

## Fishery Fact Sheet

CECAF Fisheries Reports 2011

# Spain Bottom trawl black hake fishery - Senegalese waters, 2011

*Pêche démersale au merlus noir*

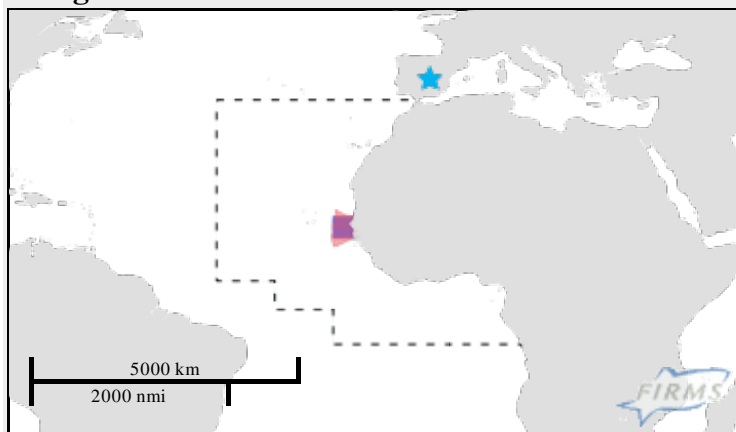
### Data Ownership

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**Fishery life cycle** This fishery terminated on 2006.

**Overview:** This was a very selective fishery that especially targeted black hakes (*M. polli* and *M. senegalensis*), which constituted very high proportion of the landings (Fernández et al., 2004; Diop et al., 2004), that oscillated between 78-99% of total landings. Both species appeared mixed in landings, due to their external similarity, being registered as *Merluccius spp.* However, as most of the fishery was carried out at very deep waters and in the southern distribution zone of *M. senegalensis* (which has a shallower distribution), most landings corresponded to *M. polli*. The fishery had a seasonal activity, operating during the periods when both species were most abundant, mainly between September and April, being November and March the months with the highest activity. Freezing was allowed since the Agreement of 1992. However, for commercial reasons, this was a typical wet-fish activity and freezing practically disappeared in 2000. The fleet evolved to smaller and more efficient vessels, which constituted more than a half of the fleet in 2001. The Spanish fleet left the Senegalese fishing ground in December 2005, before the end of the last Fishing Agreement in June 2006.

### Location of Spain Bottom trawl black hake fishery - Senegalese waters



#### Main layers

- FAO areas and their sub-divisions
- EEZ

#### Associated layers

### APPROACH: FISHING ACTIVITY

#### Fishing Activity

Fishing Gear: Bottom otter trawls  
 Type of production system: Commercial; Industrial  
 Fishery Area: Senegal; Atlantic, East ...  
 Seasonality: From September ...

#### Harvested Resource

Target Species: Senegalese hake; Benguela hake  
 Associated Species: John dory; Dogfish sharks, etc. nei; West African geryon ... [more>>](#)

#### Means of Production

Vessel Type: Stern trawlers wet-fish

★ Geographic reference

#### Intersecting layers

Intersecting: FAO major fishing areas

#### Base layers

200 nautical miles arcs

### Fishery Indicators

Nominal Effort: Number of vessels

Participation: Number of fishermen

Production: Landing Volume Total

**Geographic reference:** Spain

**Spatial Scale:** National

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## History

Spanish black hake fishery in North West African waters has been carried out since the decade of the '50s. At the beginning, the fleet was composed of side trawlers (called "bous"), mainly from Andalucía (S Iberian Peninsula). These trawlers were progressively extending their action ratio in their search for black hakes, finally reaching the Senegalese waters. First, these were fishing grounds of free access for the Spanish fisheries but from 1979 onwards, with the enforcement of the Law of the Sea, the Spanish fleets have been managed by fishing agreements between the Senegal and either Spanish or EU Administrations. There have been some periods with no fishery since 1988, when the first fishery agreement with the EU was signed. This was due to the absence of agreements during the negotiation periods before the renewal of the successive protocols.

## Fishing Activity

Type of production system: Commercial; Industrial

### Fishery Area

**Climatic zone:** Temperate; Tropical. **Depth zone:** Slope (200 m - 1000 m). **Horizontal distribution:** Neritic. **Vertical distribution:** Demersal/Benthic.

