

# INDIVIDUAL TRANSFERABLE EFFORT QUOTA IN THE MEDITERRANEAN DEMERSAL TRAWLER FISHERY: IMPACT ASSESSMENT EVALUATION OF A POSSIBLE FUTURE APPLICATION

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## INTRODUCTION

The proposal for the implementation of Individual Transferable Effort Quota (ITE) in the Mediterranean demersal fishery, in particular in GSA 17, answers to the need of a change in the current management system that has not proved to be completely successful (the main demersal target species - *Merluccius merluccius*, *Mullus barbatus*, *Solea solea*, *Squilla mantis* and *Nephrops norvegicus* - are overexploited, STECF 2013). The current management system is made up of a number of measures including a generalised license system (where no new licenses can be released), technical measures (distance from the coast, mesh size and landings size), area (MPAs) and temporary closures (usually in the summer season, changing according to areas). Considering that neither catch quota nor individual transferable quota (ITQ) can easily be implemented (multi-specific fishery), a possible future and alternative management of the fishery could be based on the use of the days or hours at sea, possibly taking into account transferability. We are then talking about ITE as an alternative management tool for mixed demersal fishery into the Mediterranean sea. The poster presents an overview of the work done by authors focusing the attention on the mixed demersal fishery in GSA17 (Adriatic sea). The analysis is still in progress and is based on the mutual collaboration of two different EU funded projects, namely EcoFishMan and SOCIOEC. The case study has been analysed into the two project from a different angle:

- **EcoFishMan (www.ecofishman.com)** has provided the methodological approach for the qualitative analysis (stakeholder contacts, identification of objectives, definition of Outcome Targets).
  - **SOCIOEC (www.socioec.eu)** is providing the methodological approach for the Impact Assessment (IA) analysis (ongoing).
- In few words the two projects are acting as complementary in relation to the case study under analysis.



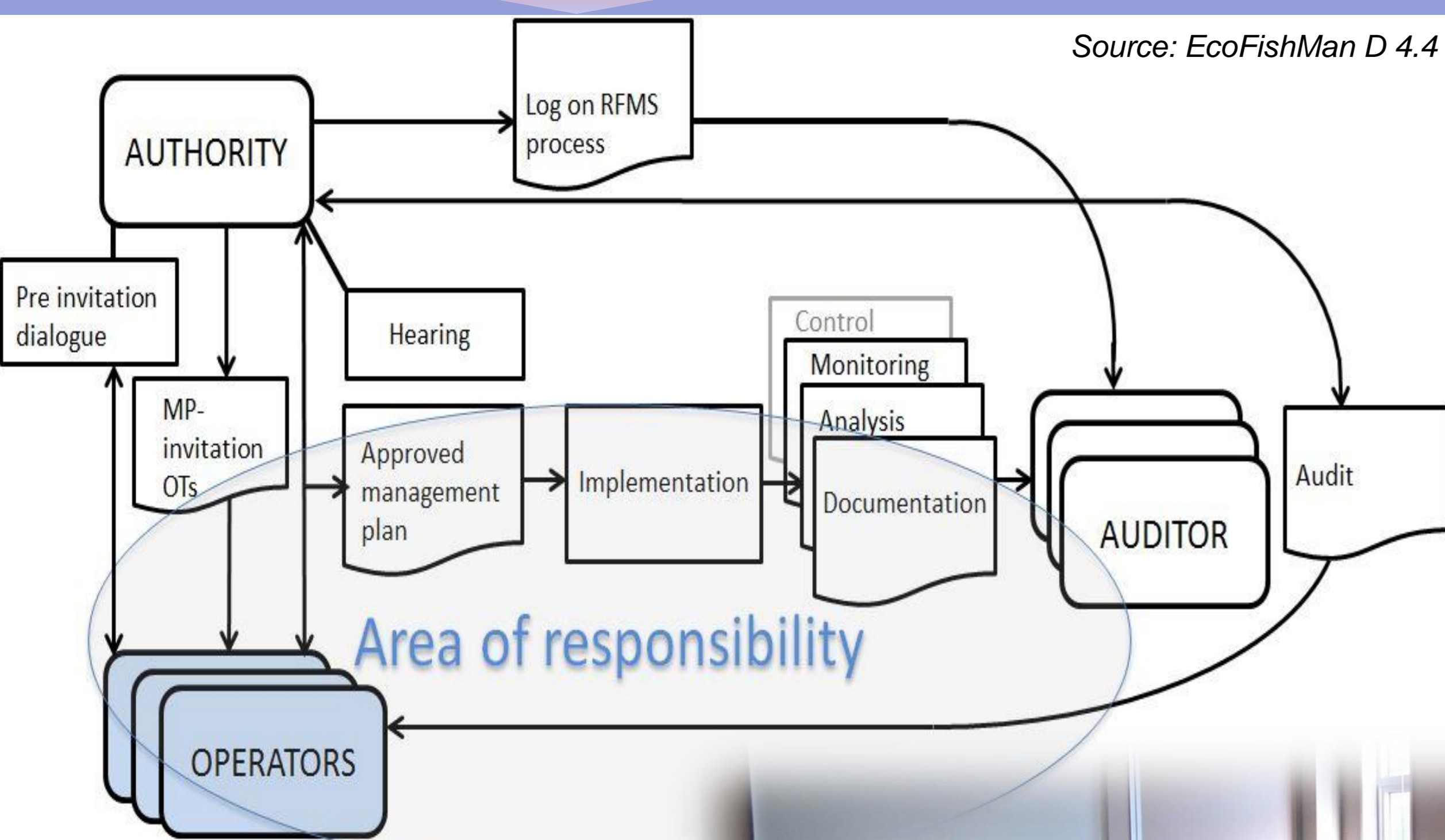
## A NEW MANAGEMENT SYSTEM: HOW TO DEFINE IT?

