



# **FISHERIES DISCARD STUDY. HOW**

## **HOW IS THE STATE OF THE ART?**

*Compilation and analysis of discard projects.*

*By European Fisheries Technology Platform  
(EFTP)*



# FISHERIES DISCARD STUDY. HOW IS THE STATE OF THE ART?

INDEX

## HOW IS THE STATE OF THE ART?

### Summary:

The European Fisheries Technology Platform has done a compilation of most relevant discard projects. The authors have examined several projects concerned with bycatch and discards in world fisheries. The information have been collected throw a public research using an on line questionnaire. The information is classified into the different measures taken to minimize/ valorize discards and also into an active or past initiative.

The authors feel socio-cultural attitudes toward marine resources should be an important consideration in the development of international discard policies. It is important to notice that most of the projects under study have not asses the socioeconomic impact of the measures implemented.

### The document it is structured into the following sections:

- ✓ Description of ongoing projects
- ✓ Description of the initiatives already finished
- ✓ Brief mention of others discard projects
- ✓ Socioeconomic impact of the discards projects
- ✓ Analysis of the EU management
- ✓ Statistic Analysis of the project under study
- ✓ GANTT analysis of the project under study

### PROJECTS LIST:

1. VIP VDTN

2. FISH BEHAVIOR IN RELATION TO TOWED FISHING GEARS

3. BAKASEL: MINIMIZATION OF FISH DISCARD ON BOTTOM SINGLE TRAWL BY MEAN OF SELECTIVE DEVICES PUT IN THE TRAWL

4. ASSESSING THE ENVIRONMENTAL AND ECONOMIC IMPACT OF MODIFIED FISHING GEARS.

5. INTEGRAL NETWORKING OF FISHING SECTOR ACTORS TO ORGANIZE A RESPONSIBLE, OPTIMAL AND SUSTAINABLE EXPLOITATION OF MARINE RESOURCES. (FAROS)

6. BYCATCH AND DISCARDS: MANAGEMENT INDICATORS, TRENDS AND LOCATION (BADMINTON)

7. ESTIMATION AND REDUCTION OF DISCARDS IN THE SPANISH ATLANTIC AND MEDITERRANEAN AREAS

8. IMPROVING OF THE SELECTIVITY OF FISHING GEARS TO THE DISCARDS REDUCTION. TECHNOLOGY IMPACT IN GALICIAN FISHING SECTOR (PSE-REDES)

9. EVALUATION AND VALORIZATION OF BY-PRODUCTS FROM FISHING INDUSTRY.

10. VALORPESC. INTEGRAL PROJECT TO USE AND VALORIZE DISCARDS COMING FROM THE BASQUE TRAWL FLEET

11. POSIBILIDADES DE APROVECHAMIENTO Y VALORIZACIÓN DE CABEZAS Y EXOSQUELETOS DE LANGOSTINOS (PENAEUS SPP.)

12. BIOTECMAR. BIOTECHNOLOGICAL EXPLOITATION OF MARINE PRODUCTS AND BY-PRODUCTS

13. IBEROMARE. CENTRO MULTIPOLAR DE VALORIZAÇÃO DE RECURSOS E RESÍDUOS MARINHOS

14. VALORIZACIÓN DE RESIDUOS DA PRODUCCIÓN DE PRODUCTOS PESQUEIROS: OBTENCIÓN DE PRODUCTOS DE ALTO VALOR ENGADIDO A PARTIR DE PEL E ESPÍÑAS DE PEIXE

15. PRESPO: SUSTAINABLE DEVELOPMENT OF ARTISANAL FISHERIES IN THE ATLANTIC AREA

16. DATA COLLECTION FRAMEWORK (DCF) - DISCARD MONITORING

17. SEAFISH DISCARD ACTION GROUP

18. MULTI-PURPOSE PLANT FOR THE INTEGRAL USE OF THE GALICIAN FISHING BY-PRODUCTS

19. BIOTECHNOLOGICAL VALORIZATION OF MARINE RESOURCES (VALVIOMAR)

20. PROTEUS-TRANSFORMATION OF NATURAL RESOURCES AND MARINE DEBRIS IN HIGH VALUE PRODUCTS FOR INDUSTRIAL APPLICATIONS

21. BENIGN AND ENVIRONMENTALLY FRIENDLY FISH PROCESSING PRACTICES TO PROVIDE ADDED VALUE AND INNOVATIVE SOLUTIONS FOR A RESPONSIBLE AND SUSTAINABLE MANAGEMENT OF FISHERIES (BE-FAIR)

22. ANALYTICAL VALUATION RED CRAB CARAPACE (CHIONOECETES OPILIO) FOR USE IN FEED FOR AQUACULTURE (ROXOCANVAL)

23. PLANTA MULTIPROPÓSITO PARA LA VALORIZACIÓN INTEGRAL DE RESIDUOS PESQUEROS DE GALICIA

24. ASISTENCIA TÉCNICA PARA LA REALIZACIÓN DE UNA MEDIDA INNOVADORA PARA LA RECUPERACIÓN, GESTIÓN Y VALORIZACIÓN DE LOS DESCARTES PESQUEROS GENERADOS POR LA FLOTA ESPAÑOLA QUE FAENA EN LOS CALADEROS ATLÁNTICO Y MEDITERRÁNEO

25. ESTUDIO DE LAS POSIBILIDADES DE LA UTILIZACIÓN DE VARIAS ESPECIES DE CRUSTÁCEOS DESCARTADAS POR LA FLOTA GALLEGA EN SUS PESQUERÍAS TRADICIONALES EN LAS COSTAS DE GALICIA, PORTUGAL Y GRAN SOL

26. SWEDISH GRID TRIALS IN AREA VIIA

27. MODELING THE FLOW THROUGH FINE-MESHED PELAGIC TRAWLS

28. ESTIMATION OF TRAWL DISCARDS IN THE WESTERN MEDITERRANEAN. EUROPEAN HAKE (MERLUCCIIUS MERLUCCIIUS) AS A CASE STUDY.

## OTHER MENTIONED PROJECTS

- ✓ Project 50%
- ✓ Conservation Credits Scheme
- ✓ Scottish Industry Science Partnership
- ✓ Square mesh panels trials
- ✓ Bristol Channel 100mm cod end trials



- ✓ **Cornwall red mullet**
- ✓ **Modified commercial trawl.**
- ✓ **North Sea 'Eliminator' Type Gear Trials.**
- ✓ **South Wales Bass Square Mesh Panels.**
- ✓ **Simple trawl modification to reduce cod catches**
- ✓ **Cod Catch Quota Scheme**
- ✓ **North Sea**
- ✓ **RTC**
- ✓ **Individual Vessel Cod Avoidance Plans**
- ✓ **Trevoise Box Closure**
- ✓ **New markets**
- ✓ **Red gurnard**
- ✓ **Government initiatives**
- ✓ **South Wales Bass Square Mesh Panels**
- ✓ **Marifish**
- ✓ **AMDES**



# 1. PROJECT DESCRIPTION



## 1.1 Ongoing projects:

### Classification:

- **Selective fishing gears and devices**
  - **Management measures**
    - **Valorization**
      - **Others**

### 1. VIP VDTN

"Research on reducing discards of fish and benthos by technical modifications in beam trawls".

**Type of project:** **Selective fishing gears and devices**

**Lead:** CPO Texel, Haven 15, 1792 AE Oudeschild, Texel, Netherlands

#### Partners:

- Fishing company TX68 Ankerstraat 29Texel, Netherlands
- Fishing company UK45 Schelphenhoek Netherlands
- Fishing company GO4, Bernhardstraat, Netherlands
- IMARES, Netherlands and ILVO, Belgium

**Duration:** 2010/10/01-2012/12/31

**Have it received public funds?** Yes, National

**Co funded?** European funds managed at regional or Member state level

#### Project coordinator's details:

Bob van Marlen, IMARES, Netherlands  
Project Manager Fishing Technology,  
[bob.vanmarlen@wur.nl](mailto:bob.vanmarlen@wur.nl) [www.imares.nl](http://www.imares.nl)  
Tlf: +31 317 48 71 81 Haringkade 1

## 2. Fish Behavior in relation to towed fishing gears (Confidential information)

"A priority of the Conservation Credit Scheme, which is part of the fisheries management regime in Scotland, is the reduction of the discarding of cod. One of the means employed is to allocate additional fishing opportunities to fishing vessels that use gears that reduce cod catches".

#### Project coordinator's details:

Barry O'Neill, Fishing Technology Group Leader,  
Marine Scotland - Science  
+44 1224 295343  
[oneillb@marlab.ac.uk](mailto:oneillb@marlab.ac.uk)  
375 Victoria Road. Aberdeen. Scotland

**Type of project:** **Selective fishing gears and devices**

**Lead:** "Marine Scotland - Science is the only and lead organization involved in the project. It carries out research and provides expert scientific and technical advice on marine and freshwater fisheries, aquaculture, and the protection of the aquatic environment and its wildlife. This is to ensure that - as far as possible - the policies and regulatory activities of Government are supported by full and up-to-date knowledge.

**Duration:** 2010/04/01 - 2013/03/31

**Have it received public funds?** National funds. The project is funded by the Scottish Government.

### 3. BAKASEL: minimization of fish discard on bottom single trawl by mean of selective devices put in the trawl



"Project main objective is to characterize the behavior of different fish species inside the trawl to design selective devices to put in the more suitable part of the trawl in relation with fish behavior".

#### Project coordinator's details:

Luis Arregi Senior Scientist working at Marine Research Division (AZTI-TECNALIA)  
[larregi@azti.es](mailto:larregi@azti.es) Telf:+34 946574000 AZTI-TECNALIA  
Txatxarramendi Ugarte a z/g 48395 Sukarrieta (Bizkaia) SPAIN

**Type of project:** **Selective fishing gears and devices**

**Lead:** [www.azti.es](http://www.azti.es) AZTI TECNALIA is a Technological Institute from Spain

**Duration:** 2010/12/17-2012/03/31

**Have it received public funds?** European and Regional funds, European funds managed at regional or Member state level. The funding programme has been The European Fisheries Fund in co-funding with Basque Regional Government.

### 4. Assessing the environmental and economic impact of modified fishing gears

"In this project we will enhance our ability to assess, predict and quantify (i) the engineering performance and (ii) the environmental impact of towed fishing gears. This, in turn, will allow a better assessment of existing and modified gears and permit the development of more fuel efficient gears and of fishing gears of reduced environmental impact".

#### Project coordinator's details:

Barry O'Neill, Fishing Technology Group Leader, Marine Scotland - Science  
+44 1224 295343  
[oneillb@marlab.ac.uk](mailto:oneillb@marlab.ac.uk)  
375 Victoria Road, Aberdeen, Scotland

**Type of project:** **Selective fishing gears and devices**

**Lead:** Marine Scotland – Science carries out research and provides expert scientific and technical advice on marine and freshwater fisheries, aquaculture, and the protection of the aquatic environment and its wildlife. This is to ensure that - as far as possible - the policies and regulatory activities of Government are supported by full and up-to-date knowledge.

**Duration:** 2011/04/01 - 2015/03/31

**Have it receive public funds?** National funds. The project is being funded by the Scottish Government.

### 5. Integral Networking of Fishing Dector Actors to Organize a Responsible, Optimal and Sustainable Exolitation of Marine Resources. FAROS. (LIFE08/ENV/000119) <http://www.farosproject.eu/>

"The main objective of the project is the development and implementation of a neural network for an efficient and comprehensive management of discards and bycatch fisheries. The project involves several actors in the fisheries sector (fleet, ports, etc.), with the objectives of minimizing discards / by-catch, optimizing value, and produce commercial products of interest in food and pharmaceutical industries".

#### Project coordinator's details:

Alberto Gonzalez-Garcés Consejero técnico  
Telf.: + 34 986492111 [alberto.garces@vi.ieo.es](mailto:alberto.garces@vi.ieo.es)  
Instituto Español de Oceanografía. Apartado 1552. 36280 Vigo. Spain

**Type of project:** Project focusing discards reduction through management measures.



**Lead:** Instituto Investigaciones Marinas. CSIC. Spain.

**Partners:**

- Instituto Español de Oceanografía. Spain.
- Centro Tecnológico del Mar - Fundación CETMAR. Spain.
- Centro de Supercomputación de Galicia. CESGA. Spain
- INSTITUTO DE INVESTIGAÇÃO DAS PESCAS E DO MAR (INRB-IPIMAR). Portugal
- AUTORIDAD PORTUARIA DE VIGO. Spain.

**Duration:** 2010/01/01 - 2013/01/31

**Have it received public funds?** YES, European funds managed through European Programmes.

**Co funded?** Project co-founded between the European Union LIFE08/ENV/000119, and the members of the consortium.

## 6. Bycatch And Discards: Management INDicators, Trends and locatiON (BADMINTON ) <http://83.212.243.10/badminton.html>

"In the EU there is intensive data collection of bycatch and discard onboard commercial vessels but until now there have been few attempts to describe the general patterns in these data, and still less to understand the factors that determine what and how much is discarded. However, the latter step it is key if we are to develop operational indicators and propose mitigation tools for fisheries management. There is especially a need to investigate the effectiveness of mitigation methods that have been implemented in the past that is primarily technical regulations, including gear modification. This has to be done at the scale of the fishery: many gear modifications showed to make a difference in field trials, however there have been few studies about the way fishers used these modified gears, and the real impact it had on catches and discards on the fleet scale".

**Project coordinator's details:**

Alberto Gonzalez-Garcés Consejero técnico  
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Instituto Español de Oceanografía. Apartado  
1552. 36280 Vigo. Spain

**Type of project:** Project focusing discards reduction through management measures

**Lead:** Hellenic Centre for Marine Research (GREECE)

**Partners:**

- IFREMER (L'Institut Français de Recherche pour l'Exploitation de la Mer). France.
- IEO (Instituto Español de Oceanografía). Spain
- CEFAS (Centre for Environment Fisheries and Aquaculture Science) UK.
- FM (Innovative Fisheries management, Aalborg University). Denmark.
- MATIS (Icelandic Food Research). Iceland.

**Duration:** 2009/01/01 - 2012/31/12

"DTU Aqua (National Institute of Aquatic Resources). Denmark

**Have it received public funds?** Yes, European and National funds, European funds managed through European Programmes "ERA-NET MarFish project.

**Co funded?** Co-founded by the consortium members.

## 7. Estimation and reduction of Discards in the Spanish Atlantic and Mediterranean areas

<http://www.ba.ieo.es/es/investigacion/grupos-de-investigacion/ibdes/proyectos/441-amdes>



"Improve the knowledge of the proportion of discards by Operational Unit (gear, area and quarter) of the main component species in the ICES areas and comparison of current estimates of discards with new predictive models based on regression and adapted to the behavior of the species".

### Project coordinator's details:

Alberto Gonzalez-Garces, Consejero técnico  
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Instituto Español de Oceanografía. Apartado 1552. 36200 Vigo. Spain

**Type of project:** Project focusing discards reduction through management measures

**Lead:** Instituto Español de Oceanografía. Spain.

**Duration:** 2010/01/01 - 2012/12/31

**Have it receive public funds?** National funds, European funds managed through European Programmes. Project founded by the EU Data Base Collection

## 8. Improving of the selectivity of fishing gears to the discards reduction. Technology impact in Galician fishing sector (PSE-REDES) <http://pseredes.org/>

"Reduction of fishing discards by improving selectivity capacity of fishing gears, contributing to a sustainable use of fishing resources and to the development of the fishing sector. The project is under development; however there are some pilot gears developed pending for testing in commercial fishing ships".

### Project coordinator's details:

Rosa Fernández Otero, area coordinator  
Promotion and technology transfer CETMAR  
[rfernandez@cetmar.org](mailto:rfernandez@cetmar.org) [www.cetmar.org](http://www.cetmar.org)  
Telf: +34 986 247 047 Fundación CETMAR  
C/Eduardo Cabello s/n E-36208 Bouzas-Viao

**Type of project:** Project focusing discards reduction through management measures, Selective fishing gears and devices

**Lead:** Centro Tecnológico del Mar - Fundación CETMAR RTD Public Foundation Spain

### Partners:

- Instituto Español de Oceanografía IEO Public RTD Center Spain
- Universidade de Vigo Public University Spain
- Universidade de A Coruña Public University Spain
- TecnoPesca PyM SME Spain
- Tecnología Marina Ximo MAREXI SME Spain
- Cooperativa de Armadores del Puerto de Vigo ARVI SME Spain
- Confederación Española de Pesca CEPESCA Association Spain

9 Fishing companies (SME, Spain)

- Pesquera Recare S.L.
- Plana y Cía. S.L.
- Pesquera Santander S.L.
- Juan José Rosales Carregal
- Pesquera Jopitos S.L.
- Pesquera Julimar S.L.
- Sebastián Martín Sánchez

**Duration:** (2009/09/01)-(2013/08/31)



**Have it received public funds?** National funds. Ministerio de Ciencia e Innovación (MICINN) Plan Nacional de I+D+I 2008-2011. Subprograma de apoyo a Proyectos Singulares Estratégicos, (Spain).