Geo References for: Senegal

### Senegal

Exclusive Economic Zone Areas (EEZ)	SEN - Senegal
FAO Fishing Statistical Subdivisions	34.3.12 - Atlantic, East central / 34.3.12

### More Geo References

The following area codes have been found as intersecting the location of Spain Bottom trawl black hake fishery - Senegalese waters

FAO Major Fishing Areas	34 - Atlantic, Eastern Central
Large Marine Ecosystem Areas (LME)	27 - Canary Current
	28 - Guinea Current

The Senegalese EEZ is dominated by several cyclonic gyres, including the Guinea Dome at 10°N, 20°W, driven by the North Equatorial Counter Current (Tomczak and Godfrey, 1994). Because the

cyclonic rotation induces upwelling (doming of the thermocline), these features are more productive than the surrounding waters. The productivity of the Senegalese waters is high during winter, as a result of river run-off after the rainy season, localized upwelling, and cyclonic eddies retaining productive waters. Around May, the hydrographic conditions off Senegal become less favorable, with SST rising towards ca. 25°C, stratification of surface water, and decreasing food availability (Zeeberg et al., 2008). The upwelling starts on the Senegalese continental shelf inducted by trade winds from November to January. Then, it extends from the North to the South coast, with a maximal intensity in March-April. Along the North coast, the upwelling localizes around Saint Louis, being extremely coastal and with maximal intensity in December-March. This marked seasonality of upwellings and the latitudinal displacement through the Mauritanian and Senegalese coasts produce important changes in the structure of the biological communities. In short periods (weeks), the system can alternate from a warm equatorial phase to a cold subtropical phase, this deriving in an alternated dominance between tropical and temperate communities (Meiners, 2007).

## Resources Exploited

Senegal hake, Benguela hake - Mauritania, Senegal and Gambia  
West African geryon - Morocco, Mauritania, Senegal and Gambia  
Other resources: Stocks of John dory, anglers, sharks and scorpionfishes.

## Target Species

### *Merluccius senegalensis*

FAO Names : en - Senegalese hake, fr - Merlu du Sénégal, es - Merluza del Senegal, ru - Мерлуза синегальская

### *Merluccius polli*

FAO Names : en - Benguela hake, fr - Merlu d'Afrique tropicale, es - Merluza de Benguela, ru - Мерлуза бенгальская

Adults and juveniles

## Associated Species (Bycatch)

### *Zeus faber*

FAO Names : en - John dory, fr - Saint Pierre, es - Pez de San Pedro, ru - Солнечник обыкновенный

### *Squaliformes*

FAO Names : en - Dogfish sharks, etc. nei, fr - Squaliformes nca, es - Squaliformes nep

### *Chaceon maritae*

FAO Names : en - West African geryon, fr - Géryon ouest-africain, es - Gerión de Guinea

### *Scorpaenidae*

FAO Names : en - Scorpionfishes nei, fr - Rascasses, etc. nca, es - Rascacios, gallinetas nep, ru - Скорпеновые

Adults and juveniles

## Discarded Species (Bycatch)

### *Lophius vaillanti*

FAO Names : en - Shortspine African angler, fr - Baudroie africaine, es - Rape africano, ar - عفریت البحر - إفريقي, zh - 短鳍鮫鰈

### *Lithodidae*

FAO Names : en - King crabs, stone crabs nei, fr - Crabes royaux, etc. nca, es - Centollas, centollones per, ru - Крабoidовые

*Todarodes sagittatus*

FAO Names : en - European flying squid, fr - Toutenon commun, es - Pota europea

*Todaropsis eblanae*

FAO Names : en - Lesser flying squid, fr - Toutenon souffleur, es - Pota costera, ar - نو الأذرع العشر طائر أدنى, zh - 小柔鱼

*Trachyrincus scabrus*

FAO Names : en - Roughsnout grenadier, ru - Жесткокрыл

*Nezumia spp*

FAO Names : null

*Coelorinchus caelorhincus*

FAO Names : en - Hollowsnout grenadier, fr - Grenadier raton, es - Granadero tristón

*Malacocephalus laevis*

FAO Names : en - Softhead grenadier

*Malacocephalus occidentales*

*Munida spp*

FAO Names : null

Commercial fish species as *Lophius vaillanti*, some species of sharks, rays and Scorpenidae (among other fishes). Crustaceans belonging to the family Lithodidae; and small quantities (in weight) of cephalopods as the flying squids *Todarodes sagittatus* and *Todaropsis eblanae*. The most abundant non commercial species are fishes belonging to the Family Macrouridae (*Trachyrincus scabrus*, *Nezumia spp*, *Coelorinchus caelorhincus*, *Malacocephalus laevis*, *M. occidentales*, among others) and crustaceans of the Family Galatheidae (*Munida spp*).

Juveniles (commercial species) or unspecified (other species)

**Related Fisheries - Fishery(ies) switching activity seasonally or targeting the same stock**

Spain Bottom wet fish trawlers black hake fishery - Mauritanian waters

Spain Longliners black hake fishery - Mauritanian waters

Spain Bottom wet fish trawler black hake fishery - Moroccan Atlantic coast waters, South 29°N

**Vessel Type**

Stern trawlers wet-fish

**Flag State**

 Spain

Average characteristics of these vessels during the period 1996-2005 were 283 GRT, 943 h.p and 36 m length.

