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Improvements in selectivity and selection capacity of fishing gears to reduce fishing discards. Technical development and analysis of its potential impact for the catching sector.

PSE-REDES

(PSE-060000-2009-007)

North Western Waters Regional Advisory Council
Information Session on Technical Conservation Measures and Discards
Dublin, 5th July 2011

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Technology Promotion and Transfer
CETMAR
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Oceanigraphic Centre in Vigo
Spanish Oceanographic Institute

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- **Global objective**
- **Consortium**
- **Project Structure**
  - **WP 1: Fishery Unit-based analysis of fishing discards**
  - **WP 2: Design Centre**
  - **WP 3: Testing strategy**
  - **WP 4: Impact**
  - **WP 5: Coordination, technology transfer and management**
- **Key aspects about the methodological approach**
- **Progress on project results**
- **Future prospects**

Global objective

- **To Know the current status and distribution of discards** at each target **Fishery Unit** by identifying species and / or sizes to avoid from catching, and knowing its distribution and behavior, both spatially and seasonally

- **This knowledge is considered key for the design of gear modifications or for other selection devices** given that fishing fleets operating in these areas, need to improve the selectivity and the selection capacity of the gears they use

- The aim of the project **is to design selective fishing methods** and to **promote its usage by fishers and to obtain estimates of the potential impact of such usage to all sectors involved in the regional fishing fabric**

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The consortium

Fundación CETMAR is the leading entity working in close cooperation with IEO for scientific coordination and to implement the project's exploitation and dissemination plan.

Research bodies

- **Instituto Español de Oceanografía (IEO): CO. Vigo, A Coruña, Málaga y Palma de Mallorca**
  - **Group MERVEX**
  - **Group Descartes**
- **University of Vigo**
  - **Group of Inference Statistical and Investigation Operative**
  - **Group of Economic Fishery**
- **University of A Coruña**
  - **Laboratory of Mechanical Engineering.**
    - **Sub-recruitment: CEHIPAR**

Fisheries' tech. companies

- **Tecnopesca PYM**
- **Marexi**

Shipowners and skippers

- **ARVI**
- **CEPESCA**
- **Pesquera Jopitos SL**
- **Pesquera Inter S.L.**
- **Plana y Cía S.L.**
- **Pesquera RECARE S.L**
- **Pesqueras Santander S.L.**
- **Pesca JULIMAR SL**
- **Juan José Rosales Carregal**
- **Sebastián Martín Sánchez**

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Project structure

WP 1

- **Analysis of the distribution and behavior of species discarded and identification of factors affecting the discards for the fishing fleets operating North Atlantic and Mediterranean grounds.**

WP 2

- **Design, manufacture and testing of selective gears and devices.**

WP 3

- **Computer Simulation, experiments and improvements of simulation models and tools.**

WP 4

- **Analysis of the main yields expected from a hypothetic spread of use of the selective gears.**

WP 5: **Technical office. Coordination, dissemination, standardisation and technological support.**

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Key aspects about the methodological approach

1. **Multidisciplinar and multistakeholder collaboration to tackle the problem:**
    1. Fishing companies and representative bodies.
    2. Technology and research centres.
    3. Universities.
    4. Interaction with other networks (Platforms, Projects, etc)

    – Fishing technology, fisheries oceanography and biology, statistics, economics, shipbuilding engineering and hydrodynamics and ICT.

Key aspects about the methodological approach

2) Analyze the problem considering **homogeneus and complete information on Fishery Units**.

3) Analyse **all the factors that influence the discards in each Fishery Unit,** and its relative weigh in it.

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Key aspects about the methodological approach

4) Use of the information derived from the **analysis of each operational unit together with the know-how of fishing professionals** to identify potential technological improvements.

5) **Test measures** and technological improvements identified in conditions of commercial fishing, **in real-life scenarios**.

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Key aspects about the methodological approach

6) **Projecting the results** to determine likely scenarios in the short, medium and long term, **both on the resource situation** (and for the restoration of the ecosystem balance), and **on fishing communities and markets,** from the social and economic perspectives.

7) Ensure the feasibility of measures and proposed improvements to **facilitate the maximum degree of absorption and adaptation of them by the industry**.