## 9. Evaluation and Valorization of by-products from fishing industry

"Design and implementation of relatively simple methods for obtaining used products as food additives, compounds for pharmaceutical, cosmetic and biomedical products from by-products, to give them an added value".

### Project coordinator's details:

Juan José de la Cerda, RTD Manager  
PESCANOVA S.A.  
[juanjoc@pescanova.es](mailto:juanjoc@pescanova.es)  
[www.pescanova.es](http://www.pescanova.es)

**Type of project:** Fishing by-products valorization

**Lead:** PESCANOVA S.A. SME Spain

- FUNDACIÓN CETMAR. CENTRO TECNOLÓGICO DEL MAR RTD Public Foundation Spain
- Instituto de Investigaciones Marinas. Consejo Superior de Investigaciones científicas (CSIC) RTD public Agency Spain
- "Universidad de Santiago de Compostela Public University Spain
- "Universidad de Vigo Public University Spain

**Duration:** (2009/04/30)-(2012/04/30)

**Have it receive public funds?** YES National funds. CDTI- Proyectos Integrados Fondo Tecnológico (FEDER)

## 10. VALORPESC. Integral Project to use and valorize discards coming from the Basque trawl fleet (Confidential information)

"The main objective of this project is to provide real, efficient, technically and economically feasible solutions to the Basque trawl fleet in order to stimulate the use and the valorization of discards".

### Project coordinator's details:

Susana Etxebarria, Senior researcher  
Sustainability of the food chain department  
AZTI [setxebarria@azti.es](mailto:setxebarria@azti.es)

Achieved results are the following:

1. A detailed characterization of discards coming from the Basque trawl fleet based in the harbor of Ondarroa.
2. Development of a procedure for the storage and classification of discards on board.
3. Selection of an economically and technically feasible alternative, easy to implement in the short run: Raw material to produce high quality fish meal
4. Proposal of different alternatives to valorize discards as high value products for human consumption.

Preliminary formulation results and development of a pilot scale process. Expected results for 2011 are:

1. Development of a pilot trial in an offshore trawl fleet's boat, analyzing the difficulties to carry out the valorization option to produce high quality fish meal, and considering all the stakeholder in the valorization chain.
2. Creation of a discard valorization protocol applicable to the whole Basque trawl fleet.
3. Technical and economical action plan for the whole Basque trawl fleet"

**Type of project:** Discards' valorization

**Lead:** AZTI FOUNDATION is a Marine and Food Research Center located in the Basque Country, Spain.

**Duration:** 2009/01/01-2011/12/31

**Have it received public funds?** Regional. European funds managed at regional or Member state level.



## 11. Posibilidades de aprovechamiento y valorización de cabezas y exoesqueletos de langostinos (*penaeus* spp.)

**Type of project:** Discards' valorization

**Have it received public funds?** Yes, FEP

**Duration:** 2009-2012

**Participants:** 7 Private companies and IIM

## 12. Biotecmar. Biotechnological exploitation of marine products and by-products [www.biotecmar.eu](http://www.biotecmar.eu)

"The main objective of BIOTECMAR is to set up and incorporate a fully integrated chain for the production of value added compounds derived from Atlantic marine resources. BIOTECMAR's overall aim is to help the companies of Atlantic Area (which are mainly SMEs) to take advantage of the use of modern biotechnological tools and contribute to a

diversification of the activities derived from marine biomass exploitation within the strict framework of sustainable management of marine natural resources. The various sectors concerned by the project are the following: 1. The fisheries, aquaculture, seaweed harvesting and seafood processing as source of raw materials, 2. The fish by-products and discards conservation, collection and transport and processing, 3. The production and commercialization of bioactive compounds and/or ingredients derived from processing to be used for the food, feed, nutrients, cosmetics and therapeutic industries, 4. The development and the transfer of R&D in marine biotechnology".

### Project coordinator's details:

GUERARD Fabienne, LEMAR - UMR 6539 - Institut Universitaire Européen de la Mer - Place Nicolas Copernic, 29280 Plouzané, France  
[www.univ-brest.fr](http://www.univ-brest.fr) Telf:+33 2 98 01 60 03  
[fabienne.guerard@univ-brest.fr](mailto:fabienne.guerard@univ-brest.fr)

**Type of project:** Discards' valorization

**Lead:** Fabienne Guerard UBO

### Participants:

- Université Européenne de Bretagne-Université de Bretagne Occidental (Francia),
- Museum National d'Histoire Naturelle de Concarneau (Francia),
- Technopole Quimper Cornuaille (Francia),
- Martin Ryan Institute de la National University of Ireland (Irlanda),
- Indigo Rock Marine Research Centre (Irlanda),
- CETMAR (España),
- CSIC (España),
- IPIMAR (Portugal),
- Université de la Rochelle (Francia),
- Université de Nantes (Francia),
- IFREMER (Francia), NET- Novas Empresas e Tecnologías S.A. (Portugal)

**Duration:** (2009/01/01)-(2011/12/31)

**Have it received public funds?** YES, European funds managed through European Programmes Interreg UE program

### 13. IBEROMARE. Centro Multipolar de Valorização de Recursos e Resíduos Marinhos



**Participants:**

- Universidade do Minho (Portugal),
- Centro Interdisciplinar de Investigação Marinha e ambiental (Portugal),
- CETMAR (Espanña),
- Universidad de Vigo (Espanña),
- Universidad de Porto (Portugal),
- Universidad de Santiago de Compostela (Espanña),
- Universidade Católica Portuguesa – Centro Regional do Porto (Portugal),
- Conselleria do Mar (Xunta de Galicia),
- Instituto de Investigaciones Marinas (CSIC).

**Project coordinator's details:**

Rui L Reis, 3 B´s U. Minho

**Have it received public funds?** YES, European. Cooperación Transfronteriza España-Portugal. INTERREG UE program.

**Duration:** 1/04/2009 al 31/12/2011

### 14. Valorización de residuos da produción de productos pesqueiros: obtención de productos de alto valor engadido a partir de pel e espiñas de peixe

**Lead:** private company

**Participants:** 2 private companies, IIM-CSIC.

**Have it received public funds?** YES, Regional. Xunta de Galicia 10TAL011E

**Duration:** 2010-2013.

### 15. PRESPO: sustainable development of artisanal fisheries in the Atlantic Area <http://atlanticprojects.inescporto.pt/project-area/prespo>

"Focusing on discards, studies will be conducted to evaluate the impacts of the discards in the marine environment and to develop new fishing gears (or modify the existing ones), more selective and efficient than those used actually, aiming to minimize the impacts in the ecosystem. The encouragement and the promotion of fishing practices that reduce the impacts in the marine environment is also a priority of this project".

**Project coordinator's details:**

Miguel Gaspar Main Researcher IPIMAR  
[mbgaspar@cripsul.ipimar.pt](mailto:mbgaspar@cripsul.ipimar.pt)  
Telf: +351289700500

**Type of project:** Focused on artisanal fisheries

**Lead:** IPIMAR (Portugal)

**Partners:**

- CETMAR (Spain)
- AGLIA (France)
- CADIZ UNIVERSITY (Spain)
- CEP (Spain)
- HUELVA UNIVERSITY (Spain)
- 2009/01/01 - 2011/12/31
- FEUP (Portugal)
- IFREMER (France)

- RICEP (France)
- IFAPA (Spain)



**Have it received public funds?** European funds managed through European Programmes.  
FEDER funds co funded by Basque Government

## 16. Data Collection Framework (DCF) - discard monitoring

<http://www.cvo.wur.nl/>

"Within the DCF the Netherlands collect discard information on their commercially most important fisheries. Data and results are reported to the Ministry of Economic affairs, Agriculture and Innovation."

### Project coordinator's details:

A.T.M. (Edwin) van Helmond MSc. Project Manager.  
Department of Fisheries. IMARES.  
[edwin.vanhelmond@wur.nl](mailto:edwin.vanhelmond@wur.nl) Tlf: +31 317 487171

**Type of project:** Annual estimates of discard rates and total volume by metier.

**Lead:** IMARES. Research Institute. The Netherlands.

**Have it received public funds?** Yes, National funds The Netherlands. EU - Data Collection Framework (DCF).

## 17. Seafish Discard Action Group

<http://www.seafish.org/fishermen/responsible-sourcing/protecting-fish-stocks/discards>

<http://www.seafish.org/fishermen/responsible-sourcing/protecting-fish-stocks/discards/discard-action-group>

"The Discard Action Group was set up by the UK-based Sea Fish Industry Authority three years ago in light of the many initiatives being adopted by the fishing industry to address the issue of discards. It acts as an 'issue forum' playing a pivotal role in mediating a common approach to discard issues affecting the whole seafood supply chain. The terms of reference for the group states: 'the aim of the DAG is to improve our understanding of the phenomenon of discarding and to explore the means by which discarding can be reduced to the minimum level practicable.' The DAG reports to the Seafish-facilitated Common Language Group which covers all issues affecting the seafood industry. The group is representative of the seafood supply chain with representatives from the catching sector, non-governmental organizations, legislators, regulators, technologists and scientists, retailers and foodservice and, where appropriate, the media".

