



GESTINMER - System for the integral management of the wastes produced by the mussel cultured in rafts and longlines

LIFE04 ENV/ES/000239

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Project description:

Background

The farming of cultured mussels is a vital activity in the western Spanish coastal areas. Galicia (the project location) produces around 290,000 tons of mussels per year (94% of Spanish production and 50% of world production) mainly using rafts – a farming method whereby the mussels are grown on ropes, attached to the rafts.

Mussels have a very high filtering capacity (e.g. a single adult mussel can filter a full litre of water per day). However, this filtered material includes contaminants (excreted as mussel faeces), which can result in considerable accumulation of bio-deposits beneath the mussel rafts.

These deposits gradually affect marine bed conditions and can result in ‘anoxia’ (a total decrease in the level of oxygen) and subsequent environmental risks such as a decrease in biodiversity, increased pollution and rising sea bed levels beneath the mussel rafts (by up to 2 cm per year).

When appropriately treated however, such wastes can be used to produce recycled materials for reforestation and the regeneration of degraded soils (e.g., in areas of high erosion, former industrial regions, or adversely affected by mining and construction).

Objectives

The GESTINMER project aimed to develop an integrated system for the environmental management of the wastes produced by raft-cultured mussels. The project anticipated to establish a system for extracting the sediments deposited under the mussel rafts and organise the selective sorting, collection and transportation of the wastes.

A system would also be developed to make use of the recycled wastes to restore degraded soils in areas around mines. The mussel producers would be involved at all stages of the project implementation in order to develop good working practices for waste management and for ecosystem preservation.

Results

Overall, the project's main objectives were met; (1) the project successfully identified a viable system, from both a technical and an economic point-of-view, for the management of the waste produced during mussel farming activities and (2) mussel waste was found to be a very efficient and useful way of reclaiming degraded mine soil and. Specifically, the waste material was found to be valuable as a 'liming' element (to correct soil activity) or fertilising product.

The main actions carried out by the project included the establishment of a management system for the (a) extraction of sediments; (b) selective collection of wastes produced during the working tasks; and (c) upgrading of sediments and wastes. Project highlights included: 1. Assessment of the viability of different techniques for the extraction of sediments accumulated under the mussels rafts. While dredging with a bucket using a 'silt curtain' was found to be the most effective, this method requires further improvements (such as to find ways of limiting further the water turbidity). 2. Tests were conducted and a suitable management system was established for the selective collection, transport and storage of the mussel waste and by-products. The temporary storage of mussel by-product waste on floating platforms – that can be located at the entrance to nearby ports – was favoured. 3. The suitability of the mussel waste for the restoration of degraded soils was demonstrated. The waste material was found to be valuable as a 'liming' element (to correct soil acidity) or fertilising product (e.g 30% of mussel waste added to soil was found to be the optimum ratio for growing herbaceous species such as rape seed), 4. A good practices manual on mussel by-product waste management – aimed at mussel producers - was produced. The publication is available on the project website. 5. A plan for the integrated management of the wastes generated by mussel farming was developed.

The project has contributed to raising awareness of the environmental impact caused by mussel production and demonstrated that its improved sustainable management is beneficial. Although training and dissemination activities were more limited than foreseen, the project has a strong demonstration and innovation value by seeking solutions for dealing with waste generated from mussel farming.

Further information on the project can be found in the project's layman report and After-LIFE Communication Plan (see "Read more" section).

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Environmental issues addressed:

Themes

Waste - Agricultural waste

Keywords

animal husbandry, waste recycling, manure, marine environment

Target EU Legislation

- Environmental management & assessment
- Regulation 761/2001 - Allowing voluntary participation by organisations in a Community eco-manage ...

Natura 2000 sites

Not applicable

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Beneficiaries:

Coordinator	CENTRO TECNOLOGICO DEL MAR, Fundación CETMAR
Type of organisation	NGO-Foundation
Description	The beneficiary is the Centro Tecnológico del Mar, Fundación CETMAR – specifically, the Control y Gestión del Medio y de los Recursos Marinos department. This public foundation was established by the Galician Regional Government (Xunta de Galicia) and the Ministry of Science and Technology, and is responsible for the promotion, R&D and management of marine projects.
Partners	Conselleria de Pesca, Spain C.R.D.O. Mexillon Galicia, Spain OPMEGA, Spain

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Administrative data:

Project reference	LIFE04 ENV/ES/000239
Duration	15-OCT-2004 to 15-OCT -2007
Total budget	669,599.37 €
EU contribution	334,800.00 €
Project location	Galicia(España)

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Read more:

Project web site	Project's website (ES)
Publication: After-LIFE Communication Plan	Title: After-LIFE Communication plan (132 KB) Year: 2007 No of pages: 8
Publication: Guidelines-Manual	Title: "GUÍA DE BUENAS PRÁCTICAS Y PROPUESTA DE GESTIÓN DE LOS RESIDUOS DE LABOREO" Author: Centro tecnico del mar No of pages: 12
Publication: Layman report	Title: Layman report (ES/EN) Year: 2007 No of pages: 19
Publication: Layman report	Title: Layman report (739 KB) Year: 2007 No of pages: 8
Publication: Management plan	Title: "Action plan for the integral management of the mussels wastes" No of pages: 41
Publication: Management plan	Title: "Plan de acción para gestión integral de los residuos producidos por el cultivo de mejillón" Author: Centro tecnico del mar, fundacion cetmar No of pages: 44
Publication: Technical report	Title: "REPORT ON THE TRANSFERABILITY OF GESTINMER PROJECT RESULTS TO IRISH LONGLINES" Author: Centro tecnologico del mar, fundacion cetmar No of pages: 24
Publication: Technical report	Title: "ANALYSIS AND DIAGNOSIS ON WASTE BYPRODUCT GENERATING FROM MUSSEL FARMING ON MUSSEL RAFTS. Final report on waste from mussel farming: characterization and quantification" Author: Centro tecnico del mar No of pages: 117

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