

DISCARDS IN MEDITERRANEAN SEA

Problems and questions.

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HCMR Coordinated or participated in the most Mediterranean projects related to Discards

- ✓ 1994- 1996: “Analysis of the trawls’ discard operation in the Central and Eastern Mediterranean sea.” Project n° MED 94/065, GR, I.
- ✓ 1996-1998: “Analysis of the trawls’ discard operation in the Central and Eastern Mediterranean sea.” Project 95-061, 95/C 76/15. GR, I.
- ✓ 1998-2000: “Analysis of the trawls’ discard operation in the Central and Eastern Mediterranean sea.” Project 97-0044.
- ✓ 2001-2002: “Collection and management of data from commercial fisheries in Greece”
- ✓ 2003-2006, 2008: “Data Collection Regulation”, E.U.
- ✓ 2009-2012: BADMINTON: Bycatch and Discards: Management, Indicators, Trends and Location (MariFish project)
- ✓

The thoughts that will be presented are based on several scientific publications

- ✓ Machias A, V. Vassilopoulou, D. Vatsos, P. Bekas, A. Kallianiotis, C. Papaconstantinou and N. Tsimenides. (2001). Bottom trawl discards in the N. E. Mediterranean Sea. *Fisheries Research*. 53: 181-195.
- ✓ Machias A, V. P. Maiorano, Vassilopoulou, A. Tursi, C. Papaconstantinou and N. Tsimenides. 2004. Discarding length of commercial trawl species in eastern Mediterranean. *Fisheries Research*. 66: 213-222
- ✓ Tsagarakis, K., A. Machias, M. Giannoulaki, S. Somarakis, I. Karakassis. 2008. Trends in metrics of fish community for bottom trawl discards in a Mediterranean ecosystem. *Journal of Marine Science*, 65: 559 – 550
- ✓ Tzanatos, E., Somarakis, S., Tserpes, G., Koutsikopoulos, C., 2007. Discarding practices in a Mediterranean small-scale fishing fleet (Patraikos Gulf, Greece). *Fisheries Management and Ecology* 14, 277-285
- ✓ Damalas, D., Vassilopoulou, V., 2011. Chondrichthyan by-catch and discards in the demersal trawl fishery of the central Aegean Sea (Eastern Mediterranean). *Fisheries Research* 108, 142-152
- ✓ Tsagarakis K., Vassilopoulou, V., Kallianiotis, A., Machias, A. 2012. Discards of the purse seine fishery targeting small pelagic fish in the Eastern Mediterranean Sea. *Scientia Marina*. 76 (3) , pp. 561-572.
- ✓ Damalas D, Vassilopoulou V (2013) Slack regulation compliance in the Mediterranean fisheries: a paradigm from the Greek Aegean Sea demersal trawl fishery, modelling discard ogives. *Fisheries Management and Ecology* 20:21-33

Description of the Discarding Status in Greece

Some necessary terminology clarifications:

Discards is the fraction of the total catch, the marine fauna, brought onto the deck of a fishing vessel and subsequently **returned to the sea**

We should also underline a **significant difference** between **Mediterranean** and **Atlantic** fishery, which usually produces confusions:

- ✓ **In Mediterranean** the discard fraction of undersized commercial species is about 15%-20% of the total catch, while the remaining are non commercial species.
- ✓ **In the Atlantic** the discarding fraction of undersized species usually is the main part of the total discards

The discarding fraction is about:

Trawlers (295 vessels): 35-42% of the total catch

Purse seiners (257 vessels): 2-4% of the total catch

Artisanal ($\approx 16,000$ vessels): 10-15% of the total catch



Trawlers: $\approx 20,000$ mt

Purse seiners: $\approx 2,200$ mt

Artisanal: $\approx 19,000$ mt

*Note that **only** the half of discards correspond to the undersized commercial species*

Some Important features of Greek (Mediterranean) fisheries

1. It is an oligotrophic area
2. Narrow continental shelf
3. Extent coast line (Greece has more than 16,000 Km of coast line) and each point of the coast line is practically a landing site
4. High biodiversity in a multispecies fishery (more than 150 species are caught)

All these features pose several questions and problems regarding the targets of the common fishery policy in the Mediterranean that should be encountered.

The Policy Targets

The obligation of Landing the discards quantities in the framework of the new CFP has three main targets

- 1. Minimizing the TACs by incorporating the discards*
- 2. Minimizing the unusable discard quantities*
- 3. Using the discard quantities to aquaculture*

The first target is irrelevant for the Mediterranean as there are no TACs except Bluefin tuna

An irrelevant issue that is not so irrelevant

Studies in Mediterranean oligotrophic systems revealed that in areas with high concentration of fish-culture farms (external input of energy) indicate

1. An increase of the total community biomass by 4 time
2. An increase of the landings by 2 times
3. No changes in biodiversity

Before – After
Near - Far

In the mesotrophic waters (Atlantic areas) the effect of aquaculture was neutral.

QUESTION No 1. What will be happen in a oligotropic ecosystem if we take away from the existing food web e.g. from Aegean 40, 000 mt more every year?

QUESTION No 2. Which will be the effect of this elimination especially on some protected species that feed on discard e.g. sharks and seabirds?

Other questions and problems raised ... for Mediterranean areas

There are several preliminary surveys regarding the possibility of the discard use for other issues than food (e.g. pellets for aquaculture).
The peculiarities of Greece and Mediterranean poses a series of problems.

- ✓ The **quantities are small** in absolute numbers
- ✓ The distribution of landing is **very disperse** and this poses problem of concentration for further uses of discards.
- ✓ The conditions for storage and preservation of discards in the land and possible dangers for public health
- ✓ The proposed policy in Mediterranean **targets the half of discards** (trawlers) because the discards of artisanal (other half) are even more distributed and referred in very small number per vessel and fishing day

- ✓ The problem of **illegal selling of undersized** commercial species will be increased, because partly, their dispose will become legal ... as discards
- ✓ The high diversity of the discard species poses the question for **unstable quality** and the nutritivity of the discard use as pellets for the aquaculture

As all these questions and problems are raised from the features of Mediterranean fisheries...

...We propose a series of surveys before the implementation of the new CFP in the area and a specific Mediterranean policy based on the results of these surveys

Five Key-studies before the implementation of the CMP of the discard in the Mediterranean

1. Study of the effect of discards “landing” in the **food web** of the oligotrophic Mediterranean ecosystem.
- 2 . Study of the effect on the **protected species** (sharks and birds)
3. Study on the **spatiotemporal variability** of the quality - nutritive value of discard and the potentiality to be used in aquaculture and support the respective industry
4. Study of the **cost for the concentration** and turn over of discards in order to support a respective industry
5. Alternative actions for overcoming the expected increase of the **illegal fishing and selling** of the undersize commercial species in a fishery without TACs.

A photograph taken from the deck of a ship during sunset. The sun is a bright yellow orb on the horizon, casting a shimmering path of light across the dark blue water. The sky is a gradient of orange and yellow. In the foreground, the white metal railing of the ship's deck is visible, along with a large satellite dish mounted on the structure. The overall mood is peaceful and serene.

Thank you for your time