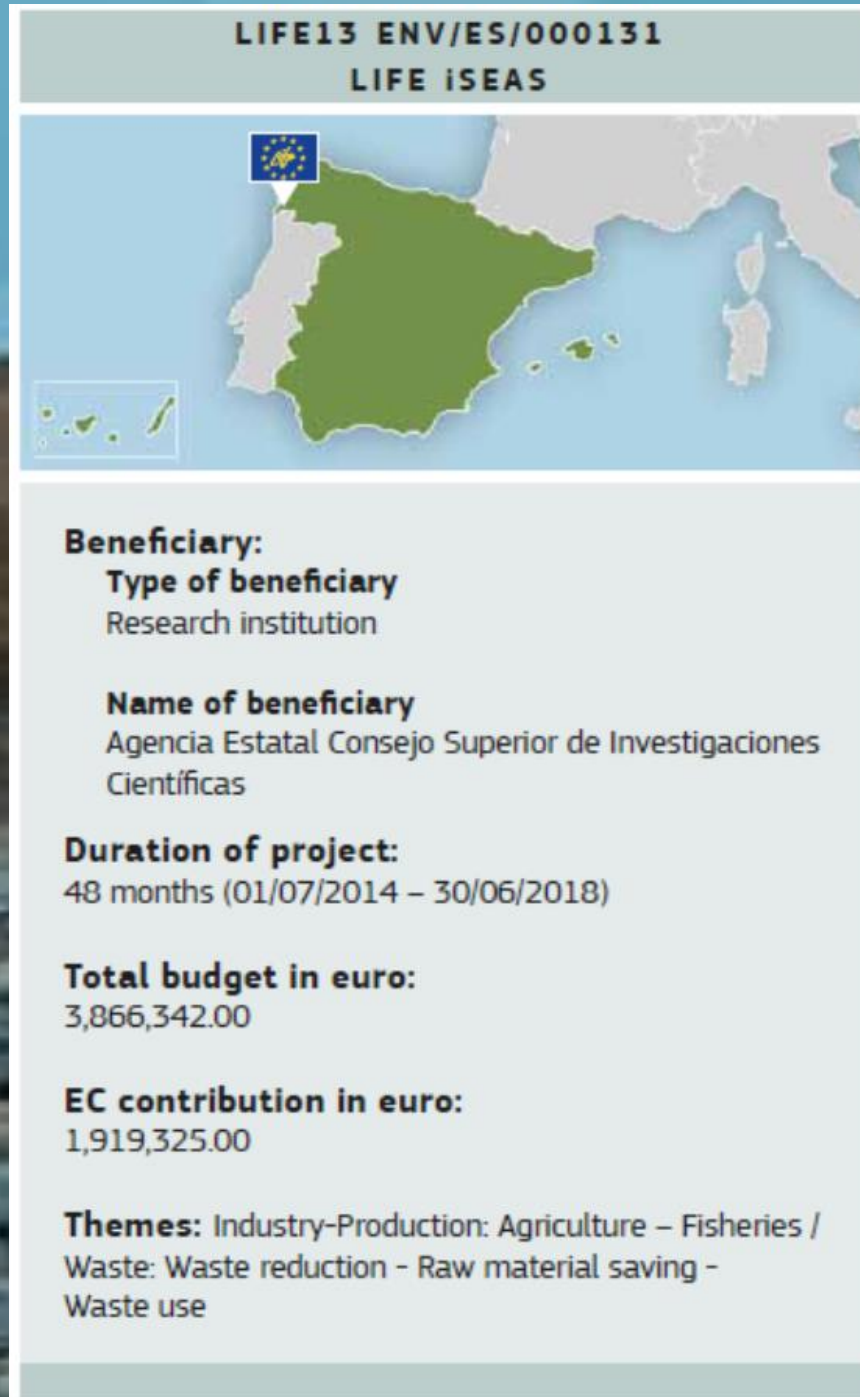


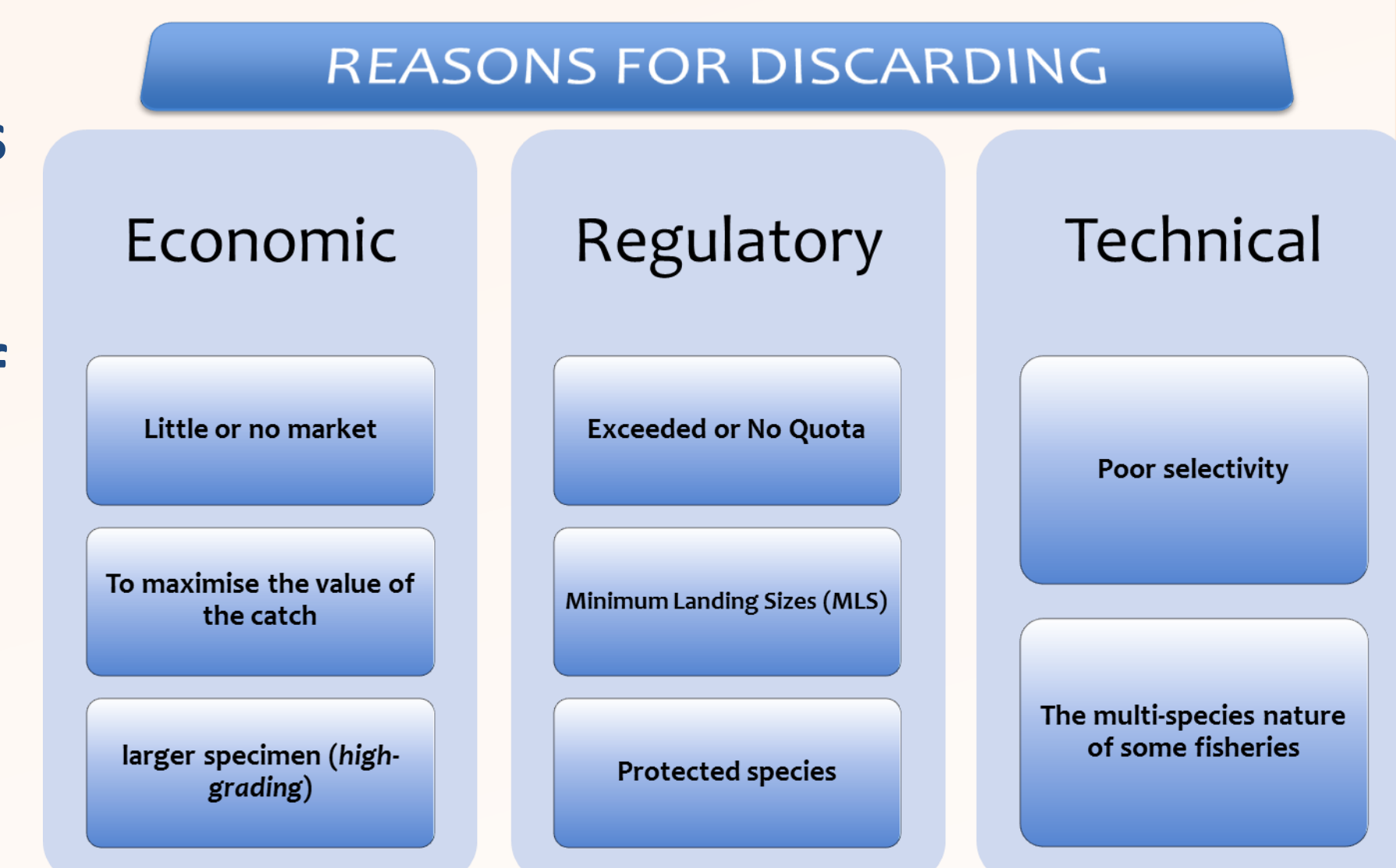
# LIFE iSEAS: Knowledge-Based Innovative Solutions to Enhance Adding-Value Mechanisms towards Healthy and Sustainable EU Fisheries

Ricardo I. Pérez-Martín\*, Luis T. Antelo, Antonio A. Alonso  
Food Science and Technology, IIM-CSIC; Eduardo Cabello 6, 36208. Vigo (Spain)  
E-mail: ricardo@iim.csic.es



