
PORTUGUESE PROGRAMME FOR THE COLLECTION OF FISHERIES DATA

UPDATE 2006

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INTRODUCTION

This document, submitted pursuant to Article 4 (2) of Council Decision 2000/439/EC, updates, for the year 2006, the Portuguese Programme for the Collection of Fisheries Data, submitted to the European Commission in August 2001 (hereinafter referred to as PN02).

Organisations involved

This programme involves the five organisations described in point 1 of PN02, with competences divided between Mainland and the two Autonomous Regions:

- Direcção Geral das Pescas e Aquacultura – DGPA;
- Instituto Nacional de Investigação Agrária e das Pescas – INIAP/IPIMAR;
- Direcção Regional das Pescas dos Açores – DRPA;
- Departamento de Oceanografia e Pescas da Universidade dos Açores – DOP/UAç;
- Direcção Regional das Pescas da Madeira – DRPM,

Following the indications made by the Commission, in each parameter it will be made references for the fishery statistical area concerned as well as to the Organisation(s) in charge for the work in reference.

Co-operation between Portugal and other Member States

Collection of information on fishing capacity, fishing effort, economic and landings statistics are carried out entirely on a national basis.

Biological information on catches, information collected by research vessel and information on discards are in most cases coordinated internationally and carried out in close cooperation with research institutes in Member States and third countries. Some surveys are planned in close collaboration with Spain and Portugal is responsible for carry out some surveys in the Spanish waters of the Bay of Cadiz.

Levels of precision

All the sampling schemes were designed in order to achieve the level of precision demanded in the Regulation (EC) 1639/2001 amended by Regulation (EC) 1581/2004 ([hereinafter referred to as Regulation](#)).

The methodology applied to define the various sampling schemes presented is detailed in Annex I.

MODULE OF EVALUATION OF FACTORS OF PRODUCTION: FISHING CAPACITIES AND FISHING EFFORT

C. Collection of data related to fishing capacity

Minimum Programme

- Technical aspects -

All fishing areas/ DGPA/DRPA/DRPM

All vessels in the national fishing fleet are recorded in a single database located in the Mainland/DGPA. These data are recorded and updated pursuant to Regulations (EC) No 2930/86 and No 2090/98. Under these Regulations the following data, among others, are available by type of vessel, classified according to MAGP IV:

- i) Gross tonnage;
- ii) Engine power, expressed in KW;
- iii) Age of the vessel;
- iv) Gear used.

Portugal is therefore in a position to meet this parameter according to the disaggregation by segment in Appendix III of Regulation.

- Financial aspects -

No costs are allocated to this parameter.

Extended Programme

Complementary parameters will not be collected.

D. Collection of data related to fishing effort

- Technical aspects -

1.a i) Fuel Consumption

Minimum Programme

There are two components to the collection of information on fuel consumption:

i) Census information from the monthly information arising out of applying exemptions from the tax on petroleum products. Since monthly information individualised by vessel is available, Portugal is in a position to provide the data for this component according to the segments set out in Appendix III of Regulation.

ii) A sampling programme needs to be used to estimate the parameter of consumption of fuel per vessel for the sub-sector of the fleet that does not fit into the aforementioned criteria, i.e. vessels that use petrol. This includes most vessels that have open decks, and are less than 12 m in length. The following sampling schemes will be applied to collect this information:

ICES Division IX/DGPA

Parameter to be estimated - Fuel consumption (total)

Universe - Overall length ≤ 12 * outboard motor

Stratification criterion - NUTSII+Gear

Having in mind that the universe of the vessels for which's necessary the collection of the fuel consumption data corresponds to a subset of the universe for effort and catches inquiry, the evaluation of this parameter will be done using this last operation. The methodology adopted is described in the item 1 aii) of the present module.

CECAF 34.1.2/DRPM

The Autonomous Region of Madeira has a total of around 397 vessels that do not use diesel as fuel. From this universe of registered vessels the random sampling programme implemented will continue to be used covering, around 15% of this section of the fleet by means of surveys.

These data will be collected directly from the people responsible for the vessels, who will fill in a form in use by the DRPM in the various ports of unloading on the islands of Madeira and Porto Santo

ICES Division X/DOP

The necessary information to fulfil this parameter will be gathered through direct enquires to the captains of the fishing boats that do not use diesel as fuel. Since most of these are open fishing boats smaller than 12 meters, the same technicians responsible for sampling the fishing effort of each technique will also be responsible for gathering this information.

In the Autonomous Region of the Azores there are about 200 boats that use do not use diesel as fuel.

1. a.ii) Fishing effort by type of technique

Minimum Programme

There are two components to the collection of information on this parameter:

- Information related to vessels with an overall length of more than 12 metres, with mandatory completion of the fishing log book, where:

DGPA, DOP and DRPM are in a position to provide the information according to the level of precision 3 and geographical disaggregation specified in Annex II, Appendix I of Regulation. This is, all the data concerned the Portuguese fleet with an overall length higher than 12 m and operating in all the fishing grounds.

- Information related to vessels with an overall length of less than 12 metres.

For this segment of the fleet, Portugal doesn't have any instrument to evaluate the fishing effort, neither a Communitarian obligation, nor a National one. Therefore, in order to comply with the present regulation, it is necessary the implementation of a sampling methodology.

Small fisheries Inquiry

It is foreseen for 2006 that the small fisheries inquiry implemented in the year 2003 will be in routine.

The present small fisheries inquiry results of the integration of the two previous ones made separately by DGPA and IPIMAR.

Main objectives:

Estimation of the parameters

- Calendar days of fishing,
- Catch, landings and discards in weight per species in Annex XII,
- Fuel consumption.

Other objectives:

- Validation of the correction factors applied to the small fisheries landings. The ones actually in use have been estimated in 1986.
- Evaluation of the methodology adopted. The results possible lead to a readapting of the inquiry in terms of sampling effort and in terms of stratification variables.

Universe - Vessels with an overall length less than 12;

Stratification Criteria – NUTSII Licenced Gear;

Sample definition – Sampling scheme depends on the 2006 licencing.

Periodicity – the inquiry will be made in a fortnight basis as described in table D1.

Table D1 – Number of interviewers and weeks of work planned to take place for the small fisheries Inquire on 2006.

Delegation	Sub-Delegation	Interviewers (*)	Weeks (5Days)
Algarve	Olhão	2	24
	Portimão	2	24
Lisboa e Vale do Tejo	Setúbal	1	24
	Peniche	2	24
	Lisboa	2	24
Centro	Aveiro	1	24
Norte	Matosinhos	1	24
	Póvoa de Varzim	1	24

(*) nor all interviewers work the entire time.

This work will be conducted by DGPA together with the University of Algarve. The agreement between these two institutions is a solution to overcome some institutional constringements related with the fact that DGPA does not have the necessary human resources to carry out this task, nor can it legally contract someone. The work to be carried out by the University of the Algarve will always be supervised by the DGPA and will involve our Regional Delegations.

DGPA will be in charge of the fieldwork using for that it own human resources. The University of Algarve will be in charge of: i) adaptation of the database in order to receive the new variable collected – discards by specie (Annex XII), ii) surveillance of the fieldwork, and iii) all the statistical work need to achieve the results as defined in the Regulation.

With this sample scheme will be collected the necessary data to answer to parameter fuel consumption and parameters effort of this module, but it will also allow the estimation of the parameters catch, landing and discards in weigth of the small fleet accordingly with Module E.

The collection of all information related with the parameters demanded in this module will be conducted through sampling. The sampling method to be used is the stratified sample, each island (or group of small islands) constituting a stratum.

This type of sampling is designed to estimate calendar days of fishing and catches by species of vessels with a length of less than 12 metres, with precision 3 and level of geographical disaggregation 4.

This sampling scheme aims to estimate the number of effective fishing days, as well as the catch by species in a universe of 866 boats smaller than 12 meters.

The following table shows the number of trimestrial samples to be made in each port/island. Ports/islands with small representativity regarding the amount of boats smaller than 12 meters will be sampled on a trimestrial basis, whereas those with a larger number of boats will be monthly sampled.

TABLE E2 – Number of trimestrial samples by port/island (ICES Sub-Area X)

STRATA/ISLAND	UNIVERSE	SAMPLE
Corvo/Flores*	50	9
Faial	76	15
Graciosa	14	9
Pico	175	18
Sta. Maria*	43	9
São Jorge*	114	18
São Miguel	232	30
Terceira	162	24
TOTAL	866	132

(*) Harbours visited every three months.

The sampling programme adopted in previous years will continue collecting data of fishing effort from the universe of 415 vessels less than 12 metres in length registered in the RAM. From this universe random and stratified sampling will be used to cover 15% of the active vessels in each stratum.

This type of sampling is designed to estimate the calendar days of fishing and catches per species of vessels with a length of less than 12 metres, with level of precision and disaggregation 3.

The information will be collected by direct surveys every quarter.

1.a.iii) Specific Fishing Effort

Minimum Programme

There are no changes to PN01, Which says that the assessment and determination of specific fishing effort, in particular for the stocks referred to in Annexe VI of the proposal for the Application Regulation, would be determined by comparing fishing data sorted by fishing technique with the data on daily captures per vessel. Established computerized routines will enable the percentage capture of the reference stocks to be assessed for each vessel daily. The selection necessary to determine the parameter with the specified temporal and geographic separation will then be obtained.

- Financial aspects -

ICES Division IX/DGPA

The costs specified in “Staff costs”, “Travelling expenses”, “Subcontracting and other costs” is half of the total costs for gathering data of modules D (Collection of data related to fishing effort) and E (Collection of data related to catches and landings).

The subcontracts considered are: one with a statistician, who will be related with module D, E J (Economic Situation of the Sector), the other with the University of Algarve, related with module D and E, and the final one with a informatic technician, who will be responsible for the management of Database.

ICES Division X/DOP

This task will be executed on the field by 5 hired sampling technicians (in the budget there are designated 3 months of work for each) and by 2 other technicians subcontracted to carry the task in the less representative islands (since it carries less expenses to the program).

Two higher technicians (Technician Sup-New contract -E), based in Faial and S. Miguel islands, will coordinate the sampling scheme in the most representative islands.

It is also assigned in the budget some months of work for another higher technician (Technician Sup-New contract -D) and a scientist, as they are responsible for coordinating the program.

In “**Staff costs**”, we allocated the work of people who are involved in the Data Collection Programme. The costs of that work were proportionally split by the different parameters.

As the necessary human resources to carry out the Data Collection Programme are not available in DRPM we considered in “**Subcontracting and other costs**” the amount needed for subcontracting two Technicians sup. and four Technicians, which was proportionally split by the different parameters.

Extended Programme

Complementary parameters will not be collected.

MODULE OF EVALUATION: CATCHES AND LANDINGS

E. Collection of data related to catches and landings

The source of information on landings of fresh or refrigerated fish is in Mainland the public company, DOCAPESCA, S A. In Azores is the public company LOTAÇOR E.P. and in Madeira is the Regional Directorate DRPM. Those entities electronically register all the data about catch at the time of the 1st sale, i.e.: quantity by species and the respective price.

For the small-scale fisheries, vessels with an overall length less than 12 m this is the unique source of information. Although DGPA to obtain the

estimated catch in the ICES sub-division IXa applies conversion factors to sales figures; it is believed that the actual situation is not well known.

For data concerning the quantity of fish that are processed on board, each boat owner sends the boats' logbooks to the administration with the respective declaration on landings by species.

In the case of landings in MS harbours, Portugal cross-check the landing data presented in the logbook landing's declaration with the figures send to the Comission by each MS, via catch reports.

Information about catches and the respective fishing zones is obtained via the logbooks of all the vessels that are obliged to fill them in. These documents are received by the administration, such as DGPA, DRPA and DRPM, where the information they contain is first checked, and then entered in the Data Base.

As far as landings of fish processed on board are concerned, conversion factors to determine the estimate of weight on capture are applied for all landings, whether made in national or other ports. The list of conversion in use is the ones included in the AnnexII.

1.a.i) and ii.1) Commercial landings of all stocks and catches and landings of stocks included in Appendix XII

Minimum Programme

- Technical aspects -

There are two components to the collection of information on this parameter:

- Information related to vessels with an overall length of more than 12 meters, with mandatory completion of the fishing log book, where:

Portugal is in a position to provide the information according to the level of precision 3 and geographical disaggregation specified in Appendix I of Regulation.

- Information related to vessels with an overall length of less than 12 meters, to be collected by sampling by applying the following sampling schemes:

ICES Sub-Division IXa/DGPA

Information will be collected using the same sampling scheme presented in 1.a.ii)-“Fishing effort by type of technique”. The two variables will be examined using the same statistical instrument on a fortnight basis.

Having in mind the reasons explained in point 1. a ii)-“Fishing effort by type of technique”, this task will be carried out by the University of the Algarve.

ICES Division X/DOP

Since the Autonomous Region of the Azores belongs exclusively to ICES Division X a sampling scheme need not be adopted. The information will be collected from auction centre counterfoils for all fleet segments.

This information will be cross-referenced with information from fishing log books for vessels with a length of more than 12 [meters](#), and with information from the direct surveys described for vessels with a length of less than 12 [meters](#).

CECAF 34.1.2 /DRPM

Information related to the collection of data on landings will be obtained from auction centre counterfoils for all fleet segments.

As far as data on catches are concerned, the respective information will be obtained by cross-referencing the data on landings and the records from fishing logbooks in the case of vessels with a length of more than 12 meters, and with information from the direct surveys defined in the sampling schemes implemented by the DRPM for vessels with a length of less than 12 meters.

- Financial aspects -

ICES Sub-Division IXa/DGPA

See what we said in *module D. Collection of data related to fishing effort.*

CECAF 34.1.2/DRPM

See what we said in *module D. Collection of data related to fishing effort.*

Extended Programme

Data forming part of the Extended Programme will not be collected.

1.a.ii.2) Total discards of the stocks included in Appendix XII

Minimum Programme

- Technical aspects -

Sampling programme for the volume of discards for various stocks (Appendix XII)

An estimate of the weight of discards will be made for the stocks included in Appendix XII.

**ICES Division IXa, Sub- area XII, Division XIVb, Division IIa, b and NAFO
/IPIMAR**

IPIMAR will coordinates this activity in Division IXa, in the NAFO area and in ICES Sub area XII, Division XIVA and in Division IIa,b. Trained observers on vessels largers enough to accommodate an additional person on board, will carry out sampling. This includes trawlers (coastal vessels targeting fish and crustaceans and distant-water fishing), purse seines and long-liners (directed to swordfish and scabbard fish).

In the case of small-scale fishing vessels, which in most cases do not have space on board for an observer, the estimates of the weight of discards will be obtain using the sampling scheme presented in the point 1 a.ii) with the DGPA collaboration.

Methodology for triennial discards:

Discard data will be reported on an annual basis as required by the Regulation.

In order to minimise possibilities of duplication of sampling effort the on board work will be organised crossing the Regulation requests of item E. with those from item H-1-e). The observer's teams for both items are the same and when on board, all catches are sampled if possible and the information and samples collected under both items will be used for the estimates. The costs of this sampling were proportionally divided by the two items.

In the trawl and long-liners fleets, 2 observer teams will be working with two persons in each team. A single observer will be used in the purse-seine fleet.

In the Long-line fleet, two kinds of sampling schemes are defined (i) one directed to the swordfish fishery and (ii) another one to deep-sea fishery.

(i) In the first case the sampling effort consists of a single observer on board two different vessels, during three months in the 2nd half of the year (the most important catches of swordfish are made in the second half of the year and a trip normally lasts three months);

(ii) an observer programme for monitoring discards in the deep water fishery started in the beginning of 2005 with a single observer on board. 12 trips will be sampled per year from vessels of three ports (Viana do Castelo, Peniche e Sesimbra).

As far as purse seine fishing is concerned, the aim is also to cover the seasonality of fishing and the entire coast. Thus in the first semester one trip (one and a half days) will be sampled per quarter, randomly taken from one

vessel from each of the three most important coastal ports (Matosinhos, another from Peniche and another from Portimão), while in the second semester two trips will be sampled per quarter randomly selecting among the vessels from the above-mentioned ports.

For the trawl, long line and purse seine fleets the sampling procedures are very similar. In each sampled haul estimates are made of the total catch and of the discards. A sub-sample of two fish boxes (about 60 Kg) of the catch and the discards (2 boxes) are taken. Information on length, age, sex and maturity is recorded (when possible). For the purse seine fleet special attention is given to the record of the slipping.

NAFO and ICES Divisions XIVb and IIa,b

A total of 15 distant-water fishing trawlers operate in NAFO, Sub area 3, and ICES Div. XIVb+XII and Div.IIa,b. The crew male nurses were trained to carry out sampling during the trip.

Since the beginning of 1995 the monitoring on board of Portuguese vessels in NAFO Regulatory Area is carried out by the nurse-men of the crew. Prior to the actual National Programme, sampling on board by nurse-men has been in place through consecutive Community projects: AIR-CT92-0558 (1/93 a 12/96), STUDY 96/030 (6/97 a 6/99), STUDY 98/048 (4/99 a 4/01), STUDY 00/028 (4/01 a 8/01). Such a working regime is justified by several reasons:

1. An increasing difficulty of internal recruitment to long trips (five months on average), staying at fishing grounds with rough sea and bad weather all year round. Ageing and no renewal of the technician staff are the main causes of such blockage.

2. Per-diem plus extra license for weekends and holidays at sea makes a trip with a technician costlier than with external assistance.

3. The existence, by law, of a professional nurse man on board of each far-sea vessel. This nurse man is part of the crew, has a post-high school level and, with no specific task included on the daily routine, ends up by having the skills and perform a wide range of works on board, from assistance on the bridge to catch processing on the fish deck.

4. The nurse-men are an officer belonging to the superior staff-structure of the vessel; sampling on board is carried out under a free and personal agreement between NAFO researchers/captain/ship owners. The combination of these two facts gives the nurse-men not only deck facilities as regards the sampling of any species in the catch, but also for each haul access both to the number of fish blocks to be frozen by species and to the logbook data in the bridge.

At the end of 1994-beginning of 1995 the NAFO team of scientists gave formation to two nurse-men in biological sampling of the catches and record of the logbook data related to each fishing set. Since then, these two nurse-men have carried out the sampling and record of the fishing activity of their vessels throughout the year, on a set-by-set basis. The scientist staff at the end of each trip regularly revises this work. One of the vessels operates exclusively in NAFO, the other one operates both in NAFO and ICES Divisions XIVb and IIa,b. The fishing effort of both monitored vessels corresponds to around 20% of the total fishing effort of the Portuguese fleet deployed annually on Northwest Atlantic. Catches are sampled prior to any eventual discards.

The basis for the payment of this external assistance is: 5,25 € for the record of the logbook data in one day (catch by species, discards estimation, time, date, mesh size, position and depth at the beginning and end of each set); 26,25 € for each sample (length sample and a sub sample of individual weight and collection of otoliths).

The NAFO costs are split in different percentage by item (E., H., I) according with the expenses of each item.

The NAFO observers will be deployed on two of the vessels and collect, per haul, samples to obtain estimates of catches and discards of the species mentioned in Appendix XII (Table E.1).

Every haul is monitored and length frequencies of discarded species are collected. In addition otoliths are obtained from discarded fish (cod, witch flounder, American plaice, yellowtail flounder, routhead grenadier, Greenland halibut and redfish).

Tab E.1 - IPIMAR discard programme (MP)

	Name	Scientific name	Stock/ Div.	Discards (A-annual/ T-triennial)
	NAFO			
(a)	Cod	<i>Gadus morhua</i>	2J3KL	A
(a)	Cod	<i>Gadus morhua</i>	3M	A
(a)	Cod	<i>Gadus morhua</i>	3NO	A
(a)	Witch flounder	<i>Glyptocephalus cynoglossus</i>	3NO	T
(a)	American plaice	<i>Hippoglossoides platessoides</i>	3LNO	T
(a)	American plaice	<i>Hippoglossoides platessoides</i>	3M	T
(a)	Yellowtail flounder	<i>Limanda ferruginea</i>	3LNO	T
	Roughead grenadier	<i>Macrouridae</i>	SA 2 +3	T
	Shrimp	<i>Pandalus borealis</i>	3M	A
	Skates	<i>Raja spp.</i>	SA3	T
	Greenland halibut	<i>Reinhardtius hippoglossoides</i>	3KLMNO	A
	Redfish	<i>Sebastes spp</i>	3M	A
(a)	Redfish	<i>Sebastes spp</i>	3LN	A
	Redfish	<i>Sebastes spp</i>	3O	T
	Irminger Sea - ICES			
	Redfish	<i>Sebastes spp</i>	V a	T
	Redfish	<i>Sebastes spp</i>	XII	T
	Redfish	<i>Sebastes spp</i>	XIVb	T

(a) by catch from the directed fisheries to Skates, Greenland Halibut and Redfish

The data collected will be stored in the PNAB database (*Programa Nacional de Amostragem Biológica* [National Biological Sampling Program])

The data obtained by sampling will be raised, by species, to the catch of the trip of the respective fleet, and as a final result the total figures for discards extended to the total catches of each fleet (by length and age, if possible) in an annual basis.

The main purpose is to evaluate discards made by the Azorean commercial fleet on the population units included in Appendices XII for the Division X. Specifically, it aims to identify and quantify the species discarded and ascertain the reasons for their discard.

Only information on the longline fishery will be gathered, since boats that operate with other fishing techniques (hand-lines and small seiners) do not show significant amount of discards.

There are two components in the methods to be used for gathering this information: live aboard observers in longline boats, and direct enquires made by these same observers during the periods spent on land.

Methodology for the long-line fishery

The methods proposed are similar to the ones adopted in PN2005. The sampling scheme will have a trimestrial basis and the boats will be grouped by size (smaller than 12 meters, 12-24 meters, 24-40 meters). At least a minimum of 18 trips by group will be made per year (a trip lasts an average of 3-4 days in smaller boat and 10-12 days in bigger boats), aboard fishing boats from the 3 main islands – Faial, Terceira and S. Miguel. A team of three observers will be responsible for this task. For the boats that, due to lack of space, don't allow the presence of an observer, estimates on the quantity of discards will be obtained through direct enquires to the captains, once the boats enter the port.

The preliminary report on the discards of Madeira fishing fleet, delivered in October 2003, confirm the previous assumption that the high selectivity of the fishing gear used in Madeira originate a small amount of discards in the commercial fisheries. Nevertheless it is our purpose to continue the implementation of this module in 2006, taking in account that:

- There are no previous comprehensive studies dealing with the discards of Madeira fishing fleet;
- The above mentioned report delivered only preliminary results and was focused mainly in the fishery of small pelagic fish (mackerel and horse mackerel);
- Due to the seasonality and inter-annual irregularity of catches in the pole and line tuna fishery, there was an insufficient coverage in previous years by the observers onboard, of this fishery.

The sampling will continue to be performed on a quarterly basis, and the vessels grouped by fishery (longline, purse seine, or pole-and-line) and by length (under 12 meters, 12-24 meters and 24-40 meters).

The objective of the pilot-study is to sample 15% of the commercial fishing vessels active en each of the segments under study. This pilot study will carry on during 2006 trying to cover the pole and line tuna fishery, objective that was not achieved in previous years.

– Financial aspects –

See what we said in *module D. Collection of data related to fishing effort*.

**ICES Division IXa, Sub area XII, Division XIVb, Division IIa,b and NAFO/
IPIMAR**

The costs specified in “**Travelling expenses**” are related with the sampling programme for trawl and long-liners fleets

ICES Division X/DOP

The budget presented in “**Travelling expenses**” and “**Subcontracting and others**” are related with the contracts with the observers. A superior technician will be in Faial, responsible for the major coordination of the Discards Programme; other two will be responsible for the compliance of the Programme on the other islands, following the guidelines from Faial (allocated three months each); one technician will introduce all collected data and help with the land surveys.

Due to the uncertainty of the landing ports, depending on many factors such as weather conditions or prices, travels among islands by the observers have to be considered on the budget.

See what we said in module *D. Collection of data related with fishing effort.*

Extended Programme

Data forming part of the Extended Programme will not be collected.

1.a.iii) Catches from game and recreational fisheries

Minimum Programme

ICES Division IXa/DGPA

Since there are no game fisheries in Mainland Portugal for the species included in Annex XVI of Regulation, it is not necessary to carry out a pilot survey.

ICES Division X/DOP

Regarding this parameter, it was implemented a pilot study in 2003 in order to evaluate catches of bluefin tuna by big game fishing. In the report sent to the commission, it was concluded that, in the present, there are no catches of bluefin tuna that justify further studies.

– Financial aspects –

Following the conclusions of the pilot study carried out in 2003, Madeira game fishing focuses mainly on marlin (white and blue marlin). Bigeye tuna, albacore tuna and wahoo are also sometimes caught. There are no records of catches of bluefin tuna in this type of recreational fishing in recent years.

The percentage of this catch is only 0,5% of the commercial one in the area, which shows that there is no obligation to maintain an exhaustive sampling program as a routine. Nevertheless we will keep following the daily information by trip of these recreational boats, collected in the forms previously distributed during the pilot study.

Extended Programme

Complementary parameters will not be collected.

F. Collection of data related to Catches per Unit of Effort [CPUE] and/or effective effort of specific commercial fleets

Minimum Programme

- Technical aspects -

Following the conclusions on CPUE's of the SGRN report (24-28, March, 2003) and 16th Report of the STECF (SEC(2003) 843) the CPUE indices will continue to be obtained for all the stocks and areas presented in table F1.

Table F1 presents the Portuguese series approved to the CPUE collection data.

Table F1. Portugal CPUE Data		
Portugal	Atlantic Shelf	
Fleet	species	Recommended to be Sampled by STECF
Bottom trawlers - fish	Southern Hake	x
Trawlers (crustacean)	<i>Nephrops</i> (FU 28/29)	x
Trawlers (crustacean)	Anglerfish (<i>L. piscatorius</i> , VIIIc & IXa)	x
Trawlers (crustacean)	Anglerfish (<i>L. budegassa</i> , VIIIc & IXa)	x
Sesimbra longliners	Black Scabbard	x
Trawlers (fish)	Southern Mackerel	x
Cephalopod fishery	Cephalopods in IXa	x
Deepwater sea bream fishery	<i>Pagellus bogarevo</i> , X	x
NW Atlantic		
Trawlers	Cod, 2J3KL	x
Trawlers	Cod, 3M	x
Trawlers	Cod, 3NO	x
Trawlers	Redfish, 3M	x
Trawlers	Redfish, 3LN	x
Trawlers	Greenland Halibut SA2 & 3KLMNO	x
Trawlers	Grenadiers, SA2+3	x
Trawlers	Witch flounder, 2J3KL	x
Trawlers	Witch flounder, 3NO	x
Trawlers	Yellowtail flounder, 3LNO	x
Trawlers	American Plaice 3M	x
Trawlers	American Plaice 3LNO	x
ICES Div X + CECAF		
Azores Bigeye tuna fishery	Bigeye tuna	x
Various Azores/Madeira fisheries	Tuna species	x

ICES Division X/DOP

For the species under ICCAT domain, data regarding catches per unit of effort require specific rules on their collection. By this reason, and while the results of the analysis on the reports mentioned above is not known, the data will continue to be collected under the cover of the Minimum Programme, in a way of answering to the various fisheries management organizations needs.