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Fishery Units Addressed

- FU1: Community waters targeting flat fish OTB. ICES VII. High discards levels of mainly horse mackerel, A. richardi, boarfish , small-spotted catshark (Scyliorhinus canicula), megrim,
- FU2: Community waters targeting mainly hake OTB. Basically in ICES VII. High discard levels of blue whiting or greater smelt, greater fork Beard, Mediterranean Geryon, blue-mouth, soft head granadier
- FU3-4: Northern Spanish coastal OTB targeting mixed demersal species. ICES VIIIc, IXa-North. High discard levels of P. henslowi, blue whiting, small-spotted catshark, horse mackerel, blackmouth catshark, or Munida spp.
- FU5: Northern Spanish coastal PTB fleet targeting a variety of demersal species. ICES VIIIc, IXa-North. High discard levels of blue whiting and hake
- FU6: Mediterranean GSA01 OTB fleet targeting a variety of demersal species
- FU7: OTB targeting deep species in NAFO area

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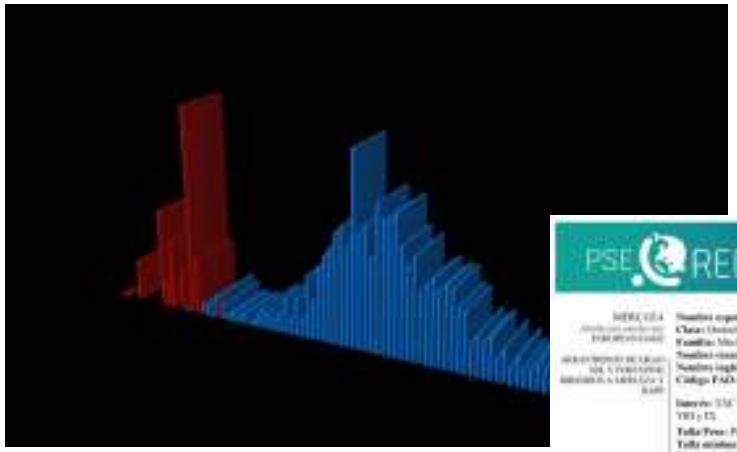
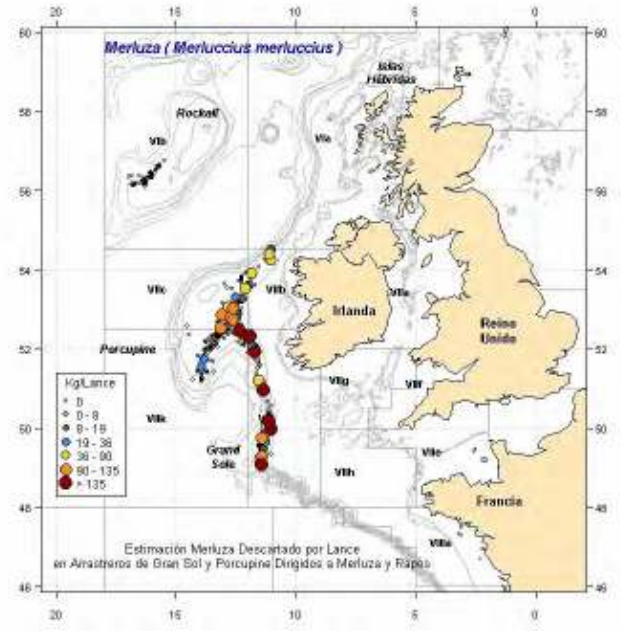
Progress on results

Detailed knowledge on the discards' problem in each of the Operational Units addressed. Software tool to estimate the Discards and its most probable composition.