### Project coordinator's details:

Karen Green, Secretary Discard Action Group  
Sea Fish Industry Authority 18 Logie Mill  
Logie Green Road Edinburgh Scotland  
EH7 4HS [k\\_green@seafish.co.uk](mailto:k_green@seafish.co.uk)

**Type of project:** Communication programme

**Lead:** Sea Fish Industry Authority. The Sea Fish Industry Authority is a Non-Departmental Government Body based in the UK which is funded by a levy.

**Duration:** 2008/01/01 - ongoing

**Have it received public funds?** YES, National National funds

## 1.2 PROJECT ALREADY FINISHED

### 18. Multi-purpose plant for the integral use of the Galician fishing by-products

"Design of an industrial plant for treatment and recovery of wastes and by-products from the fishing activity en Galicia. Development of a brief market analysis for each potential product".

**Type of project:** Discards' valorization

**Lead:** CETMAR RTD Public Foundation Spain and IIM-CSIC Public RTD center Spain

**Duration:** (2004/09/01)-(2008/02/01)

**Have it received public funds?** YES, Regional funds. Spain: Plan Gallego de I+D: PGIDIT

**Project coordinator's details:**

Rosa Fernández Otero, Area Coordinator  
Promotion and Technology Transfer  
CENTRO TECNOLÓGICO DEL MAR-  
FUNDACION CETMAR

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Telf: +34 986 247 047. Fundación CETMAR  
C/Eduardo Cabello s/n E-36208 Bouzas-

### 19. Biotechnological valorization of marine resources (VALBIOMAR)

<http://www.valbiomar.org/> [http://www.interreg-atlantique.org/iib/pl/projet/detail\\_projet.html?idr=47&id=81](http://www.interreg-atlantique.org/iib/pl/projet/detail_projet.html?idr=47&id=81)

**Lead:** Université de La Rochelle Public University France

"The VALBIOMAR project seeks to develop an Atlantic network of competences in the domain of maximizing the biotechnological value of living marine resources, and energizing relations among laboratories and SMEs to produce concrete co-operation, and the development of new activities. The principal object of VALBIOMAR rests on the necessity, in the context of the rarefaction of certain marine resources, of optimizing the operations of transformation of raw materials and of the generation of co-products (animal and human foods, cosmetics, health products)".

**Project coordinator's details:**

J.M. PIOT, Laboratoire LIENS  
Université de La Rochelle [jmpiot@univ-lr.fr](mailto:jmpiot@univ-lr.fr)  
<http://www.univ-larochelle.fr/>  
Telf: +33 (0)5 46 45 86 44

**Type of project:** Valorization of marine products and by-products

**Partners:**

- Centro Tecnológico del Mar. Fundación CETMAR RTD Public Foundation Spain
- ALICONTROL SME Spain
- Institut français de recherche pour l'exploitation de la mer (IFREMER) Public organism or assimilated Francia
- IPIMAR/INRB-National Institute for Fisheries and Sea Research, University or research center, Portugal
- Integrin Advanced Biosystems Ltd, SME (holding company) United Kingdom
- Museum National d'Histoire Naturelle Public Center France
- Technopole Quimper-Cornouaille, Not for profit organization France
- Universidad de La Laguna Public University Spain
- French Public Universities:
- Reseau des Universites de l'Ouest Atlantique (RUOA),
- Université de Bretagne Occidentale,
- Université de Bretagne Sud, Université de Nantes-ISOMER
- Public University France



**Have it received public funds?** YES, European funds managed through European Programme INTERREG III B "Espacio Atlántico" 2000-2006.

**Duration:** (2003/09/01)-(2006/12/30)



## 20. Proteus-Transformation of natural resources and marine debris in high value products for industrial applications <http://www.proteusproject.eu>

"Sustainable development of new industrial products which has a potential high value, through transformation of fishing by-products, looking for the technological strengthening in the cross-border competitiveness"

### Project coordinator's details:

Manuel José Magalhães Gomes Mota  
Vice-reitor para a investigação  
Grupo de Investigação 3B's - Biomaterials,  
Biodegradables and Biomimetics  
Universidade do Minho.

**Type of project:** Discards' valorization

**Lead:** Universidade do Minho (Grupo 3B's) Public University Portugal

### Partners:

- Centro tecnológico del mar. Fundación CETMAR RTD Public Foundation Spain
- CIIMAR-UP (Centro Interdisciplinar de Investigaçao Marinha e Ambiental) RTD Center Portugal
- Universidad de Vigo Public University Spain

**Duration:** (2006/03/10)-(2008/09/30)

**Have it received public funds?** European funds managed at regional or Member state level  
Unión Europea: INTERREG III A.

## 21. BENIGN AND ENVIRONMENTALLY FRIENDLY FISH PROCESSING PRACTICES TO PROVIDE ADDED VALUE AND INNOVATIVE SOLUTIONS FOR A RESPONSIBLE AND SUSTAINABLE MANAGEMENT OF FISHERIES (BE-FAIR)

<http://www.befairproject.com/en/main.html>

"Minimization of the adverse environmental impact from the fishing activities, both on board and ashore, looking for a responsible and sustainable fishing management. Development of an integral by-products treatment and improving the reusing and recycling of industrial fishing wastes.

Results: Prototypes production of gelatin "chondroitin" and fish oil".

### Project coordinator's details:

Antonio Alvarez Alonso  
CONSEJO SUPERIOR DE INVESTIGACIONES  
CIENTÍFICAS – INSTITUTO DE INVESTIGACIONES  
MARINAS (IIM-CSIC)"  
<http://www.iim.csic.es/> Telf: +34 986231930

**Type of project:** Project focusing discards reduction through management measures, Discards' valorization

**Lead:** "Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC) RTD public Agency Spain

### Partners:

- Centro Tecnológico del Mar - Fundación CETMAR RTD public Foundation Spain
- Espaderos del Atlántico, S.A SME Spain
- Institute Français de Recherche pour L'exploitation de la Mer RTD public Center France
- Instituto de Investigaçao das Pescas e do Mar (IPIMAR) RTD public Center Portugal
- PEIXESPORT, S.L SME Spain

- HNOS. RODRIGUEZ GÓMEZ, SL SME Spain
- AUTORIDAD PORTUARIA DE VIGO Port Authority Spain



**Duration:** (2005/11/15)-(2008/11/15)

**Have it received public funds?** YES, European funds managed through European Programmes "Unión Europea Programa LIFE Medio ambiente – Comisión Europea. Programa Life. Clave: LIFE 05 ENV/E/ 000267 BE-FAIR (2005-2008).

## 22. Analytical Valuation Red Crab Carapace (*Chionoecetes opilio*) for use in feed for aquaculture (ROXOCANVAL) <http://www.roxocanval.org>

"Utilization of a by-product resulting from the handling on freezers ships dedicated to this species, rich in protein and natural dyes, with potential use in feed for aquaculture. As a result, technical studies have been published".

### Project coordinator's details:

Julio Maroto Leal, Area Coordinator.  
Technology of Fish products CETMAR  
[jmaroto@cetmar.org](mailto:jmaroto@cetmar.org) [www.cetmar.org](http://www.cetmar.org)  
Telf: +34 986 247 047

**Type of project:** By-products valorization

**Lead:** Centro Tecnológico do Mar (Fundación CETMAR) RTD Public Foundation Spain.

### Partners:

- Universidad de Santiago de Compostela. Facultade de Farmacia. Departamento de Química Analítica, Nutrición e Bromatoloxía Public University Spain.

**Duration:** 2006/03/01 - 2006/12/31

**Have it receive public funds?** Regional funds. Plan Gallego de I+D (PGIDIT)

## 23. Planta multipropósito para la valorización integral de residuos pesqueros de Galicia

**Type of project:** Discards' valorization

**Have it received public funds?** Yes, Dirección Xeral de Investigación e Desenvolvemento de la Xunta de Galicia. PGIDIT04TAM007001CT. Coordinated Project.

**Lead:** Instituto de Investigaciones Marinas (CSIC),

### Participants:

- Instituto de Investigaciones Marinas (CSIC),
- Fundación CETMAR

**Duration:** 2004 – 2007

**24. Asistencia técnica para la realización de una medida innovadora para la recuperación, gestión y valorización de los descartes pesqueros generados por la flota española que faena en los caladeros atlántico y mediterráneo** (Technical assistance for the implementation of an innovative step for the recovery, management and enhancement of discards generated by the Spanish fleet operating in the North Atlantic and Mediterranean fisheries).