**Catch Handling and Processing Equipment**

Preservation in ice and freezing (disappeared in 2000)

**Crew**

16-18 persons (Spanish and Mauritanian nationalities) (2009)

## Fleet segment

Bottom otter trawl for demersal fish with 70 mm minimum mesh

At the beginning, the fleet was composed of side trawlers called “bous”. These were mainly based in the Port of Cádiz (S Iberian Peninsula), which constitutes the traditional main market for landing and commercialization of these species. Through the years, this old fleet was scrapped, being gradually substituted by more modern vessels that were constructed in 2000. These new vessels were mainly based in Marín, La Coruña (in Galicia, NW Iberian Peninsula) and Las Palmas (Canary Islands).

## Fishing Gear

Bottom otter trawls

This gear operates with polyvalent trawl doors. The net is constructed in conventional polyethylene, with thread thickness of 3-4 mm, being very elastic and very resistant to abrasion. The mesh size is 80 mm, excepting the cod-end, which is 70 mm and has rhombic-shape.

## Seasonality

From September to April

## Trip Duration

8 fishing days

## Ports

Cádiz (S Iberian Peninsula), Marín, La Coruña (Galicia, NW Iberian Peninsula) and Las Palmas (Canary Islands).

## Fishery Indicators

Type	Measure	Value	Unit	Time period
Nominal Effort	Number of vessels	2	vessels	2005
Participation	Number of fishermen	32-46	persons	2009
Production	Landing Volume Total	1065	tonnes	2002-2005
	Landing Volume Merluccius spp.	1038	tonnes	2002-2005

## Post Harvest

### Fish Utilisation

Consumption

### Markets

Cádiz (Spain)

# Management

Management unit: No

## Jurisdictional framework

Management Body/Authority(ies): Ministère de l'Economie Maritime des Transports Maritimes de la Pêche et de la Pisciculture

**Mandate:** Management.

Area under national jurisdiction: Senegal

Maritime Area: Exclusive Economic Zone Areas (EEZ).

Management Body/Authority(ies): European Union

**Mandate:** Flag state responsibility for its fishing vessels operating in foreign area under national jurisdiction.

Area under national jurisdiction: Senegal

Maritime Area: Exclusive Economic Zone Areas (EEZ).

## Management Regime

Council Regulation (EC) No 2323/2002 of 16 December 2002 on the conclusion of the Protocol setting out the fishing opportunities and the financial contribution provided for by the Agreement between the European Economic Community and the Government of the Republic of Senegal on fishing off the coast of Senegal for the period from 1 July 2002 to 30 June 2006 (OJ L 349, 24.12.2002, p. 46–65). Management measures of the Spanish bottom trawl black hake fishery in Senegalese waters were included in the Fisheries Agreement between the European Community and the Republic of Senegal. After the end of the last Agreement (OJ L 349, 24.12.2002, p. 46–65) the Spanish fisheries in Senegalese waters were closed. Management measures described below are those included in this last Fishery Agreement.

## Management Methods

### Conservation and management measures with focus on Effort control (licences system) and catch control

- *Aquatic species-related measures*  
Limitation of by-catches: 7% crustaceans and 7% cephalopods (last Fishery Agreement).  
Prohibition of catches of *Cetorhinus maximus* (bашin shark/pèlerin), *Carcharodon carcharias* (great white shark/grand requin blanc), *Carcharias taurus* (sand tiger shark/requin taureau) and *Galeorhinus galeus* (tope shark/requin-hâ).
- *Gear-related measures*  
Gear type (doubling of the cod-end prohibited, doubling of the twine forming the cod-end prohibited) and mesh size (minimum 70 mm).
- *Vessel-related measures*  
Access control: Vessel size (Maximum 3 000 GRT/month as annual average for both longliners and bottom trawlers under the fishing category “Deep sea demersal bottom trawl and longline fishery, with no landings in Senegal”).
- *Fishing activity-related measures*

Licences; Vessel number (maximum 3 000 GRT/month as annual average for both longliners and bottom trawlers under the fishing category “Deep sea demersal bottom trawl and longline fishery, with no landings in Senegal”), closed area (out of the fishing area established by the Agreement) and closed season (Two months: May-June).

### **Related Fisheries - Fishing activity(ies) managed under the same management unit or being ruled by the same fishing agreement**

Spain Bottom trawl octopus and cuttlefish fishery - Senegalese waters

Spain Freezer bottom trawl shrimp fishery - Senegalese waters

More information on fisheries legislation at: FAOLEX legislative database

## **Source of Information**

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