reestablishment of a stable ecological equilibrium that is coordinated with its surroundings in order to attain ecological holism.

In order to achieve the main objective of develop and implement methods for rehabilitation of the mining areas and valorization of industrial wastes, the detailed objectives can be summarized as follows:

1.1 To select two representative areas in two European Regions, with the similar risks (problems) and acidic characteristics. In addition, is necessary to select farmer and marble industry close to the tailing ponds from environmental and economics point of view.

1.2 To determine the physical and chemical properties of soil surface and amendment materials. We will know for the one hand the current conditions of soil surface to allow appraise the evolution of the parameters with time, and the other one determine the nitrogen and carbonates content to determine optimal application doses.

1.3 To apply amendment materials in the selected areas in order to reduce the mobility of heavy metals, build-up of soil organic matter and improve soil properties to establish plant cover. This way, we will design the optimal methodology for application and incorporation of those residues from an environmental and ecological point of view.

1.4 To use of species tolerant to extreme soil conditions and high content in heavy metals, for the restoration of degraded zones by mining activities. The phytostabilization will decrease the metals transportation by runoff, to reduce the potential leaching of metals, and to establish physical stability reducing erosion risks.

1.5 To evaluate the evolution of soil properties in amended mining areas.

1.6 To rehabilitate landscape based on ecological planning and design.

1.7 To disseminate and transfer the experience and knowledge generated at regional, national and European level by means of public information and manual technique adapted to different stakeholders.

Type of partners required:

- Local or Regional Administrations of EU Regions with problems related to the rehabilitation of acidic soils contaminated by heavy metals.
- Enterprises, mainly SMEs, from the metal ores extraction industry.
- Associations or Groupings of enterprises of the metal ores industry.
- Universities and R&D Centers competent in this investigation area.

Average project budget: 2.5 to 3 M €

Average duration of the project: 4 years