



DEEPFISHMAN

**Case Study 3a
Red seabream in the Strait of Gibraltar**

Socio-economic study

**Institute of Economic Studies
University of Iceland**

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1 Introduction

This case study deals with the red (blackspot) seabream in the Strait of Gibraltar, ICES Subarea IX. The red seabream is found in the north-east Atlantic, from south Norway to Cape Blanc, in the Mediterranean Sea, and in the Azores, Madeira and Canary Archipelagos. Adult redfish normally grow to 20 to even greater than 60 cm in length and inhabit depths ranging from 300 to 700 meters. Red bream is a predator and its diet consists of different kinds of small fish, crustaceans, and mollusks. The red seabream fishery in the Strait of Gibraltar is an artisanal fishery. The vessels involved use the “*voracera*” gear, a local mechanized hook line baited with sardine. Fishing is carried out taking advantage of the turnover of the tides in bottoms from 200 to 400 fathoms.

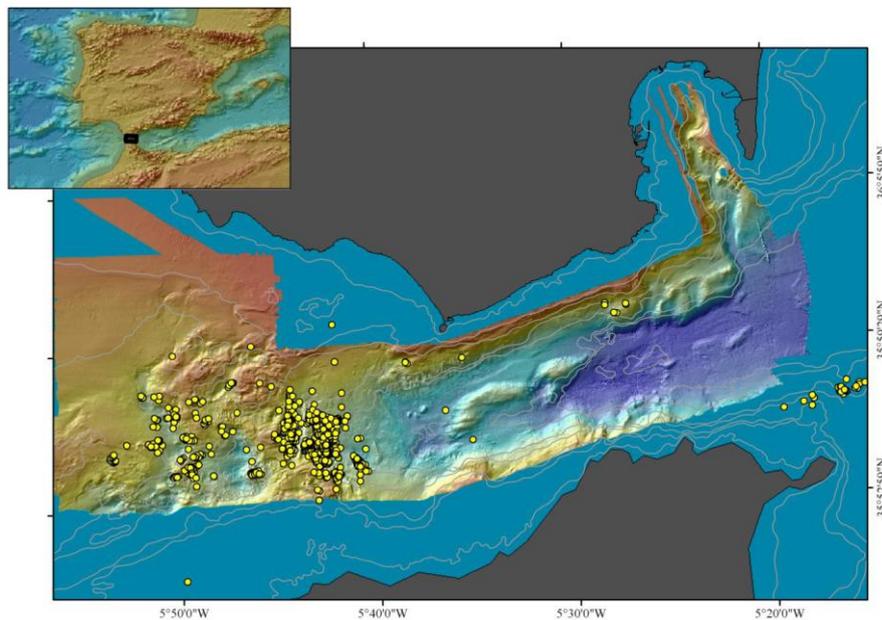


Figure 1 Strait of Gibraltar “*voracera*” fleet fishing grounds.
Source: DEEPFISHMAN Case Study 3 A Report (2010).

2 History of the fishery

The beginning of the seabream fishery in the Strait of Gibraltar can be traced back to the 1970s when vessels from Ceuta began to explore its potential. Vessels from Tarifa began to exploit the fisheries in the 1980s, and the fishery quickly grew in importance. Thus, whereas the proportion of red bream in captures in Tarifa amounted to only 10% in 1980, it had grown to 50% in 1990, and 93% of total landings in 1994. Spanish landings from this fishery cover almost the 70 % of the landings for the species in the ICES subarea IX.

Figure 2 shows footprint figures for 2008 for the Gibraltar Strait. Vessel monitoring system (VMS) data were processed, taking different parameters into account, such as time, position, speed and direction, to discriminate soak and trip positions. The chart therefore includes only those positions where the algorithm employed indicates that fishing actually took place. Most of the fishing takes place very close to the home ports of the *voracera*-fleet, Algeciras and Tarifa, especially the latter. The two ports are the only two authorized landing ports in the Strait of Gibraltar fishing plan regulatory area

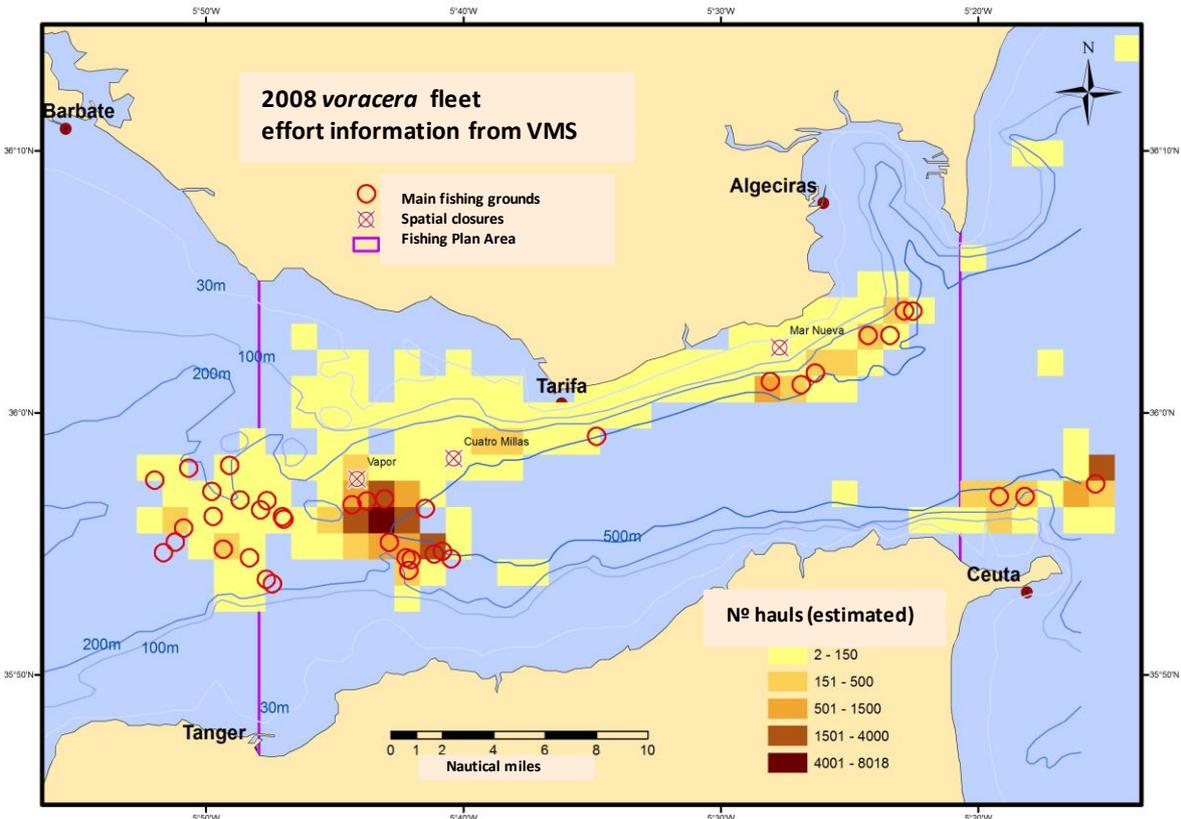


Figure 2: Footprint figure for 2008.
 Source: DEEPFISHMAN Case Study 3 A Report (2010).

3 Management

The red seabream fishery in the Strait of Gibraltar was managed as a regulated open-access fishery from its initial exploitation in 1983 until 1998. Since 1999, a local fishing plan came into operation which only allowed vessels to use “voracera”. Consequently, a provisional list of authorised vessels was established. The recovery plan set a maximum of 160 fishing days per boat, a maximum of five fishing days per week, and a ban on fishing during the months of

February and March. However, the days-at-sea cap was not binding. Thus, a study by Espino, del Hoyo & Sharp (2005), reveals that no vessel in their sample made more than 103 trips per year during the years of the first recovery plan (1999-2001). Landings for sale were only allowed in the ports of Algeciras and Tarifa. A new recovery plan was implemented by the Regional Government of Andalucía for the years 2003-2008. This plan includes such technical measures as closure of the fishing season during two and half months (15th January–31st March), minimum size of fish retained or landed (33 cm total length), authorised vessels list, hook size, maximum hooks per line (100), maximum number of lines per boat (30), and maximum number of automatic machines for hauling per boat (3). As before catches may only be landed in Algeciras and Tarifa. These kinds of measures are still currently in force in the 2010-2011 fishing plan.

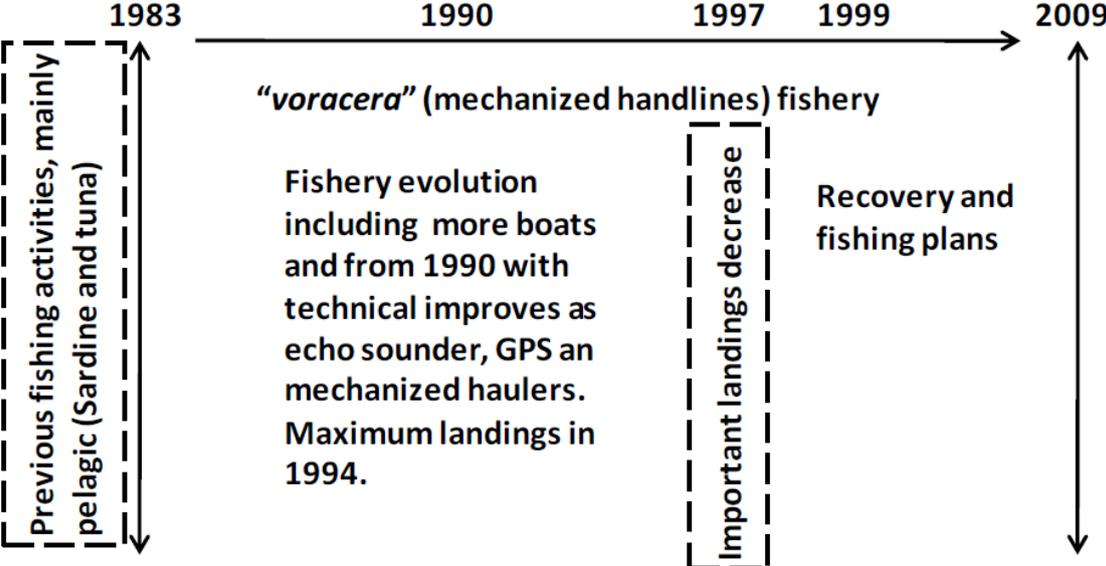


Figure 3 Management of the red bream “voracera” fishery.
 Source: DEEPFISHMAN Case Study 3 A Report (2010).

ICES recommends that catches in Subareas IX and X should be constrained to recent average catches (2003-2007) of 500 tons in Subarea IX and 1,050 tons in Subarea X, and to collect information that can be used to evaluate a long-term sustainable level of exploitation. These recommendations have though not be completely followed, as the EU has set a higher total allowable catch (TAC). Landings in ICES Subarea IX have in recent years been far smaller than TAC, but in 2009 the difference between the two was less.

The fishing takes place in Spanish and Moroccan exclusive economic zone (EEZ) waters with the European Union, within the framework of the Common Fisheries Policy, and national and local administrations being responsible for managing the stock.

4 Fleet

In 2007, there were 103 authorised vessels in the “voracera” fleet. The boats are small, on average 10 metres long and just over 6 GRT. The fleet has increased considerably since the beginning of the fishery in the early 1980s. In 1984, it included 55 vessels, but in 2001 their number had increased to 108 vessels. Trip lengths are no longer than a day and generally, each boat has a crew of 3-5 people. Not all vessels in the “voracera” fleet report catches of red seabream, and there are also some unauthorised vessels that land red bream.

Table 1 Summary statistics for the “voracera” fleet in 2007.
Source: DEEPFISHMAN Case Study 3 A Report (2010).

	Average	Min	Max	St. dev.
Length	9.8	5.5	15.0	2.1
Size (GRT)	6.4	1.1	19.0	4.2
Horse power (kW)	47.5	5.2	132.5	28.7

In a recent study, Espino, del Hoyo and Sharp (2005) analyse the development of capacity and capacity utilisation in the “voracera” fleet. They point out that uncontrolled entry into the fishery lead to increasing levels of effort during the period 1983-1995. Together with subsidies, this lead to overexploitation and declining profitability. However, increasing technical efficiency has increased the capacity of the fleet, and there are clear indications of significant overcapacity. The study indicates that reforms are needed to change the underlying institutional structure of the fishery, to reduce capacity and encourage further efficiency, and to create incentives for fishers to invest in the preservation of the fishery. Combining a property rights regime with a management system would, according to the authors, be the correct approach.

5 Labor

In 1986 there were 55 vessels in the fleet with a total of 185 crew members, whereas in 2001 the 108 vessels taking part in the fishery had a combined crew of 356 members. It is therefore likely that the current fleet employs 350-400 fishermen.

The owner of the boat is usually also the skipper, but in some cases the boat may be skippered by a close relative of the owner. Wages are usually based on some kind of share system.

Most fishermen in Tarifa belong to the Brotherhood of Fishermen (*Cofradia de Pescadores*) which carries out several functions related to the fisheries, such as where, how and when partners can fish, safety issues at sea, fish sales and resolves conflicts between fishermen. The Brotherhood also defends the interests of the fishing community.

6 Processing and markets

Catches are sold fresh in open auctions, organised by the Brotherhood of Fishermen. The largest share of the catches are then transported mainly to the North and the center of Spain and sold secondly there. Important markets are also found in other parts of Spain, as well as some other EU countries, such as Italy and Portugal.

Quantity sold has more than doubled from 2006 to 2009. The total value of the catch has also been rising steadily over the years, whereas average prices increased slightly over the period 2006-2008, but they declined considerably in 2009.

Table 2 Red seabream landings in Tarifa. Quantity sold and values.
Source: DEEPFISHMAN Case Study 3 A Report (2010).

	2006	2007	2008	2009
Quantity sold, tons	161.8	278.2	291.0	432.4
Value. € '000	2,546.3	4,432.6	4,876.8	5,777.1
Average price, € per kg	15.73	15.94	16.76	13.36

Catches are classified into four categories after size, with the largest fish generally fetching highest prices in auctions. However, catches is the second largest category are usually more expensive than the largest individuals. This is clearly revealed in Figure 4, which shows development of prices of the four catch classifications during the period 2007-2009. The strong seasonality of prices is also evident from the figure, with prices for the smallest fish usually higher during the summer, for example due to increased demand from restaurants. The largest two categories also show price fluctuations during Christmas time because the red

seabream is a traditional Christmas dish in several regions of Spain. During this time the largest category of catches becomes the most valuable category.

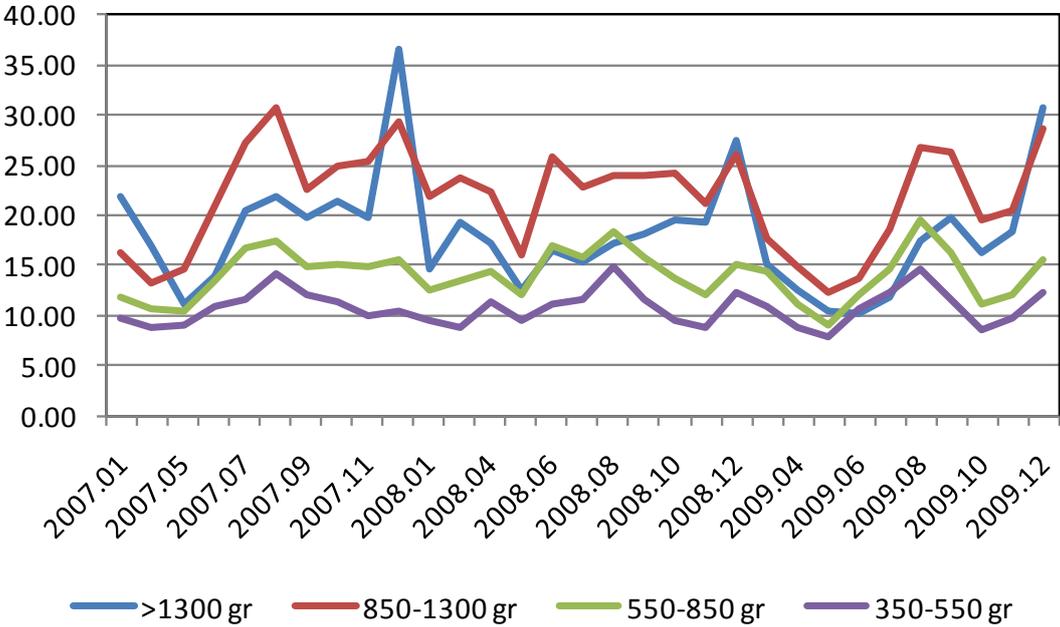


Figure 4 Average price of catch landed in Tarifa. € per kg.
 Source: DEEPFISHMAN Case Study 3 A Report (2010).

References

- Anon. (2010). Deepfishman, 2010. A FP7 Project: Management and Monitoring of Deep-sea Fisheries and Stocks. Case Study 3 A Report. Red Seabream in the Strait of Gibraltar. Unpublished manuscript.
- Espino, D.C, del Hoyo, J.J.G., & Sharp, B.M.H. (2005) Capacity and Capacity Utilization of the “Voracera” Fleet in the Strait of Gibraltar. *Marine Resource Economics*, Volume 20, pp. 367–384.