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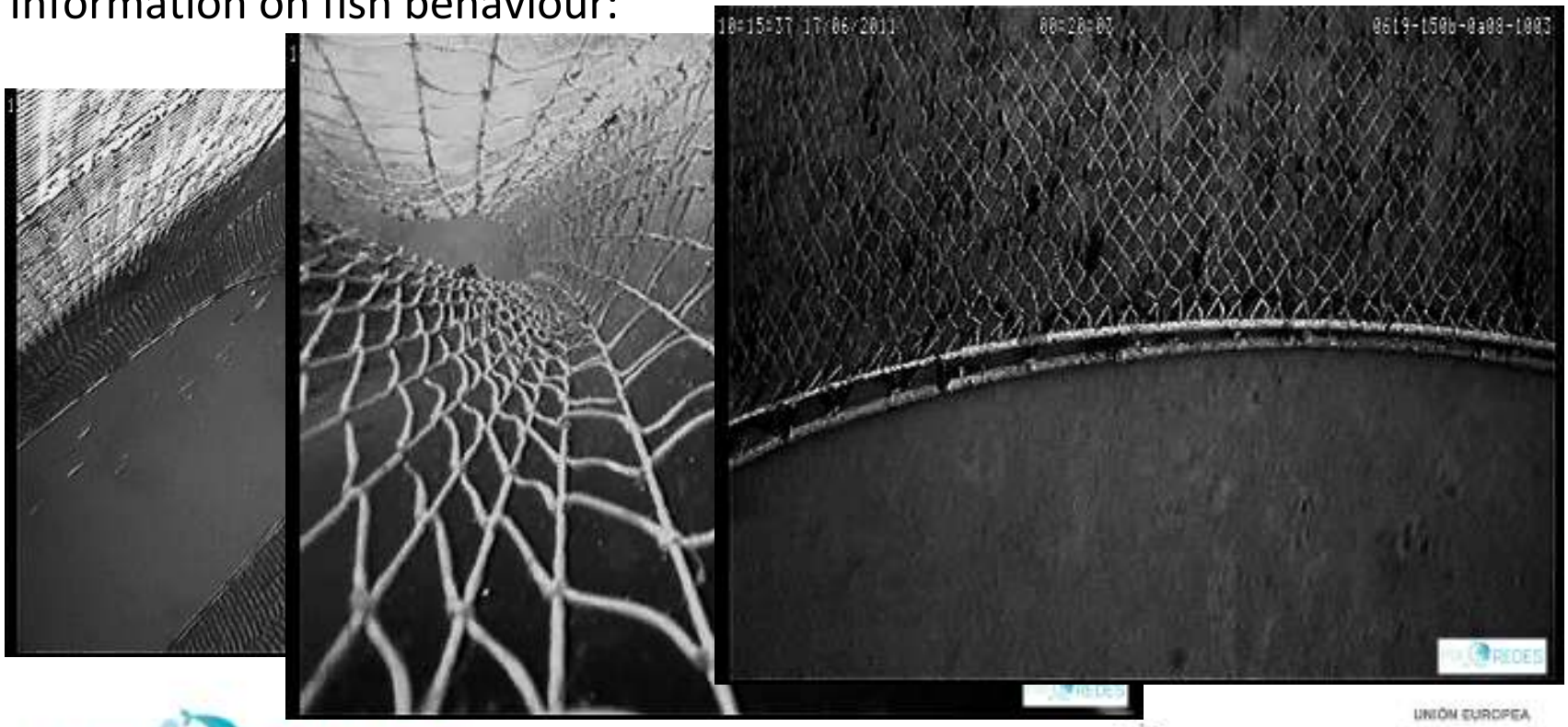
Progress on results

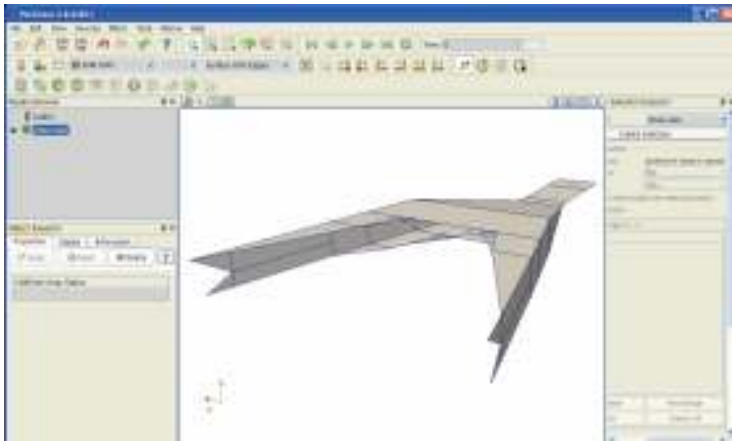
Detailed knowledge on the discards' problem in each of the Operational Units addressed.

Information on fish behaviour:



Progress on results

- Improvements in the process and available means for fishing gear design and manufacturing:
- Design centre as collaborative mechanism to exchange knowledge and ideas.



– **Computer based simulation tool**

– Method for the design of experimental campaigns in nearest-to-real conditions.