CECAF 34.1.2/DRPM

DRPM will continue to collect data for this module on the frame of the Minimum Programme. This work will be carried out for tuna and tuna like species, following the specific rules determined by ICCAT working groups where the CPUE indices are analysed.

- Financial aspects -

This parameter has no costs allocated in the Minimum Programme.

Extended Programme

Complementary parameters will not be collected.

G. Eligibility of the scientific evaluation surveys of stocks (Annex XIV)

Minimum Programme

The priority 1 - research surveys included in the Minimum Programme (MP) will be carried out (following text table). IPIMAR is responsible for the first three research surveys and co-responsible for the final one.

Table G.1 – Research Surveys

Survey	Area	Period	Effort (days at sea)	Vessel used
IBTS – Western – 4th quarter	IXa	Oct/Nov	30	Noruega
Sardine, anchovy, horse mackerel acoustic survey	IXa (PT) +IXa Cadiz (SP)	April/May	30	Noruega
Nephrops	IXa	June	19	Noruega
Flemish Cap groundfish survey	3M – NAFO	July	30-36	Vessel under Spanish responsibility

Western IBTS 4th quarter

Main objective:

- To estimate indices of biomass and abundance, by length and by age classes, of the principal commercial and non-commercial demersal species (hake, anglerfish, megrims, Atlantic horse mackerel, pouting, blue whiting, etc), using bottom trawls during daylight;
- To estimate the indices of recruitment of the principal species.

Other objectives:

- To study the distribution and behaviour of species;
- To study biological parameters of species: maturation, feeding, etc;
- To collect oceanographic data using CTD.

At ICES level this survey is co-ordinated with Spain and the results are applied in assessing stocks of Southern hake, Atlantic horse mackerel, blue whiting and nephrops. The data obtained is used in the following ICES WG:

International Bottom Trawl Survey Working Group;

Northern Pelagic and Blue Whiting Fisheries Working Group;

Working Group on Nephrops Stocks;

Working Group on the Assessment of Mackerel, Horse Mackerel, Sardine and Anchovy;

Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrim;

Working Group on Ecosystem Effects of Fishing Activities.

Data from this type of survey are stored in the CRUZDEM [national](#) database.

Sardine, Anchovy and Horse Mackerel Acoustic Survey

Main objective:

- To estimate, by eco-integration, the frequency of sardine in number and biomass by classes of length and age groups on the Portuguese coast in Div. IXa and Spanish waters in the Gulf of Cadiz (Div.IXa), using pelagic trawls during daylight.

Other objectives:

- To study the geographical distribution of sardine and other pelagic species, particularly European anchovy (Div. IXa), and their behaviour;
 - To monitor (during the night) the frequency and distribution of sardine eggs, with CUFES nets, by continuous sampling and Calvet stations;
 - To monitor the oceanographic conditions with continuously-recording thermosalinometer and minilog;
 - To estimate the frequency of European anchovy, in number and biomass, by classes of length and age;

These surveys are co-ordinated with Spain and occasionally with France. The ICES Working Group on the Assessment of [Mackerel, Horse Mackerel, Sardine and Anchovy](#) uses the results of these acoustic surveys in the [assessment of sardine stocks](#).

The data from these surveys are stored in the ACUSTIC1 database.

Two surveys of this type are carried out in Portugal per year: the one presented above and another in the fourth quarter of the year (priority 2, Appendix XIV), when adults concentrate on the Portuguese continental shelf, during spawning season.

[The ICES WG on the Assessment of Mackerel, Horse Mackerel, Sardine, and Anchovy](#) also uses the latter survey to assess sardine stock.

***Nephrops* Survey - IXa**

Main Objectives:

- To estimate abundance indices of Norway lobster (*Nephrops norvegicus*), other important crustacean species as rose and red shrimp (*Parapenaeus longirostris* and *Aristeus antennatus*) and fish by-catch, in the crustacean fishing grounds off Portugal;
- To estimate the sex and length structure of the of the target species;
- To collect information on the reproductive cycle and other biological characteristics of the target species;

Other objectives:

- To study the sediment structure of the *Nephrops* distribution area;

Justification:

The assessments performed in the period 1997-2004 indicate that the Iberian *Nephrops* stocks are overexploited, and the biomass and recruitment levels are very low. For the years 2002-2004, the WG on *Nephrops* stocks recommended 0 t TAC for the FUs 26 to 29 of the Division IXa, corresponding to West Galicia, North Portugal, SW and S Portugal. Considering these results, STECF has proposed a recovery plan for the Iberian *Nephrops* stocks. **This survey initially of priority 2 was moved to priority 1 because since 2005 will be under a recovery plan.**

The nephrops surveys are the only fishery independent source to get information on the population structure and abundance indices of total and spawning stock biomass. The crustacean surveys started in 1980 using different research vessels and methodologies. Since 1997, a 3-week survey, in June, has been carried out every year, using the same methodology and covering the SW and S Portugal (FUs 28-29), the most important *Nephrops*

fishing areas in Portugal. The period chosen is the pre-spawning period, when both males and females are caught. After spawning, during the egg-bearing period, females hide in burrows and thus become less catchable.

These independent estimates have been used to assess abundance trends and also for the tuning procedure in the assessments.

The data obtained is used in the following ICES WG:

International Bottom Trawl Survey Working Group;

Working Group on Nephrops Stocks;

Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrin.

Flemish Cap groundfish survey

At present the RV Visconde d'Eza, belonging to Spain carries out these surveys, which have been running since 1988. Portugal has taken part by means of a team of two scientists and one technician.