**Type of project:** Discards' valorization

**Participants:** ARVI, IIM

**Have it received public funds?** Yes, Cooperativa de Armadores ARVI with a FROM contract.

**Duration:** 2007-2009

**25. Estudio de las posibilidades de la utilización de varias especies de crustáceos descartadas por la flota gallega en sus pesquerías tradicionales en las costas de Galicia, Portugal y Gran Sol** (Studying the possibilities of using species discarded by the Galician fleet in their traditional coastal fisheries (Galicia, Portugal and Gran Sol)).

**Type of project:** Discards' valorization

**Lead:** ARVI

**Participants:** CSIC, ARVI y Serviguide

**Have it received public funds?** Yes, Regional Secretaria Xeral de Investigación e Desenvolvemento de la Xunta de Galicia MMA033E

**Duration:** 2008-2010.

## 26. Swedish Grid Trials in Area VIIA

"A short trial was carried out on Area VIIA with the Swedish Grid to assess its effectiveness in reducing bycatch in the Irish Sea Nephrops Fishery. The trials showed that bycatch was significantly reduced without losing too much nephrops".

**Project coordinator's details:**

Mr Daniel McDonald Marine Technical Officer. An Bord Iascaigh Mhara, Crofton Rd Dun Laoghaire Co. Dublin  
[McDonald@bim.ie](mailto:McDonald@bim.ie)

**Type of project:** Selective fishing gears and devices

**Lead:** [www.bim.ie](http://www.bim.ie)

**Duration:** 2009/07 - 2009/08

**Have it received public funds?** Regional

**Co funded?** National funds of Ireland

## 27. Modeling the flow through fine-meshed pelagic trawls

"The projects resulted in a theoretical model for the flow through and drag on fine-meshed nets and trawls, e.g. describing how flow and filtration varies with mesh- and net perimeters and with towing speed. The model is general and applies to all net solidities etc., but focus in the present project was on very small meshes and high net solidities. Comparisons were made with flume tank experiments, and showed good agreement between theory and measurements".

### Project coordinator's details:

"Svein Helge Gjøsund Senior Scientist, dr. ing  
 Research Manager Fisheries Technology  
 SINTEF Fisheries and Aquaculture  
 P.O. Box 4762 Sluppen NO-7465 Trondheim,  
 Norway [Svein.H.Gjosund@sintef.no](mailto:Svein.H.Gjosund@sintef.no)  
[www.sintef.no](http://www.sintef.no)

**Type of project:** Theoretical basis with relevance to the performance of nets and trawls.

"Published paper ["Flow through nets and trawls of low porosity"](#) (Gjøsund and Enerhaug, 2010) can be found at Elsevier

**Lead:** SINTEF Fisheries and Aquaculture, Norway

**Duration:** 2003-2005

**Have it received public funds?** YES International

**Co funded?** National funds Norway, The Research Council of Norway, Fisheries Technology programme project no. 153140.

## 28. Estimation of trawl discards in the western Mediterranean. European hake (*Merluccius merluccius*) as a case study

### Project coordinator's details:

Paloma Martin, senior researcher ICM-CSIC  
 Spain [paloma@icm.csic.es](mailto:paloma@icm.csic.es)

"The aim of the project has been the assessment of the discards by the trawl fleets in the western Mediterranean. Discard refers to that part of the gross catch thrown back into the water by fishermen".

The study has focused on the European hake *Merluccius merluccius* because it is one of the main target species for trawling and the fact that it was known to be partially discarded. Field work has been conducted in five fishing ports located in the western Mediterranean, from the northern Tyrrhenian Sea to the Gulf of Lions, coasts of Catalonia and Valence, and Balearic Islands. The duration of the sampling has been six months, from February to July 2001. Data collection included sampling on board commercial trawlers, examination of the discard samples in the laboratory, and data on the trawl fleets and landings in the study ports. The most relevant result to the management of the European hake is that discards can represent a significant part of the total European hake catch both in weight and in number. It is thus necessary considering them in the evaluations to assess the state of exploitation of *M. merluccius* by trawling. The monthly length frequency distributions in all five study ports show that most part of the European hake catch consists of immature individuals. Nevertheless, the proportion of the catch and sizes that are discarded can be very different, as observed when comparing the different study ports. The percentage of discarded European hake during the six months sampling ranged between less than 1% and more than 70% of the total individuals caught, depending on the month and port; as for the European hake discards expressed as percentage of the total hake catch, it ranged between less than 1% and 30% of the total *M. merluccius* catch.

Hake trawl fisheries impact over the benthic and epibenthic communities of the continental shelf and upper slope, as highlighted by the number of species identified during six-months sampling on board commercial trawlers (for example, 319 only in one of the study ports). The vessels targeted to *Merluccius merluccius* include other species in their objectives. The number of species caught by trawl that are commercialised is also high, around 90 in three of the study ports. Within the study ports, on average during the six-months sampling, the amount of discarded catch ranged between 17% of the total catch and 34%. The main reason for discarding part of the catch is the low or nil commercial interest of the discarded species. In general, the incidence of discards in species with commercial interest is low. Significant changes in *M. merluccius* abundance have been observed from month to month. Therefore, sampling frequency of this study, monthly, 3 days at sea so as to minimize the effect of autocorrelation of the hauls performed during the same day, seems to have been adequate to detect the changes in hake abundance. When there is an active European hake discard as observed in one of the study ports, both the total European hake catch and time of the year have a significant effect on the amount of discarded hake. The highest hake catches and discards corresponded to the time of the year with more intense recruitment of European hake to trawling. This result is important when considering the possibility of closed seasons for trawling.

**Type of project:** Project focusing discards reduction through management measures

**Duration:** 2001/01/01-2001/09/30

**Have it receive public funds?** YES, Regional. European funds managed through European Programmes

**Co funded?** By Spanish and Italian government

**Lead:** Instituto de Ciencias del Mar, CSIC Barcelona (Spain)

**Partners:**

- Instituto Espanol de Oceanografia - (Spain)
- University of Pisa (Italy)



# OTHER DISCARD PROJECTS

## 1. Gear selectivity

### Project 50% [www.cefas.co.uk](http://www.cefas.co.uk)

Previous approaches to reducing the damaging fishing practice called "discarding" (throwing fish with no market value back into the water) often achieved little or no success. Project 50% used an innovative approach to dealing with this high-profile, long-standing issue by putting collaboration at the heart of its plans.

An innovative partnership between CEFAS scientists and the Devon beam trawler fleet aimed at helping to protect fish stocks, has led to skippers reducing the amount of juvenile fish discarded overboard by an overall 57 percent. There are 11 fact sheets.

Social marketing experts carried out interviews with fishermen in southwest England to clarify the issues, communicate the potential for change, and help guide a new approach to developing discard-reduction techniques.

Devon beam-trawler crews agreed to try to reduce their discards by an ambitious 50%. Working with local net-makers, the fishermen trialled their own new net designs alongside standard trawling configurations. The research was supported by Cefas gear technologists and fishery liaison officers. The side-by-side trials were a resounding success, with average discards reductions of 52%, and the most successful boat achieving a 69% reduction.

Lear: CEFAS

Funded: DEFRA (UK)

Partners:

- TRAWLER AGENTS LTD
- SOUTH WEST FISH PRODUCERS ORGANISATION LTD
- SWFPO
- BRIXHAM TRAWLER AGENTS LTD
- INTERFISH LTD PLYMOUTH
- PLYMOUTH TRAWLER AGENTS LIMITED

**Conservation Credits Scheme** - In Scottish waters a whole host of measure were introduced under the Conservation Credits Scheme including a "one-net rule" so that vessels carry only one regulated gear mesh size per trip. Special rules were introduced for twin-rig vessels and single trawl vessels. There have also been selectivity trials covering *Nephrops*, cod and whitefish mixed fisheries.

### **Scottish Industry Science Partnership**

In 2011 funding of £243,000 awarded to five projects working to enhance the conservation credentials of Scotland's fishing sector - £50,000 will go towards trials of coverless and low headline trawls aimed at reducing whitefish catches in *Nephrops* fisheries. £14,000 in the Western Isles to look at the effects of mesh size and escape panels on catch composition in the *Nephrops* creel fishery.