## 1. INTRODUCTION

- Discards** are one of the most important issues in fisheries, both from an socio-economic and environmental point of view. They are defined by the FAO as “*the portion of the total organic material of animal origin in the catch, which is thrown away or dumped at sea for whatever reason. It does not include plant materials and post-harvest waste such as offal*”.
- It is a fact that any fishing operation has an unavoidable percentage of discards, from long-liners (2-10%) to trawlers (up to 90%), for a total of up to 7 millions of tons/year of discards.
- Discards constitute a purposeless waste of valuable marine resources which plays an important role in the depletion of marine populations.
  - Ecological adverse impacts:**
    - Changes in the ecosystem and in the overall structure of trophic webs take place.
    - Discarding of juveniles of target species results in a future reduction of spawning biomass.
    - Discarding of mature specimen of target species immediately reduces the spawning biomass of the stock.
  - Socio-economic adverse impacts:**
    - Fish which is killed without contributing to the income to the sector will not contribute to the income in the future either (non-discarded fish will be a resource in the future).
    - Fishing industry is affected in the longer term since it is dependent on a healthy marine ecosystem.



## 2. WHY LIFE iSEAS?

- Discards are considered as an **unacceptable waste of resources** and a *New Common Fisheries Policy (CFP)* has been set up by the European Commission to mitigate and prohibit them: Regulation (EU) 1380/2013 of the European Parliament and of the Council of 11 December 2013
- In this new legal framework defined by the new CFP, the **pursued objectives** are:

Reduce/Eliminate discards (by improving fishing selectivity, avoiding non-targeted species zones or seasons).

Make the best possible use of unwanted biomass in a sustainable manner and avoid its waste, also reducing the costs derived from shortage the storage capacity in the vessel
- The **main objective of LIFE iSEAS** is to demonstrate that a sustainable scenario (in terms of biological and socio-economic indicators) of the EU fisheries is possible through the enhancement of the real application on the fishing sector of existent knowledge and innovative solutions on discards reduction and management



### Efficient Valorisation

Nowadays, a quite large amount of fishing organic matter is going to produce fish meal/oil, generating products of low-medium value.

If the discards can be kept on board and landed, we think that is an **opportunity to use that biomass in a more optimal/efficient way**, increasing the socio-economic benefits.

### Demonstration Character

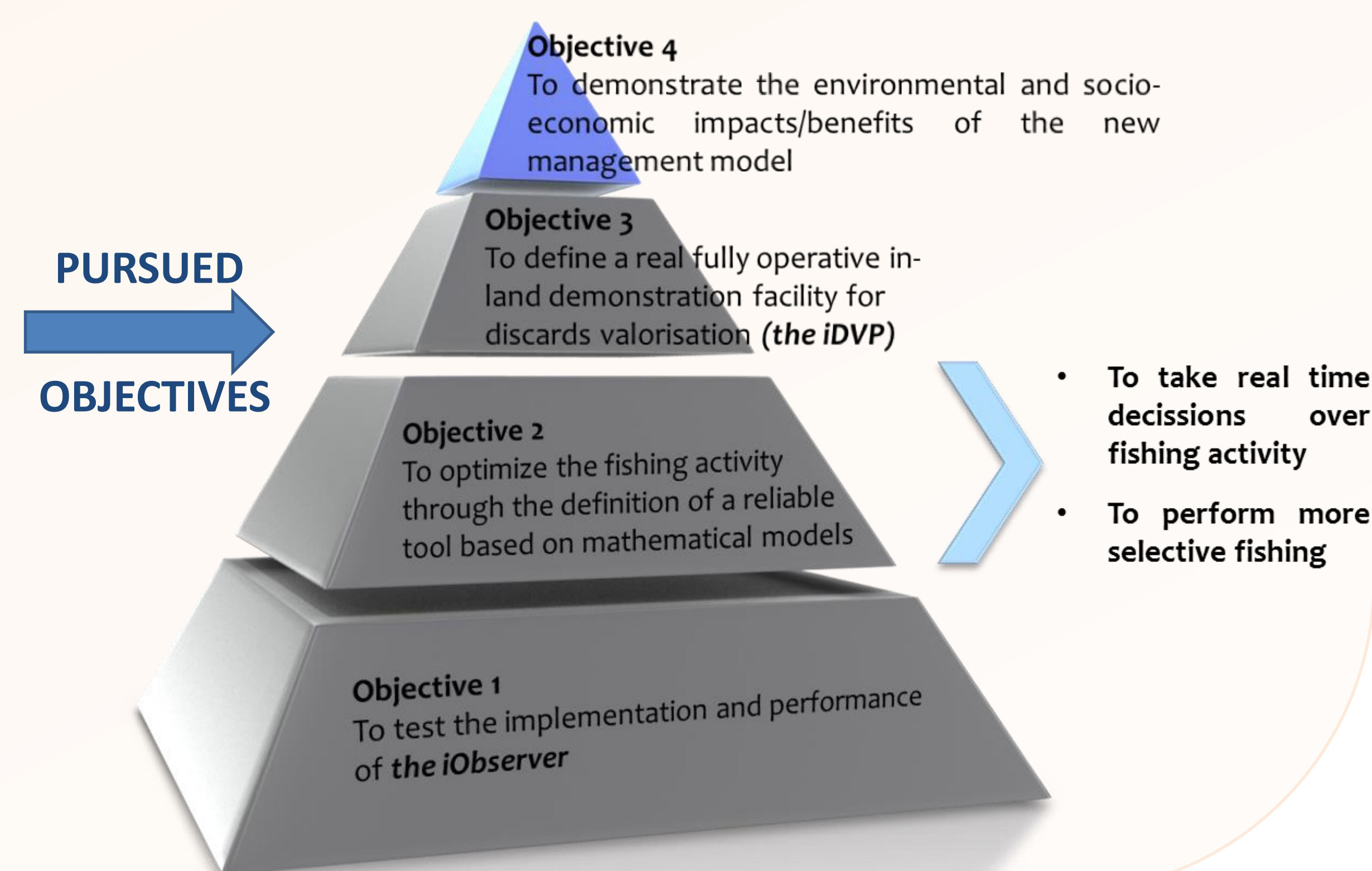
It is possible to **demonstrate the validity of the proposed approach** to guarantee the sustainability of fisheries only by including on it:

- Accurate data of discards types, volumes and fishing zones.
- Problems related to management of discards.
- Technical procedures to obtain more specific products.
- Socio-economic aspects related to the different steps in the value chain.

### Fishing patterns

If the areas with higher discards levels (no commercial, no quota, no size) are precisely known in real time, other vessels, working in the area, would surely try to avoid these specific zones, so **reducing the total catch of discards**

### THE LIFE iSEAS PARADIGM



## 3. EXPECTED RESULTS

- A **complete assessment of the actual situation of discards** issues on selected fisheries, focusing on socio-economic implications/impacts that the new CFP will have on the fishing sector.
- A system able to perform the work of a human observer (identifying class/quantity of discarded/target catch) on-board, without interfering the activity of fishermen: *the iObserver*.
- A data and metadata model and a complete range of OGC services (*Open Geospatial Consortium*) for acquired discards information integrable on a **fish discards Spatial Data Infrastructure (SDI)**, satisfying INSPIRE Directive.
- A **powerfull modelling tool** to analyze the spatio-temporal conditions of considered fishing areas in terms of discards/stock status.
- A real pilot service located on the Port of Marín facilities (Galicia, NW Spain) to valorise, manage and trade discards landed: *the iDVP*.
- An **exhaustive analysis of the environmental and socio-economic impacts** of proposed solutions over all fishing sector agents as well as over the whole region (Galicia), paying special attention on capacity building for better management/reduction of discards.

## REFERENCES

- [1] FAO (2010). Report of the technical consultation to develop international guidelines on bycatch management and reduction of discards. Rome: FAO, Fisheries and Aquaculture Report 957.
- [2] Alonso, A., Antelo, L., Otero, I., & Pérez- Martín, R. (2010). Contributing to fisheries sustainability by making the best possible use of their resources: the BEFAIR initiative. Trends in Food Science & Technology, 21, 569-578.
- [3] European Commission (2013). Regulation 1380/2013 on the Common Fisheries Policy.

## ACKNOWLEDGEMENTS

The authors thank the financial support received from the LIFE+ Program of the European Union (LIFE Project – LIFE13 ENV/ES/000131). The authors want also to acknowledge the collaboration of the different R&D groups belonging to LIFE+ iSEAS partners:

