DESCRIPTION OF THE SPANISH LONG-LINER FISHERY
IN DIVISION VIIIa,b.

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ABSTRACT

This work describes the Spanish long-line fleet, fishing in VIII a and VIII b ICES divisions and which have its bases in the Cantabrian Sea ports, from Tapia de Casariego to Fuenterrabía. The characteristics of the gear are described and some information is given about the transformations of other vessels into long-liners; quarterly catch composition; evolution of the catches and the individual mean weight in the catches for trawl and long-line from 1980 to 1986 as well as length distribution for long-line in the same period.

RESUME

Ce document décrit la flottille de palangre Spagnole, qui pêche dans les divisions VIIIa,b du I.C.E.S. et qui ont son port d'attache aux ports de la mer Cantabrique, depuis Tapia de Casariego jusqu'à Fuenterrabía. On décrit l'engin et on donne l'information des transformations d'autres engins en palangre; composition des débarquements trimestriels; évolution des captures et poids moyens du chalut et du palangre depuis 1980 jusqu'à 1986; compositions en taille du palangre pour les dernières années et tendances de la pêcherie.
INTRODUCTION

The fleet which operates in VIIIa,b ICES divisions before 1975 was composed essentially by trawlers ("bakas", "bous", "trios" and "parejas") and some gill-neters. From this year, due to the adoption of Exclusive Economique Zone (EEZ) of 200 miles by the EEC member countries and the fishing licences system introduced since 1977, a new situation was created for this fleet.

Four alternatives appeared:

1) One part of the fleet, specially the older units, was withdrawn.

2) Other part was constituted in joint ventures, registering the boats under flags of the EEC countries, that allowed them the access to the grounds without problems.

3) Some of the vessels changed their fishing habits transforming their gears to long-line systems, because of the advantageous equivalence of the licences for long-line until 1982, the high yield obtained, the better quality and higher price of the catches compare to those taken by trawlers.

4) Finally, the remaining fleet continued working as before.

In the last meetings of the Hake Working Group it was recommended to make a detailed description of the changes suffered by the fleet fishing this species, because it could implicate modifications in the fishing pattern (Anon., 1986 and 1987).

The evolution of the trawl fleet is described in Cárdenas et al. (1987). The present paper has as objective to fulfil this requirement, describing the transformations of the fleet and giving the main features of this new gear in the area.
MATERIAL AND METHODS

All the fishing ports with long-liners working in EEC waters were visited.

Fig. 1. Cantabrian Sea Ports (N. Spain) base of the Spanish long-line fleet which works in ICES divisions VIIIa,b.

The data utilized have been: a) characteristics of the vessels (Horse power, GRT, transformation year, systems for navigation and location of fishing grounds; b) characteristics of the gear (no. of hooks, crew, bait, etc.); c) catch composition and seasonality from Ondarroa, Santander and Avilés of the year 1986; d) length distributions from 1981 to 1986 of the target species of this gear (data from Hake Working Group).
DESCRIPTION OF THE GEAR

The gear utilized by this fleet is called "piedra-bola". This long-line is directed to hake. The technical characteristics can be seen in the figure 2.

![Diagram of the "piedra-bola" gear](image)

30 hooks between "piedra" and "bola"
Length between hooks: 3.5 - 4 m.
Length of "pipios" 1.8 m.

Fig. 2. The "piedra-bola" gear. (González et al., 1986).

Usually the hooks utilized are of Mustand type (no. 2/0 and 3/0). They are baited with frozen sardine.

Total number of hooks displayed to vary between 10000 and 14000 units depending on the crew and size of vessel.

The gear is released from the stern at sunfall and raised at sunrise with the aid of a winch.
RESULTS

The long-line fleet is formed by three kind of vessels: a) transformed trawlers; b) fit purse-seiner; c) original long-liners. In the table I the characteristics of the fleet are described.

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>HP</th>
<th>GRT</th>
<th>NO.</th>
<th>AVERAGE YEAR OF TRANSFORM.</th>
<th>Σ HP</th>
<th>Σ GRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURSE SEINE</td>
<td>391*</td>
<td>104*</td>
<td>9</td>
<td>--</td>
<td>3519**</td>
<td>940**</td>
</tr>
<tr>
<td>&quot;BAKA&quot;</td>
<td>776</td>
<td>210</td>
<td>28</td>
<td>1982</td>
<td>21725</td>
<td>5882</td>
</tr>
<tr>
<td>&quot;BOU&quot;</td>
<td>1100</td>
<td>234</td>
<td>7</td>
<td>1983</td>
<td>7700</td>
<td>1640</td>
</tr>
<tr>
<td>&quot;TRIO&quot;</td>
<td>401</td>
<td>224</td>
<td>2</td>
<td>1982</td>
<td>802</td>
<td>448</td>
</tr>
<tr>
<td>LONG-LINE</td>
<td>38*</td>
<td>27*</td>
<td>26</td>
<td>--</td>
<td>978**</td>
<td>700**</td>
</tr>
</tbody>
</table>

Table I. Characteristics of the spanish long-line fleet fishing in EEC.
*average obtained from a part of the fleet,
**estimated values from averaged values.

In figures 3, 4 and 5 the characteristics and transformation by year, HP and GRT are represented. The process started in 1980 and get the maximum in 1981 when a 46% became transformed because of the good yield that the first unities tranformed had obtained, and the suitable equivalence of the licences in those days (.33). Since that moment the process of transformation decreased because of a change in the valuation of the equivalence of long-line licence with regard to trawl which was carried out in 1983.

The more powered vessels correspond to "bous" in origin and the least powered correspond to "trios" in origin. The GRT does not present any trend with respect to the original gears.

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Fig. 3. Trawl fleet transformed in the period 1980-1986.

Fig. 4. Distribution of engine power (HP) according on the origin.
Purse-seiners are polyvalent boats which alternate different fishing habits. In the years 76 and 77 some of these boats worked in EEC waters with gill-nets. Since 1978 this gear was forbidden in those waters. The measure affected boats fishing in the Subarea VII (with base in Galicia ports essentially) and the use of the long-line increased (because this gear was compatible with the boats and allowed). Some other transformations were produced in divisions VIIIa,b, where nine vessels are working (6 month by year) actually. The other 6 month they fish other species (tunna, anchovy, etc.).

Long-liners, originated from trawler spend all of their fishing time with that gear and stop their activities when they have not licences.
Long-liners from the beginning are little boats that work in division VIIa,b four month a year and the rest of the year in the division VIIc with long-line, hand-line or "currican" for tunna.

CATCH COMPOSITION OF LONG-LINE

In figure 6 the catch composition is represented quarterly. It has been obtained from data of Aviles, Santander and Ondarroa ports. In 1986 these three ports landed the 69% of the total catch of hake for this gear in the division.

Fig. 6. Catch composition of long-line.

The target species is the hake; it represents about 75% of the total catch for this fleet along the year.
EVOLUTION OF THE CATCHES

In table II and figure 7, the evolution of the annual catches of trawlers and long-liners in division VIIIa,b is represented for the period 1981 to 1986.

<table>
<thead>
<tr>
<th>YEARS</th>
<th>TRAWL</th>
<th>LONG-LINE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>--</td>
<td>--</td>
<td>14707</td>
</tr>
<tr>
<td>1981</td>
<td>8485</td>
<td>2589</td>
<td>11074</td>
</tr>
<tr>
<td>1982</td>
<td>10974</td>
<td>3044</td>
<td>14018</td>
</tr>
<tr>
<td>1983</td>
<td>8270</td>
<td>5756</td>
<td>14026</td>
</tr>
<tr>
<td>1984</td>
<td>6128</td>
<td>6556</td>
<td>12684</td>
</tr>
<tr>
<td>1985</td>
<td>7172</td>
<td>5618</td>
<td>12790</td>
</tr>
<tr>
<td>1986</td>
<td>5175</td>
<td>5536</td>
<td>10711</td>
</tr>
</tbody>
</table>

Tabla II. Evolution of the Spanish hake catches in divisions VIIIa, b (in tonnes).
Data from the Hake working group.

Data corresponding to the year 1980 are not separated by gears because there was not available information enough.

Fig. 7. Evolution of the catches of hake. Data from the Hake Working Group.
As we can observe, the catches of long-liners grew quickly between the years 1982 and 1984, meanwhile those of trawlers went down in the same period. Both of them got stability at the same level since 1984.

The general trend of the catches is to decrease, but the abundances in the area do not present this tendency (Cárdenas et al., 1987). It could be traduced in a decrease in the effort of the Spanish fleet.

LENGTH DISTRIBUTION BY GEARS

Length composition of the gears "bous" & "bakas" and "trios" & "parejas" in divisions VIIa,b for the year 1986 is represented in figure 8. The data had been presented to the Hake Working Group.

The minimum length in the catches is 10 cm for "bous" & "bakas", 20 cm for "trios" & "parejas", and 30 cm for the long-liners. Likewise the maximum percentage of catch falls into the 15 cm class for the first gear, 35 for the second one and for the last one those lengths are scattered between 35 and 50 cm. Therefore, any transfer of effort from trawl to long-line will be a profit for the exploitation pattern.

EVOLUTION OF THE LENGTH DISTRIBUTION OF THE LONG-LINE CATCHES

Following the evolution of the length composition of the hake, caught with long-line in the studied area, from the year 1981 to 1986, there is not observed any tendency to an increase in the exploitation of the younger individuals (Fig. 9).

The evolution of the mean weight does not show, either, any tendency to this increase (Table III).

<table>
<thead>
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<tbody>
<tr>
<td>W(k)</td>
<td>1.55</td>
<td>1.00</td>
<td>0.93</td>
<td>1.15</td>
<td>1.40</td>
<td>1.17</td>
</tr>
</tbody>
</table>

Table III. Mean weight of the catches of hake in the period 1981-1986 (long-line fleet in division VIIa, b).

The mean weight in the last year of the studied period is near to the average of the mean weight of the period (1.2 k.).
Fig. 8. Length distribution by gears for 1986 (Anon., 1987).
Fig. 9. Length distribution of the catches of long-liners from 1981 to 1986. (Hake Working Group, 1982-87).
CONCLUSIONS

1) A procedure of transformation, trawlers to long-line, started in 1980 in the division VIIIa,b.

2) This process reached a maximum in the year 1981 when 46% of the actual fleet was transformed.

3) The target species of this gear is the hake (75% of the landings in 1986)

4) The lengths of the hake caught by long-liners is sensibly bigger than one taken by trawlers.

5) The percentage of catches of long-line increase from 1980 to 1984, reaching a maximum of about a 50% of the total catch, keeping this level until the end of this period.

6) The length distribution of the catches of this gear for the period 1981-1986 does not show any decreasing trend. Besides this, the mean weight in the catch was in 1986 close to the the average of the mean weights for the period.

7) Total Spanish catches in the area show a decreasing trend for the period studied, imputable to a decrease in the fishing effort.

8) The four last conclusions suggest that these transformations have meant a benefit for the exploitation pattern.
REFERENCES