In 2010 trials to reduce cod by-catches in Shetland mixed demersal whitefish trawl fisheries by putting large meshes (300 and 600mm) in the front portion of a commercial trawl. The results showed that both test gears caught significantly fewer cod, hake, megrim and ling than the control trawl across all length classes and significantly fewer monkfish below 76 and 83cm respectively than the control trawl. The 300mm trawl caught significantly more haddock than the other trawls and catches of saithe greater than 53cm were reduced in both test gears. [http://www.frs-scotland.gov.uk/FRS.Web/Uploads/Documents/SISP01\\_10.pdf](http://www.frs-scotland.gov.uk/FRS.Web/Uploads/Documents/SISP01_10.pdf)

**Square mesh panels trials** on twin/multi rig working inshore grounds in the northern Thames Estuary to investigate the potential of more selective/environmentally friendly fishing methods to reduce discard rates of fish and benthos in the northern Thames Estuary. **2010/2011**

**Bristol Channel 100mm cod end trials** to understand the effects on landings and discards of moving to a 100 mm mesh cod-end compared with a standard 80mm cod end. **2010/2011**

[Cornwall red mullet](#) gill net fishery discard reduction trialling a range of nets. **2010/2011**



[Modified commercial trawl](#). Survey to know more about the behavior of cod and other fish as they enter the net. **2010/2011**

[North Sea 'Eliminator' Type Gear Trials](#). To provide new information on comparative catch profiles of the 'eliminator' trawl to those from a conventional trawl fitted with belly cod-escape panels. This modification has been demonstrated to reduce the catches of cod by over 55% in a mixed North Sea demersal whitefish fishery. **2010/2011**

[South Wales Bass Square Mesh Panels](#). To reduce catches of undersized bass through the use of square mesh panels. A lower percentage of undersized bass were caught, the percentage of undersized bass was 11% of the total bass catch when using the experimental trawl and 30% when using the control trawl; the number of discards of other species caught per hour per haul was on average 14% lower when using the square-mesh section; in general, a lower number of fish of 30cm in length and below were caught. **2010/2011**

#### [Simple trawl modification to reduce cod catches](#)

Design a demersal trawl modification to facilitate cod escapement in order to catch fewer cod and comply with conservation objectives in the North Sea. The trawl reduced catches of cod by over 55% in a mixed North Sea demersal whitefish fishery. **2010/2011**

#### **More generally:**

- Square Mesh Panels: have dramatically reduced unwanted catch of either juveniles or by-catch of haddock and whiting.
- Benthic Release Panels: provide beam trawlers with a means to reduce discards and maintain the quality of their catch.
- Irish Sea Double Panel Project: trials to reduce discards of demersal species in the nephrops fishery using a double square mesh configuration.
- Shrimp veils: permit the escape of small plaice and other species in this necessarily small mesh fishery.

## 2. Regulatory controls

[Cod Catch Quota Scheme](#) - In 2010, Defra and Marine Scotland introduced a voluntary pilot Cod Catch Quota Scheme (CCQS), where participating vessels must retain on board and land all cod that is caught, regardless of size and marketability. The Defra scheme is to count all fish against quota, regardless of size and marketability. A final combined UK report once the pilot has concluded should look to compare what, if any, difference in approaches can be identified. The Defra scheme is on a far smaller scale but covers different types of vessels and activities, and the comparative data from both trials will be invaluable. Those participating in the Catch Quota Scheme are now operating a fully documented fishery for cod.

Twenty three vessels, six in England and 17 in Scotland took part in a trial where they account for all they catch (including discards) and in return are given increased catch quotas. Participating vessels have agreed to make use of closed circuit television cameras (CCTV), as part of a network of sensors, that record all fishing and processing activities, on board the vessels. In return they get an additional 5% of the EU share of the cod TAC.

Interim reports in September showed all six participants of the English trial have demonstrated evidence of behavior change to avoid capturing small cod and discarding of cod has been low (currently 4 vessels have been fully analyzed, with discard rates of <1%, 1%, 7%, <1%). The recorded crew data, observer data and REM data show good correlations and Cefas project workers support the view that the scheme is reducing discards and encouraging more selective fishing practices. In Scotland initial signs from the trials suggest this scheme provides a clear and strong economic driver which brings about behavioral changes (spatial, selectivity, diversification) in fishermen. They are clearly incentivized to fish in a way that optimizes their catch. However only a small number of

candidate stocks would be suitable for catch quota management in the North Sea. These are: cod, haddock, whiting and plaice, which make up a significant proportion of all catches.

In 2011 58 Scottish skippers have applied to join the Cod Catch Quota Scheme in Scotland and 26 have been approved. Defra opened applications on 21 January for fishermen in England who want to join the North Sea Cod Catch Quota Scheme and to take part in a new Catch Quota Scheme for Channel sole. Closing date was 21 February 2011. Last year the amount of additional quota set aside to run the scheme amounted to 5%, this year it will be 12%; vessels are limited to 30% additional cod quota. There will also be a trial in the South west sole fishery. In 2011 the trial is due to run from March to December.

### 3. Managing fishing effort

**North Sea** - A Voluntary Real Time Closure (RTC) Scheme has been implemented throughout the cod recovery zone since early 2008. Initially this was to protect spawning cod but was later expanded to cover all cod. When a high abundance of cod is identified a limited area is closed for a fixed period of 21 days after which the area will automatically re-open. Designed to reduce mortality on concentrations of cod using data from catches and tracking information from vessels, enabled an estimated reduction of 10% in cod mortality during 2009

**RTC** - In Scottish waters there are a maximum of nine RTCs in place at any one time. There are also seasonal closures. Localized RTCs provide necessary protection for local aggregations of fish.

**Individual Vessel Cod Avoidance Plans** (formal and informal) – to test the efficacy of cod avoidance plans in ensuring that vessels operate to restrict catches of cod to their quota allocations, through spatial, temporal and gear adaptations. Skippers use their own knowledge and experience to avoid cod whilst fishing for other species and while stocks rebuild.

**Trevose Box Closure** – an area of 3600 square miles off Padstow which closes each season to protect the spawning of fish such as dover sole and whiting. This agreement was secured by Cornish fishermen working closely with their European counterparts provides protection for aggregations of spawning cod where and when they would be vulnerable and discards more likely.

### 4. Marketing

**New markets** – The food service sector is actively working towards bringing underutilized species to the market. Chefs have an important role to play in creating new dining experiences using species such as dab, flounder, grey mullet, pouting, gurnard and cuttlefish.

**Red gurnard** – This under-utilized species won the Billingsgate School Sustainable Fish and Shellfish Award in 2008. This annual event aims to raise awareness of the diversity of responsibly sourced seafood that is available.

**Government initiatives** – Defra, under its 'Fishing for the market' project, is working with industry to influence the market, remove barriers and create new incentives to improve sustainability for edible, under-utilized species.

**South Wales Bass Square Mesh Panels** - The percentage of undersized bass was 11% of the total bass catch when using the experimental trawl and 30% when using the control trawl. The number of discards of other species caught per hour per haul was on average 14% lower when using the square-mesh section.

**Marifish.** Strengthening the links between European marine fisheries science and fisheries management funded by the ERA-NET Scheme of the EU FP6 (2006-2011.)

**AMDES:** Estimation and Reduction of the Atlantic and Mediterranean discards.

## Objetives:

- Estimation and Analysis of discards by ICES fleet by metier and quarter, within the PNdB.
- New models estimates. ICES and the Mediterranean.
- Monitoring and advances in knowledge for the reduction of discards. ICES, Mediterranean.
- Control observers.
- Improving the sector relationship.
- Monitoring of bycatch in the Atlantic and Mediterranean devilfish. Marking activities, Survival, Species identification. And recovery of new technical measures on the Rays in the ICES area.

**Funded:** Spanish National grants. Plan Nacional

**Duration:** 1th January 2010 – 31 December 2012

**Lead:** IEO C.O. Vigo

### Participants:

- C.O. Baleares
- C.O. Murcia
- C.O. Málaga

## SOCIOECONOMIC IMPACT OF THE DISCARDS PROJECTS

2. Have you assessed the socioeconomic impact of the measures that have to be implemented to reduce discards? If yes, can you inform about them?

No,

1. **ROXOCANVAL**
2. **DATA COLLECTION FRAMEWORK (DCF) - DISCARD MONITORING**
3. **FISH BEHAVIOUR IN RELATION TO TOWED FISHING GEARS**
4. **ESTIMATION AND REDUCTION OF DISCARDS IN THE SPANISH ATLANTIC AND MEDITERRANEAN AREAS.**
5. **MULTI-PURPOSE PLANT FOR THE INTEGRAL USE OF THE GALICIAN FISHING BY-PRODUCTS**
6. **EVALUATION AND VALORISATION OF BY-PRODUCTS FROM FISHING INDUSTRY.**
7. **SWEDISH GRID TRIALS IN AREA VIIA**
8. **PRESPO**
9. **MODELING THE FLOW THROUGH FINE-MESHED PELAGIC TRAWLS**
10. **VIP VDTN**
11. **ESTIMATION OF TRAWL DISCARDS IN THE WESTERN MEDITERRANEAN. EUROPEAN HAKE (MERLUCCIIUS MERLUCCIIUS) AS A CASE STUDY**
12. **BIOTECMAR**

**Other answers,**

### **FAROS**

The aims are both the minimization of discards/by-catch as well as their optimal valorization to recover and to produce valuable chemicals of interest in the food and pharmaceutical industry.

### **BADMINTON**

Project Objectives:

1. Provide estimates of amounts discarded in selected European fisheries.
2. Develop indicators of total catch, discards, and selectivity on the stock, community and fleet levels.

3. Find out the most important factors that determine discard amounts (including ecological, social and economical, and technical factors).
4. Suggest integrated management approaches to the discard issue.



### **ASSESSING THE ENVIRONMENTAL AND ECONOMIC IMPACT OF MODIFIED FISHING GEARS.**

A major part of this project will be an economic analysis of the gear options that are available and being developed as part of the Scottish Conservation Credit Scheme to reduce the by-catch and discarding of cod. The economic analysis will consider the change in catch efficiency and composition, plus any other impacts, for example on fuel efficiency or gear costs, and set this against the benefits – reduced by-catch and discards and, for the fishing firm, increased days at sea. The analysis could provide an estimate, for each gear type, of what the break-even days-at-sea increase would need to be in order to make use of selective gears a viable financial proposition. A particular challenge for the economic analysis will be to estimate a value to place on avoided discards and by-catch.

### **PSE-REDES**

It includes a specific sub-project on this issue.

### **BE-FAIR**

Analysis of potential markets for the developed prototypes.

### **PROTEUS-TRANSFORMATION OF NATURAL RESOURCES AND MARINE DEBRIS IN HIGH VALUE PRODUCTS FOR INDUSTRIAL APPLICATIONS**

It was developed a study of the socioeconomic context for that moment in the region Galicia-North Portugal, plus a SWOT analysis for each of the defined applications. It was conducted an analysis of possible channels and logistical feasibility.

### **BAKASEL**

It was expected to analyze the socioeconomic impact of measures, but it will not be possible due to economic constrains in fund.

### **VALORPESC**

The measures we propose are not to reduce discards but to valorize them once reducing measures have been taken previously.

### **VALVIOMAR**

Valorization

### **SEAFISH DISCARD ACTION GROUP**

The DAG is representative of the UK seafood industry. It has helped each sector to understand the perspectives of others and build consensus on issues relating to discarding; it has helped define and promote best practice in discard reduction; it has been instrumental in looking for novel ways of incentivizing the adoption of best practice; it has informed industry and the media of new developments on an international, as well as a national basis; it has provided factual information on discards that is both accessible and understandable and created a discards web page that pulls together key information on measures to reduce discards.

This page includes Seafish publications and news on past and present Seafish projects. It also provides links to published papers and reports, and suggests sources of further information. It also includes the minutes of the DAG meetings.



## Analysis of the EU management

3. Have you analyzed the possible consequences in the EU management systems? Should they be adapted? Please give us your opinion about the best management system to reduce discards?

No

1. VIP VDTN
2. DCF
3. FISH BEHAVIOUR IN RELATION TO TOWED FISHING GEARS
4. ASSESSING THE ENVIRONMENTAL AND ECONOMIC IMPACT OF MODIFIED FISHING GEARS.
5. PROTEUS-TRANSFORMATION OF NATURAL RESOURCES AND MARINE DEBRIS IN HIGH VALUE PRODUCTS FOR INDUSTRIAL APPLICATIONS
6. SEAFISH DISCARD ACTION GROUP
7. ESTIMATION OF TRAWL DISCARDS IN THE WESTERN MEDITERRANEAN. EUROPEAN HAKE (MERLUCCIIUS MERLUCCIIUS) AS A CASE STUDY
8. BIOTECMAR

**Other answers**

### **FAROS**

The objectives complements the European Commission guidelines oriented to the responsible and sustainable management of the European fishing activity, especially in what refers to " the reduction of unwanted by-catches and progressive elimination of discards" and "making the best possible use of the captured resources avoiding its waste" (EC communication on the reform of the CFP). In this way, the project objective aims to contribute to the minimization of the adverse ecological and environmental impact of fishing activities, by helping fleets comply with the so-called "no-discard" or "zero-waste" production aboard, in agreement with the common fisheries policy (to promote a responsible and sustainable management of fisheries).

### **BADMINTON**

Project Objectives:

1. Provide estimates of amounts discarded in selected European fisheries
2. Develop indicators of total catch, discards, and selectivity on the stock, community and fleet levels
3. Find out the most important factors that determine discard amounts (including ecological, social and economical, and technical factors)
4. Suggest integrated management approaches to the discard issue.

### **ESTIMATION AND REDUCTION OF DISCARDS IN THE SPANISH ATLANTIC AND MEDITERRANEAN AREAS**

With the new European Union policy, which is expected to adopt in 2012, with effect from 2013 on reducing unwanted catches and discards reduction, it is necessary to know the fleet and species that would be affected by the new regulations and provide information to the extractive sector about a better knowledge of their unwanted catches.

### **PSE-REDES**

There is no single global solution. Each issue must be analyzed case by case, adopting the solutions on a case by case basis, trying to focus on homogeneous units and involving all stakeholders throughout the process.

### **BAKASEL**

In my opinion the best management system to reduce discard is to improve in gear selectivity or to investigate in more efficient gears related with discards. Another measures like area closures, can move fishing effort to another area were impact is higher.

## **PRESPO**

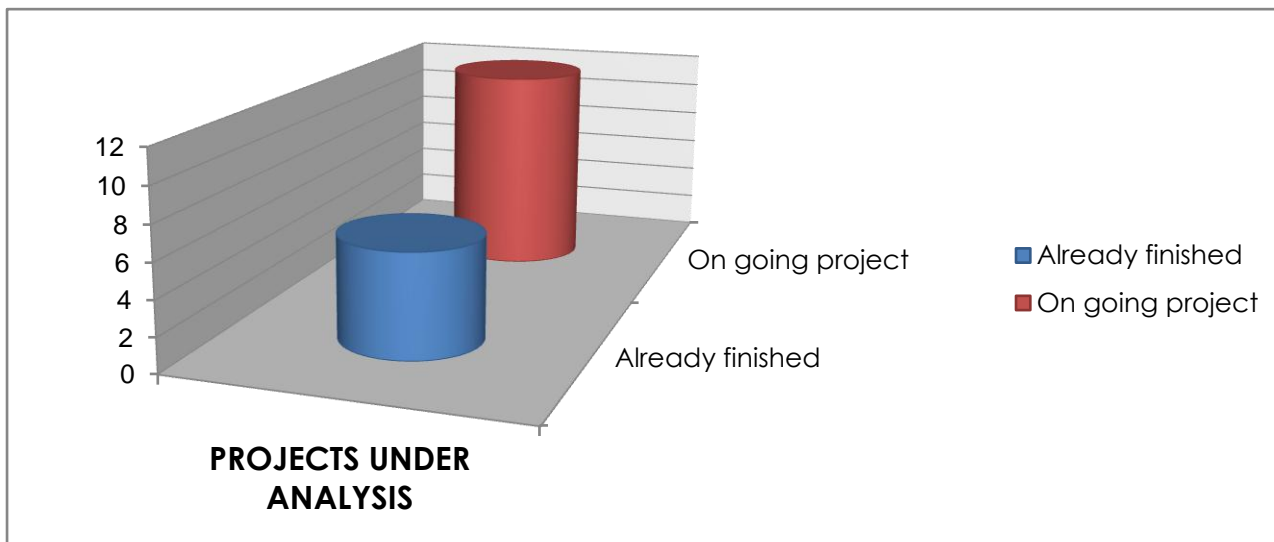
Yes we have analyzed that.

In our artisanal fisheries the discards can be reduced improving gear selectivity and changing some operational characteristics of the activity like soak time. In our analysis the main factors affecting discards will be identified, this will allow if appropriate to take measures to reduce discards.

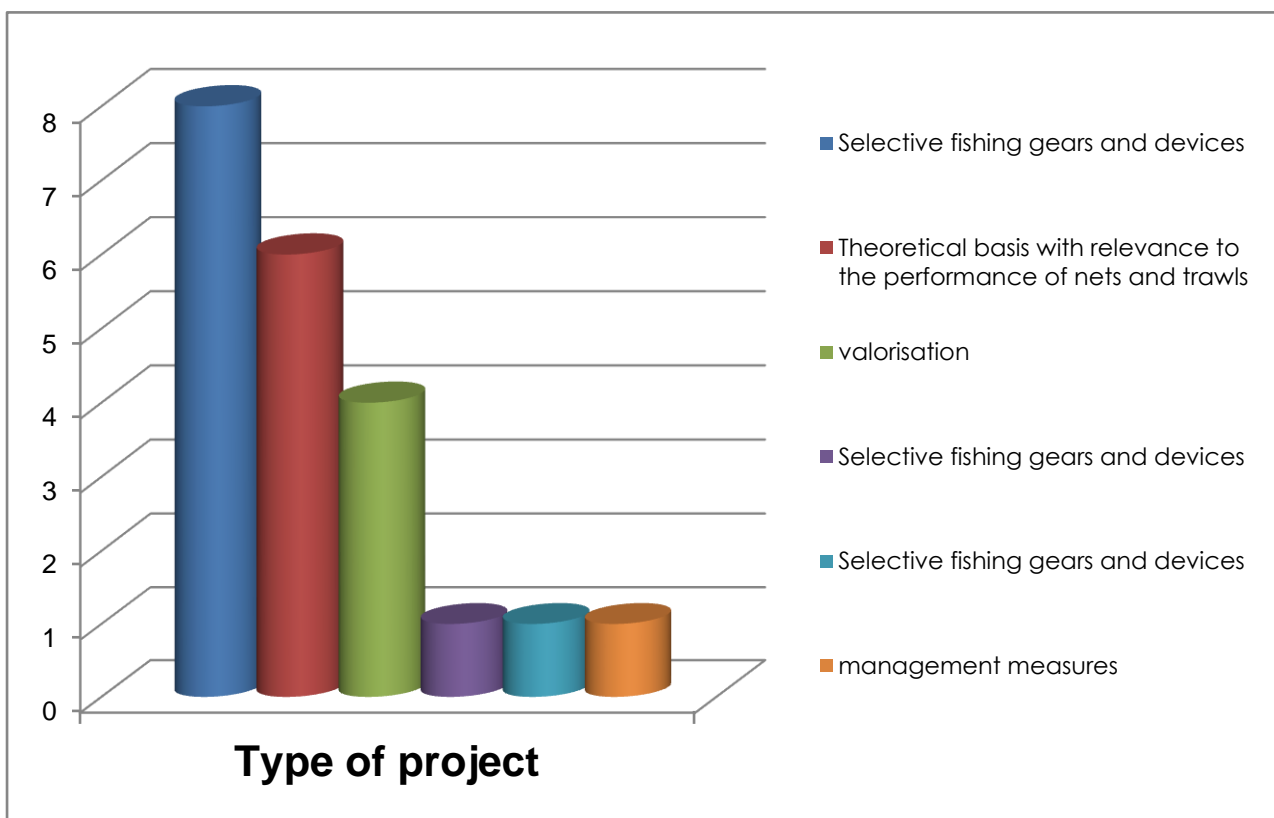
## **VALORPESC**

If we want to have a sustainable fishing activity in the future, the actual management systems must be modified in order to avoid the marine resources depletion. Technical and innovative measures must be taken in order to improve the selectivity of the fishing gear. Once discards have been reduced, what remains should be valorized, as a source of protein that it is.

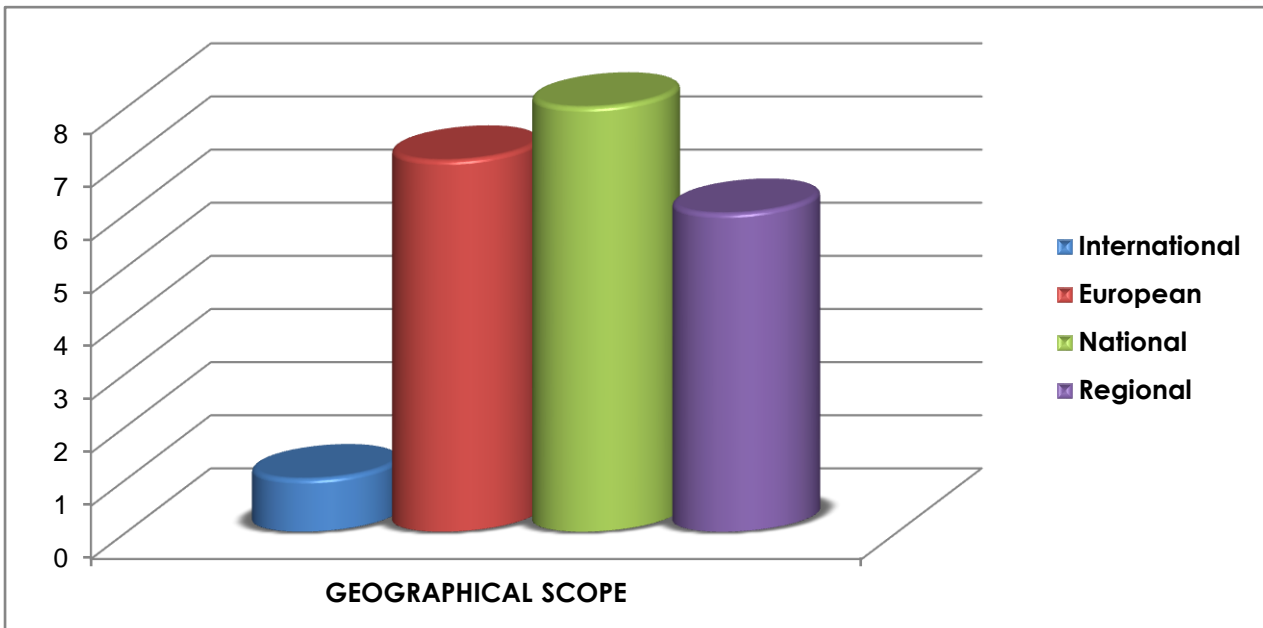
# Statistic Analysis of the projects under study



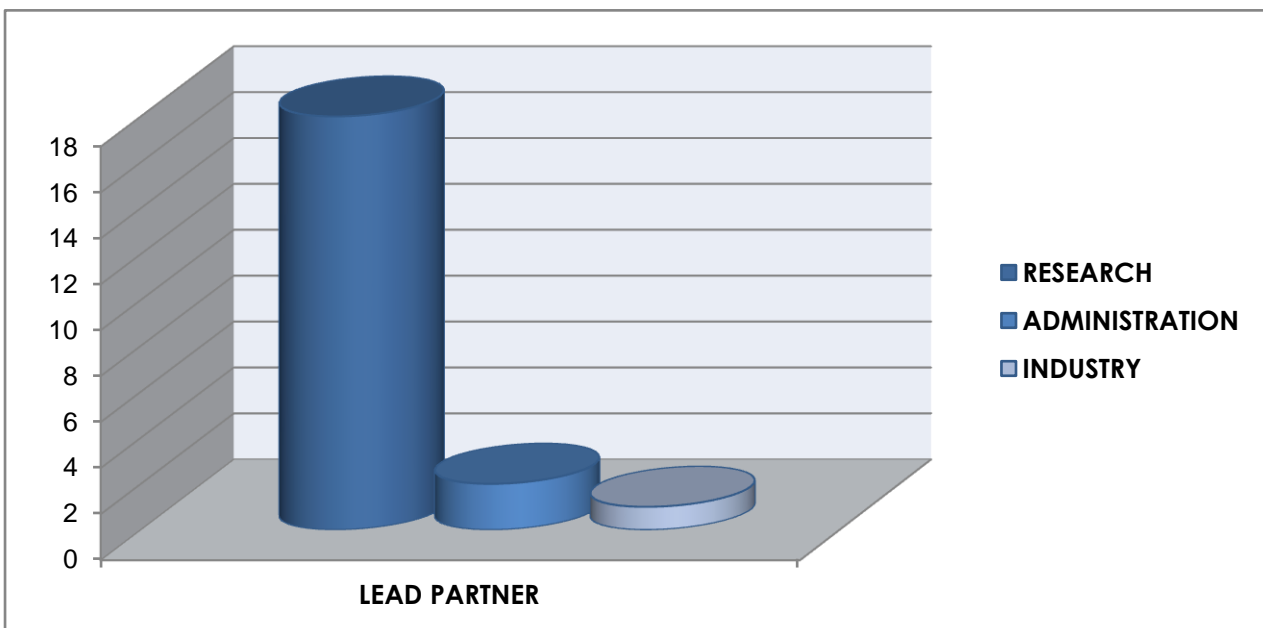
**Fig 1. Graphic of project duration**



**Fig 2. Thematic classification of projects**



**Fig 3. Geographical scope of the studied projects**



**Fig 4: Entity leader of the projects under study.**

# FISHERIES DISCARD STUDY. HOW IS THE STATE OF THE ART?

## GANTT ANALYSIS OF THE DISCARDS PROJETS UNDER STUDY