Main objective:

- To estimate indices of abundance and biomass, by length and age classes, of the principal demersal species (cod, redfish, plaice, Greenland halibut, grenadiers and shrimp).

Other objectives:

- To study the distribution and behaviour of species;
- To study biology and feeding;
- To carry out a hydrographical characterisation using CTD.

The historical series of data from this survey, together with data from on-board sampling, either of the Spanish or the Portuguese commercial fleet, make it possible to produce an annual assessment of stocks of the principal species in NAFO Sub-area 3. The Portuguese and Spanish fleets are the most important fleets operating in regulatory Sub-area 3.

This survey is co-ordinated with Spain in one/two meeting that will take place in Vigo (Spain).

Tuna Tagging Program

IPIMAR

During the Tuna Tagging Meeting held in Bari (Italy) in April 2005, aiming a development of a Pan-European Tuna Tagging Program, it was established that Portugal would start developing tuna tagging activities in 2005. These will include Bluefin tuna and Swordfish tagging. Details for each species are listed below. The objective is a better understanding of tuna ecology and the reinforcement of fisheries management leading to the sustainable exploitation of tuna resources. Specifically, the goals of the agreed actions are to address problems in the assessments. These problems include uncertainties on: (a) CPUE series, (b) Spatiotemporal variability in growth patterns, (c) estimates of mortality parameters and (d) rate of mixing among different stocks.

No Bigeye tagging actions are foreseen within the 2005 tuna-tagging program. This is because the results for the recent ICCAT BETYP program are being further analysed under the framework of ICCAT. It is expected that tagging of bigeye will be reactivated on completion of this work in 2006.

Bluefin tuna

Bluefin tuna tagging using pop-up tags will be developed in a joint action with Spanish and Italian scientists. Under responsibility of IPIMAR tagging will take place in the Algarve (East Atlantic) where the fishing season extends from April to September. The local tuna trap will catch fish. Five specimens of about 150 kg are expected to be tagged with electronic popup tags in August. For this it will be necessary a team of 2 scientists and 3 technicians. Costs include ship hiring, electronic tags, satellite use, fish and other small fishing equipment.

A trip to Spain for training purposes is expected to occur in July-August, during the Spanish tagging survey in Barbate/ Mazzaron. This will involve 1 scientist and 1 technician during 5 days.

Some opportunistic tagging experiments, using “spaghetti” tags will also be conducted during the tuna trap fishing season, targeting juveniles (<6.4 kg). No request of funding is made for this opportunistic action.

Swordfish

Some opportunistic tagging is expected to be done on the North Atlantic. This action will take place onboard Portuguese long liners by IPIMAR observers. The aim is to tag juveniles (<25 kg). No request of funding is made for this opportunistic action.

It was decide include in Section G the Tunna Tagging Program because it is more easy to the inclusion of the costs.

ICES DIV. X

DOP

In the *Planning Group for the Atlantic (North east) and Mediterranean tuna tagging* meeting it was decided that tagging bigeye tuna could be integrated in the 2006 program, if a coordination of actions between the State Members involved in the fishery (Spain, Portugal, France) could be established.

DOP is willing to make scientific cruises to tag bigeye tuna, together with other countries as referred in the meeting. However, there is yet no definite and articulated proposal between the State Members that aims tagging this species.

CECAF 34.1.2

DRPM

Following the conclusions of the Bari meeting on tuna tagging, due to the absence of participants related to tuna tropical species (bigeye tuna) no formal joint proposal was adopted in 2005. The tagging of bigeye will be probably resumed in 2006 in the frame of the Joint European Planning Tagging Programme.

Extended Programme

The Extended Programme will include two surveys with priority 2, listed in Appendix XIV of the Regulation. These surveys are important because

provide data for the assessment of stocks having priority 1 (species included in Chapter III, Appendix XV and XVI).

The costs of these surveys are presented in the FinForms-EP- Table G.

The referred surveys are presented in following text table:

Table G.2 – Research Surveys

Survey	Area	Period	Effort (days at sea)	Vessel used
Sardine Acoustic Survey -SAR	IXa(PT)+IXa Cadiz (Spain)	November	29	Noruega
Groundfish Survey (Summer)	IXa (PT) +IXa Cadiz (SP)	Summer	28	Noruega

Acoustic Survey for Sardine in Division IXa –SAR- (Portugal and Spanish waters of Gulf of Cadiz)

Main Objectives:

- To estimate the distribution and abundance (numbers and biomass at age) of sardine (*Sardina pilcahrdus*) near the peak of spawning in the Portuguese continental shelf and the Gulf of Cadiz;
- To estimate the incoming year class strength (age 0) of the Atlanto-Iberian stock of sardine, that mainly appears concentrated off northern Portugal in late autumn;
- To calculate the mean weight and the proportion mature at age in the population.

Other Objectives:

In recent years, the following objectives have also been incorporated to improve the cost/efficiency ratio of the survey:

- Estimate the distribution and abundance of other small pelagic fish species (mainly anchovy – *Engraulis encrasicolus* and snipefish – *Macrorhamphosus* spp.);
- Collect data on the distribution and relative abundance of ichthyoplankton in surface waters and register key environmental variables (temperature, salinity and fluorescence) in the same water mass (using the sampler CUFES and the software EDAS), simultaneously with the collection of echo-integration data;
- Perform additional ad-hoc sampling (specific for each survey) for study cases aiming to improve the biological understanding on pelagic fish resources on the Portuguese continental shelf (e.g. in the latest survey, most nights were dedicated to stratified plankton sampling to describe the vertical distribution of sardine eggs).