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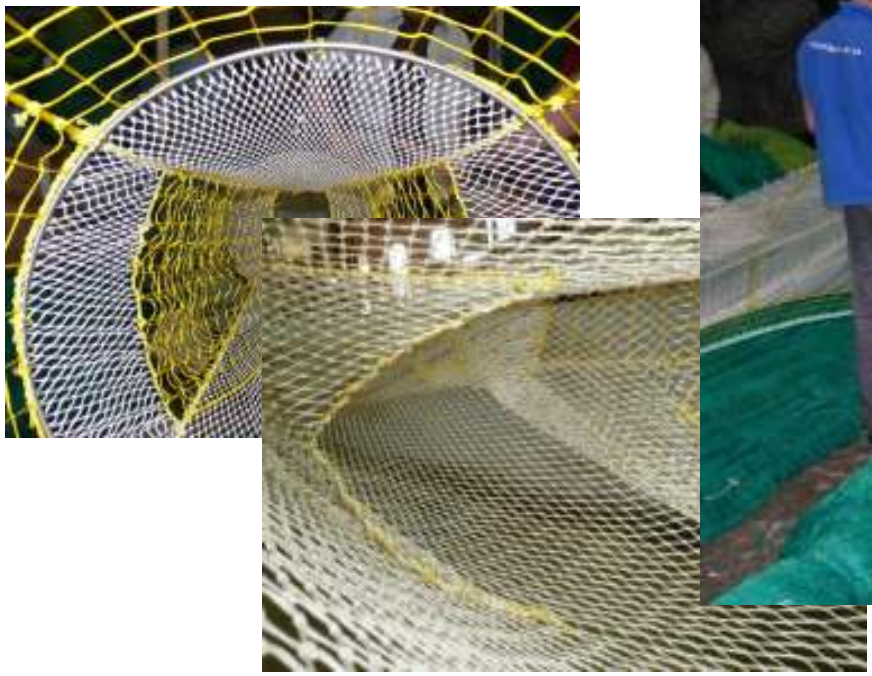
Progress on results

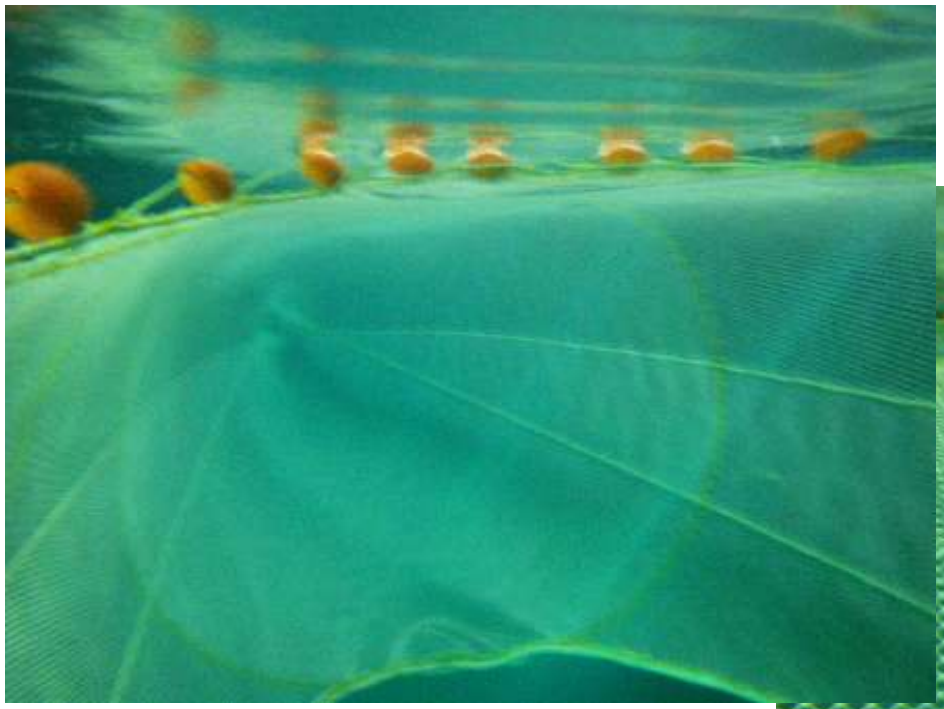
New trawl gear – Galicias' demersal mixed trawl fishery

