



ExtEnSity - Environmental and Sustainable Management Systems in Extensive Agriculture

LIFE03 ENV/P/000505



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Project description:

Background

The promotion of EMAS and broader sustainable development is a priority of the 6th Environment Action Programme, as is the development of a thematic strategy on the sustainable use of resources. Before the project's start, there had been only two EMAS registrations in Portugal and none for agriculture (EU-wide there are only 12 in this sector). In 2000, there were 205 ISO 14001 certificates worldwide in agriculture and fishing, but no certificates for these sectors in Portugal.

One of the major deficiencies in the application of environmental management in agriculture is that there is no evaluation of its private and social economic and environmental benefits that could lead farmers to adopt these systems. But sustainability management is particularly important in extensive agriculture, which is permanently under the pressures of either intensification or abandonment. Additionally, for some environmental factors, the chain from the farm gate to the consumer's plate has a significant impact.

In southern states of Europe, traditional "montado" or "dehesa" (savannah-like agro-forestry-pastoral ecosystem) and cereal steppe landscapes have come under threat from more intensive farming methods (e.g. irrigated agriculture). Degradation processes, such as desertification and erosion, affect more than 16% of the EU land area and southern Portugal is also at risk from desertification.

Objectives

The main objectives of the project were the following:

- To create a cost-effective and simple Sustainability Management System (SMS) for extensive agriculture, comprising environmental, social and economic aspects, with successive levels of demand
- To develop an interactive approach to the SMS comprising, as possible intermediate steps, integrated farming/crop management, organic farming, certification of origin, green accounts, ISO 14001 and EMAS
- To obtain farm level sustainability indicators for the SMS by downscaling from the national and EU levels
- To apply innovative aggregation methods to assess trade-offs between sustainability indicators
- To contribute to a test of the applicability of these methods for the Resource Strategy of the 6th EAP
- To promote the economic viability of the SMS for farmers
- To promote the SMS to consumers, increasing their awareness of and interest in sustainable products.

Results

The Extensity project successfully implemented a Sustainability Management System (SMS) with the aim of accompanying, monitoring, measuring and disseminating the performance of the participating farms. In parallel, farmers received technical support in the adoption of sustainable agricultural practices.

The project began with 10 pilot farms, reaching 86 at the end, with a total area of approximately 70 000 ha. The project was primarily aimed at livestock production farms (sheep for milk and meat, beef cattle and field pigs) based on pastures complemented with non-irrigated and irrigated tree cultures, olive groves, wood pastures and forest. The final universe of farms participating in the project included businesses of all types and with diverse levels of sustainability. The project areas were primarily located in the inland part of central and southern Portugal.

Implementation of the SMS involved several steps:

- Lifecycle analysis of the environmental impacts associated with products and activities: agricultural cultivations in various countries for feeds, the production of feed, the production and transport of fertilizers, agricultural production, live animals, carcasses and packaged products, slaughter, meat cutting, packaging, refrigeration and domestic processing. The greatest impacts were found to derive from the production of feed inputs (namely the production of the required fertilizers), fertilisation operations and means of transport.
- Aggregation methods, namely ECoIndicator95, EcoIndicator99 and Total Economic Value, in order to assess the benefits of the two major farming technologies promoted by the project: no-tillage and sown biodiverse permanent pastures rich in legumes. The impacts of alternative production systems, such as natural pastures vs. seeded pastures and conventional seeding vs. direct seeding, were also evaluated. The evaluation enabled the creation of an environmental impact database for products and agricultural activities in Portugal.
- The development of an innovative information system (<https://si.extensity.pt>) - a

centralised database and a geographic information system based exclusively on open source components. Users access the system via a secure Internet site. It is possible to update data in real time and from anywhere without the farmer having to buy computer software or requiring any initial training. The system includes administrative, geographic and farm management information as well as a bovine management module to support the cattle management and an Animal Movement Record Book.

The SMS comprises two levels:

- The first, mandatory for all participating farms, is obtaining sustainability indicators (compatible with GRI, Portuguese and EU agricultural statistics and indicators for rural development policies). Some of these indicators are the fertilizers, herbicides and pesticides used, the water consumption, the waste generated or the area covered by quality production systems.
- The second, optional for the participating farms, consists of the implementation of environmental management systems. Sixteen farms have drawn up complete sustainability reports, 13 farms have implemented EMAS, and two farms the Guaranteed Sustainability standard.

This project has been selected as one of the 17 "Best" LIFE Environment projects in 2008-2009.

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Environmental issues addressed:

Themes

Environmental management - EMAS
Industry-Production - Agriculture - Fisheries

Keywords

Agriculture, EC regulation on eco-management and audit

Natura 2000 sites

Not applicable

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Beneficiaries:

Coordinator	Instituto Superior Técnico
Type of organisation	Research institution

Description	The beneficiary is the Instituto Superior Técnico (IST), specifically its Department of Mechanical Engineering (DME)/Section of Environment and Energy. IST is a public institution (the largest Portuguese engineering faculty), whose main mission is to promote higher education of an outstanding quality in the areas of engineering, science and technology, as well as the research and development activities essential to create, train, transfer and disseminate knowledge. IST develops research in energy, environmental impact assessment, environmental economics, modelling and engineering, land-use planning, soil erosion, transport and GIS. The DME is located in Lisbon, but the project has been implemented in the Centre Region and part of the Alentejo Region.
Partners	Confederação dos Agricultores de Portugal (CAP) Associação para a Escola Superior de Biotecnologia da Universidade (AESBUC), Portugal Associação Nacional de Criadores de Ovinos Serra da Estrela (ANCOSE), Portugal Associação Portuguesa para a Defesa do Consumidor (DECO), Portugal DECOECO – Projectos Ambientais Ld ^a , Portugal Instituto de Desenvolvimento Rural e Hidráulica, Portugal FERTIPRADO – Sementes e Nutrientes, Ld ^a (P) Instituto Nacional de Investigação Agrária e das Pescas (INIA), Portugal Liga para a Protecção da Natureza (LPN), Portugal Ministério da Agricultura, do Desenvolvimento Rural e das Pescas/Auditor de Ambiente, Portugal SGS Portugal-Sociedade Geral de Superintendência SA, Portugal

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Administrative data:

Project reference	LIFE03 ENV/P/000505
Duration	01-NOV-2003 to 28-FEB -2008
Total budget	1,419,571.00 €
EU contribution	709,785.00 €
Project location	Centro,Lisboa e vale do Tejo,Alentejo

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Read more:

Brochure-Leaflet	Title: "O contributo das pastagens permanentes semeadas biodiversas ricas em leguminosas para o sequestro de carbono" (5.2 MB) Editor: Instituto Superior Técnico, Lisboa No of pages: 8
File	Title: Layman report (PT) Editor: Instituto Superior Técnico, Lisboa No of pages: 16
File	Title: After-LIFE Communication Plan (EN) Year: 2008 No of pages: 5
Project web site	http://extensity.ist.utl.pt/
Publication	Title: Layman report (EN) Editor: Instituto Superior Técnico, Lisboa No of pages: 16

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