The definition of the alternative future management system based on the ITE for the mixed demersal fishery in GSA 17 has been pursued by applying the methodological approach provided by the EcoFishMan project. The purpose of the EcoFishMan project has been to develop an alternative to the existing fisheries management systems in Europe, namely the Responsive Fisheries Management System (RFMS). RFMS transfers responsibility for fisheries management to resource users, provided that they document that they can achieve specified management objectives. **Authority:** entity entrusted with the final responsibility for resource management and specifies the measurable objectives (outcome targets) to be reached in a given context. **Operator:** organised group of resource users (e.g. association of fishermen with fishing rights in a given fishery). **Auditor:** evaluates whether the contract between the authority and the operator has been fulfilled in the sense that the outcome targets listed in the MP have been achieved.

Species	F <sub>current</sub> (2011)	F <sub>0.1</sub> as proxy of F <sub>MSY</sub>
<i>Merluccius merluccius</i>	2.02	0.21
<i>Mullus barbatus</i>	0.823	0.36
<i>Solea solea</i>	>0.73 and <1.43	0.26
<i>Squilla mantis</i>	VIT=0.93; VPA=1.00	0.50
<i>Nephrops norvegicus</i>	Female=0.685 Male=0.870	Female F <sub>max</sub> = 0.25 Male F <sub>max</sub> = 0.20

## WHAT "IF" ITE WILL BE REALLY IMPLEMENTED IN GSA 17

According to the most recent EU guidelines (EU, 2009), the implementation of any new policy option should be accompanied by an Impact Assessment (IA) of the likely ecological, economic and social impacts. The IA of the potential implementation of ITE in the mixed demersal fishery of GSA 17 is based on the methodological approach developed within the SOCIOEC project. The IA is based on the definition of scenarios (including the baseline or status quo).



The result of the application of the RFMS approach has been the definition of a new potential management plan containing the definition of specific objectives (outcome targets, OTs) concerning the possible future implementation of the ITE in GSA 17. OTs have been identified by mean of consultation with stakeholders.



Factors	Factors 0	Factor 1	Factor 2	.....	Factor n
Alternative 0	Status quo (no ITE, only technical measures and temporary closures). Oil price and interest rate at the present level	Status quo (no ITE, only technical measures and temporary closures). x% change in the fuel price	Status quo (no ITE, only technical measures and temporary closures). x% change in the interest rate	.....	.....
Alternative 1	ITE level 1 (e.g. 140 days at sea) with non change in the key external factors	ITE level 1 (e.g. 140 days at sea) with x% change in the fuel price	ITE level 1 (e.g. 140 days at sea) with x% change in the interest rate	.....	.....
Alternative 2	ITE level 2 (e.g. 130 days at sea) with non change in the key external factors	ITE level 2 (e.g. 130 days at sea) with x% change in the fuel price	ITE level 2 (e.g. 130 days at sea) with x% change in the interest rate	.....	.....
.....	.....	.....	.....	.....	.....
Alternative n	.....	.....	.....	.....	Scenario n.n

## IA TOOL FOR ASSESSING ITE IN GSA17

In the SOCIOEC project scenarios are projected in the future by using mainly bio-economic models. As for the implementation of ITE in the mixed demersal fishery in GSA17 the HDA model has been selected. HDA model comprise four models developed since 2007 to generate future projections based on a set of biological and socio-economic indicators for Mediterranean fisheries. These models follow a prevalently economic approach to modelling, where the economic equations are mainly based on the economic module of the BIRDMOD model (Accadia and Spagnolo 2006) and the BEMTOOL model (Accadia et al, 2013).

Dimension	General objective	Indicator	Outcome Targets
Biological	Promote sustainable utilization for main target species	F <sub>0.1</sub> as proxy of F <sub>MSY</sub>	European hake ( <i>Merluccius merluccius</i> ): F <sub>0.1</sub> = 0.21
			Red Mullet ( <i>Mullus barbatus</i> ): F <sub>0.1</sub> = 0.36
			Common sole ( <i>Solea solea</i> ): F <sub>0.1</sub> = 0.26
			Mantis shrimp ( <i>Squilla mantis</i> ): F <sub>0.1</sub> = 0.50
Economic	Promote a profitable fishing industry	ROFTA	ROFTA - long-term government bonds rate % (yearly average) > 0
			EBITDA
Social	Promote social stability	Average wage	Average wage / National minimum wage ≥ 1
		Discard rate of by-catch species	The average discard rate (in weight) in the first 5 years of the MP must be less than 75%, and 50% in the following 5 years
		By-catch of protected species	The average by-catch rate (in number) of cetaceans and sea turtles must be reduced year by year.