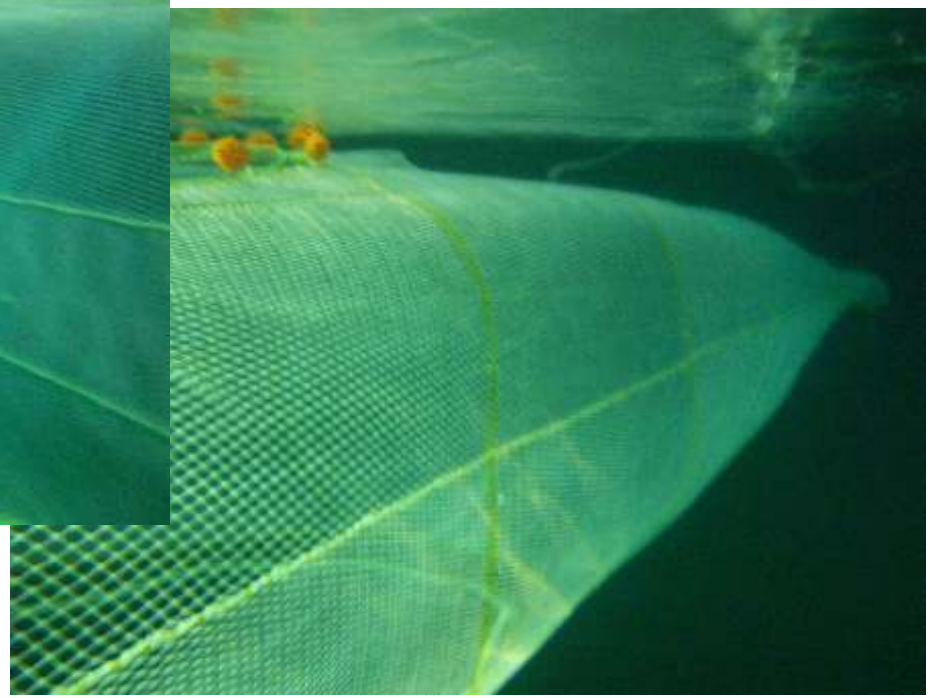


Second new design is under progress; targeting Grand Sole megrim fleet.

Progress on results

Testing at CEHIPAR





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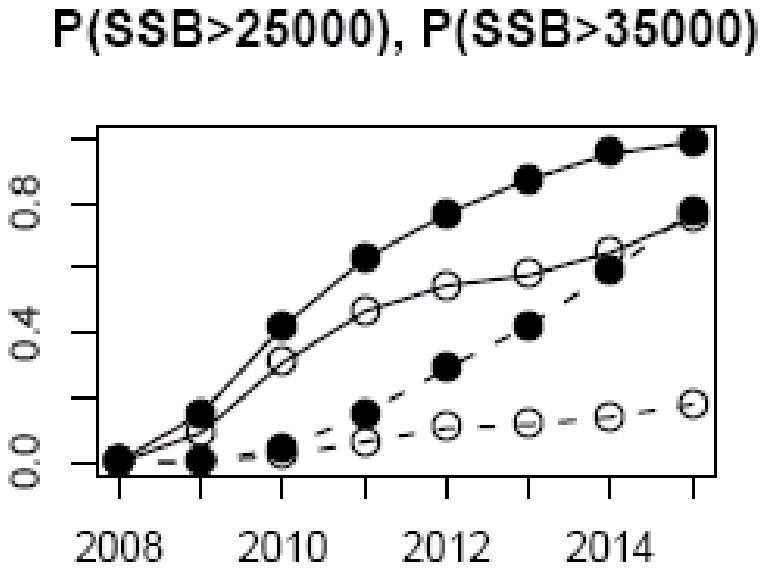
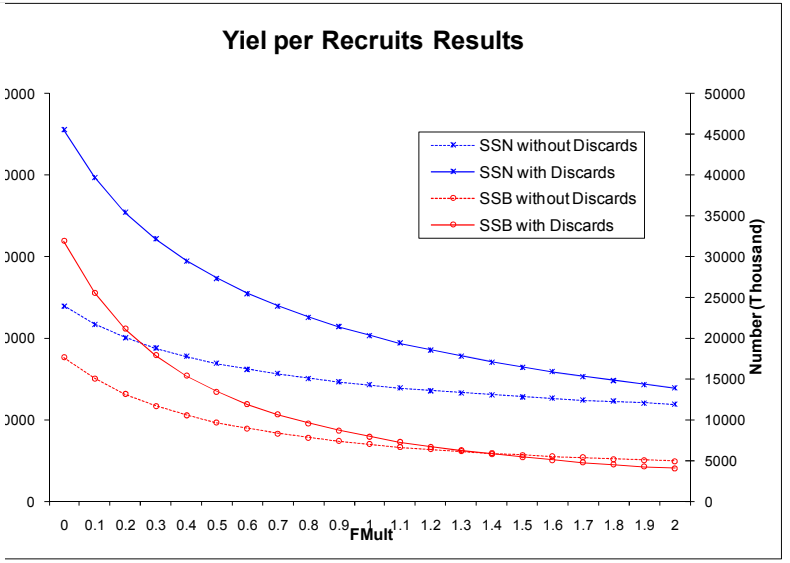
Progress on results

