Project description:

Background

Fish discards and by-catch cause environmental and economic impacts and are a priority issue under EC fisheries and environmental policies. Reduction of discards and by-catch are serious challenges in European fisheries and the new Common Fisheries Policy calls for the progressive elimination of all discards, obliging the fishing industry to bring almost all of its catch (especially fish and crustaceans) back to port. This will require systems to be set up to make a better use of unwanted by-catch and discards. Some recycling and valorisation systems have already been explored, such as the production of protein and oil, in a previous LIFE project.

Objectives

The FAROS project aimed to develop and implement an efficient and integral discards and by-catch management network involving all actors in the fishing sector in Spain and Portugal, including fleets, ports, retailers and marine processing industries. The main objectives were the minimisation of discards and by-catch quantities reaching the ports, as well as their optimal valorisation to produce chemicals of interest for the food and pharmaceutical industry. Specific objectives included reducing unwanted discards and by-catch through a better understanding of fish behaviour; analysing the catch history of target fisheries to forecast their catch during the year; developing a complete
characterisation of discards on the selected fisheries (based on automated classification, analysis and data collection tools); and conducting studies to clarify valorisation opportunities for different marine species that are currently treated as waste.

Results

The FAROS project succeeded in delivering a virtual management network, comprising a GIS-based web portal, a database, and a series of technological tools and methodologies, aimed at improving the management of fish discards and by-catch. The database included historical data, real-time data, information about contaminants and processing techniques for different by-catch species. This innovative system was tested at pilot scale in the Vigo port area on commercial trawlers during their fishing activities, where it was shown to be highly feasible from the technical point of view. The “Management Geoportal Network” is based on the concept of Spatial Data Infrastructure and is located in a central web server that receives, processes and displays real-time fishing data. It integrates information on all species taken on board by trawlers, in defined coastal areas of Galicia and Portugal, with a purpose-built discard prediction model based on new and existing data, and the pollutant contents of by-catch species. The network tool provides real-time information about market demand to fishing boats, so they can focus on catching the best species and minimise discards. It also permits on-land actors to know what type of fish is being captured in order to plan the processing or transformation of the by-catch into fish meal, oils and other products. A precise analysis and characterisation of fish discards for different locations is being built up. The new data for this is acquired by BEOS, a vision-based system that allows automatic identification and quantification of species, and is processed and transmitted by the RedBox system. As the database gains more data, the virtual management network will gain in precision and reliability thereby improving the on-board management of discards. The FAROS project also developed a virtual modelling and simulation tool to improve industrial processing, using data from specific discard valorisation processes; a tool for the environmental assessment of fishing activities; a precise assessment of the Ecological Footprint of a commercial port (Vigo); and practical guidelines to apply and reproduce the tools developed. The project results could be easily transferred to the entire EU fishing sector, where they could have enormous potential for increasing profitability, improving the sustainability of fishing activities, and helping fleets to comply with the discard ban included in the reformed Common Fisheries Policy due to come into effect in 2014.

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

Themes

Environmental management - Cleaner technologies
Environmental management - Life Cycle Assessment-Management
Industry-Production - Agriculture - Forestry
Species - Fish
Waste - Waste reduction - Raw material saving
Waste - Waste use

Keywords

fishing industry, waste recycling, integrated management, survey

Natura 2000 sites

Not applicable

Beneficiaries:

Coordinator
Consejo Superior de Investigaciones Científicas

Type of organisation
Research institution

Description
The Consejo Superior de Investigaciones Científicas – Instituto de Investigaciones Marinas (IIM-CSIC), is the largest public research organisation in Spain with specialist experience in environmental topics covering sustainable fisheries, marine food processing and adding value to waste.

Partners
Centro Tecnológico del mar–Fundación CETMAR, Spain Centro de Supercomputación de Galicia, Spain Instituto de Investigação das Pescas e do Mar, Portugal Instituto Español de Oceanografía, Spain Autoridad Portuaria de Vigo, Spain

Administrative data:
### Project Details

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<th><strong>Project reference</strong></th>
<th>LIFE08 ENV/E/000119</th>
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<td><strong>Duration</strong></td>
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**Read more:**

- **Project web site**
  - Project's website (ES/EN/PT)

- **Publication: After-LIFE Communication Plan**
  - Title: After-LIFE Communication Plan
  - Year: 2013
  - No of pages: 9

- **Publication: Layman report**
  - Title: Informe Layman
  - Year: 2013
  - No of pages: 20

- **Publication: Layman report**
  - Title: Layman report
  - Year: 2013
  - No of pages: 20

- **Publication: Technical report**
  - Title: Project's Final technical report
  - Year: 2013
  - No of pages: 103