Improvements in assessment models





Current project status

- A new proposal is being prepared to demonstrate the effectiveness of the new tools and gears designed in avoiding discards and to assess the potential impact of the results obtained in fishing gear design and manufacturing process.

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Current project status

- Relevant Fishery Units not yet addressed will be target components of a new R&D project.

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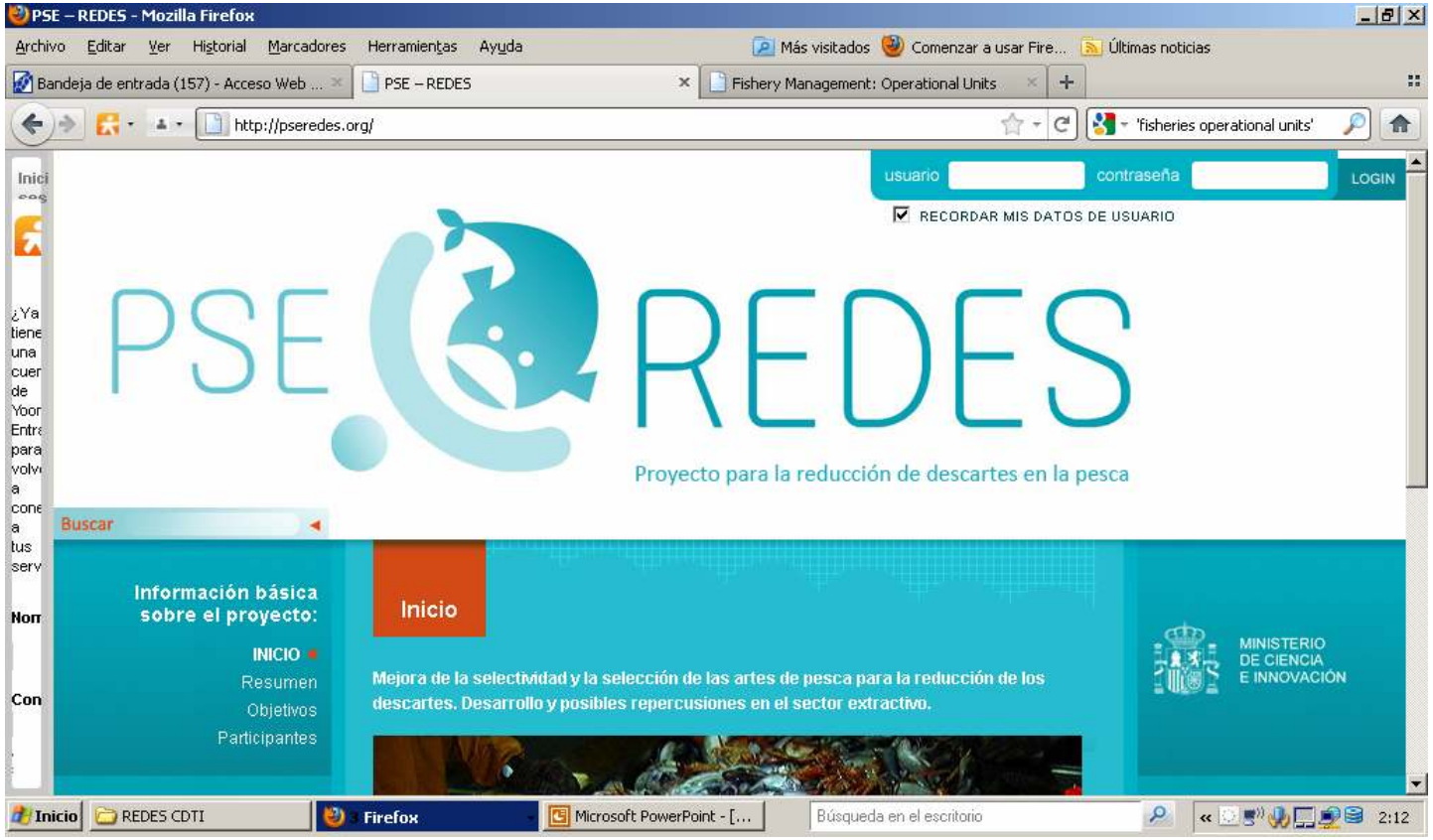

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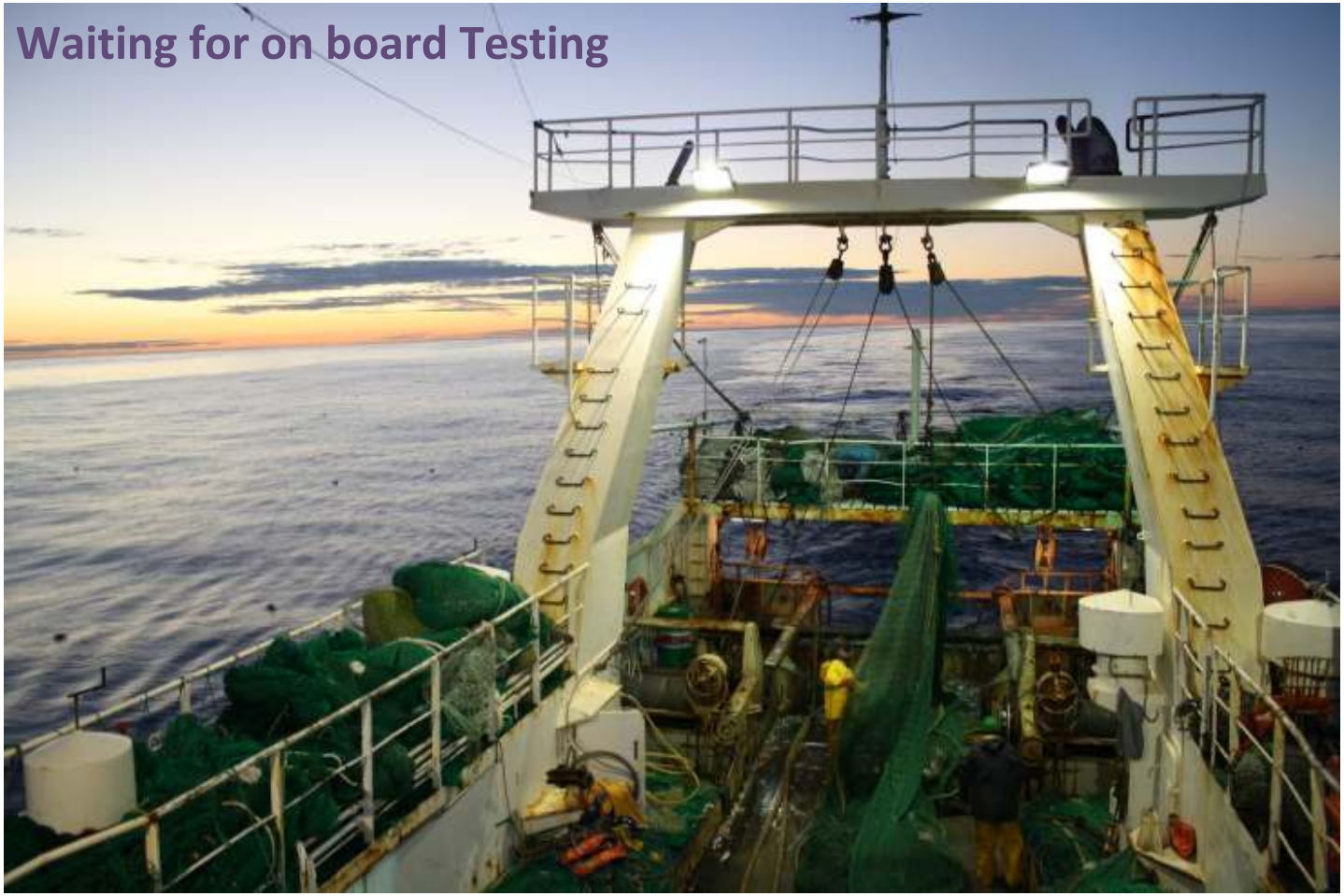

Thank you for your attention!!!

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