Application of results:

Sardine constitutes the most important fisheries resource of Portugal, justifying the considerable monitoring and research activity attributed to the assessment of its stock and the characterization of the pelagic marine ecosystem in the Portuguese continental shelf. The results of the autumn

acoustic survey are used for the annual assessment of the Atlanto-Iberian stock of sardine (ICES WGMHMSA), providing a fisheries-independent series of relative abundance indices and biological parameters (mean weight and proportion mature at age) for the estimation of spawning biomass. In the most recent years, the acoustic estimates of anchovy biomass have also been useful in the exploratory assessment of the anchovy stock in ICES Division IXa initiated by WGMHMSA.

Other comments:

The autumn Portuguese acoustic survey has the advantage of offering simultaneously an estimate of recruitment (mainly occurring in late autumn) and spawning stock biomass (spawning off Portugal prolongs from September/October to March/April). The introduction of the autumn Portuguese acoustic series in the assessment of sardine in 1998 has contributed to the stabilization and the inter-annual consistency of the stock parameter estimates. Possible reasons for that is that the series provides precious information for the estimation of recruitment and that it spans more than half of the assessed period (starting in 1984, albeit with major gaps in the late 80s and early 90s). This survey is also the only that permits a timely monitoring of the incoming year class strength. This turned out to be particularly important in the autumn of 2000, when the survey confirmed fisheries information of an unprecedented recruitment in northern Portugal (recruitment in northern Portugal was estimated in 2000 to be almost an order of magnitude greater than the mean). As a result of this information, timely, extra, measures were taken for the protection of this year class (fishery closure in northern Portugal during 2 months in the spring of 2001), at a time when the stock was at historically low levels.

Groundfish survey in Summer - ICES Div. IXa

Main Objectives:

- To estimate indices of biomass and abundance, by length and by age classes, of Hake and other main commercial and non-commercial demersal species (anglerfish, megrims, Atlantic horse mackerel, pouting, blue whiting, etc), during the hake spawning season;

Other objectives:

- To study the distribution and behaviour of species;
- To study biological parameters of species: maturation, feeding, etc;
- To collect oceanographic data using CTD.

Justification:

The Southern Stock of Hake (ICES Div VIIIc+IXa) is outside safe biological limits. The recent recommendation (ACFM/STECF, 2003) is to establish a recovery plan with the purpose to increase the spawning stock biomass to levels that should rebuild the stock. Under this circumstances groundfish survey data constitutes an important source of information that allows monitoring annually the abundance of the spawning component. This estimate shall provide an indicator on the response and reaction of the spawning stock biomass to the measures established by the recovery plan. This is the most important reason because that survey was moved to spring instead summer.

The recovery plan (involving Southern Hake and Nephrops) will be implemented in 2005 because all the usually stages (scientific meetings, EC regulation) are finished and the proposal is now agended in the European Parliament. Additionally the data collected in this survey will provide biological information to accomplish the needs of each species (namely horse mackerel,

mackerel and blue whiting) in the Minimum Programme, such as growth, sex maturity and fecundity.

The data obtained is used in the following ICES WG:

International Bottom Trawl Survey Working Group;

Northern Pelagic and Blue Whiting Fisheries Working Group;

Working Group on Nephrops Stocks;

Working Group on the Assessment of Mackerel, Horse Mackerel, Sardine and Anchovy;

Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrin;

Working Group on the Biology and Assessment of Deep-sea Fisheries Resources.

The data from these surveys are stored in the CRUZDEM database.

H. Biological sampling of catches: composition by age and by length (Appendix XV)

ICES Division IXa/IPIMAR

1 – Introduction

Portuguese vessels generally fish in their own waters, except for those that operate in the NAFO area and ICES Division XIVb, IIa,b and the swordfish fleet.

The Portuguese fleets that operate in the waters of Div. IXa are: bottom trawl (for fish and crustaceans), purse-seine and the multipurpose fleet, so-called because of the variety of gear used, mostly simultaneously (hooks, gill nets, traps, etc).

The multipurpose fleet is divided into the local and the coastal fleet. The local fleet or small scale fleet made up of small, open-deck wooden vessels (around 7 000), some 58% of which have between two crew, using a great number of ports of unloading. This very often causes additional difficulties for the samplers, particularly as regards estimating discards.

At the minimum programme level the following species are exemptions concerning the sampling rules for length and age distribution of the landings (Reg. EC 1639/2001-H.1.d) and Reg. EC 1581/2004-Appendix XV) and for other biological parameters (Reg. EC 1639/2001-I.1.d)1.i) and Reg. EC 1581/2004-Appendix XVI):

Eel – *Anguilla anguilla* – All areas

Argentine - *Argentina spp.* - All areas
Meagre - *Argyrosoma regius* - All areas
Alfonsinos - *Beryx spp.*- All areas (excluding X)
Whelk - *Busycon spp.*- All areas
Edible crab -*Cancer pagurus* - All areas
Conger - *Conger conger* - All areas (excluding X)
Roundnose grenadier - *Coryphaenoides rupestris* - All areas
Sea bass - *Dicentrarchus labrax* - IXa
Bluemouth rockfish - *Helicolenus dactylopterus* - IXa
Lobster - *Homarus gammarus* -All areas
Orange roughy - *Hoplostethus atlanticus* - All areas
Whiting - *Merlangius merlangus* - IX
Wedge sole - *Microchirus variegatus* - All areas
Lemon sole - *Microstomus kitt* - All areas
Blue ling - *Molva dypterygia* - All areas (excluding X)
Ling - *Molva molva* - All areas
Red mullet - *Mullus surmuletus* - All areas
Forkbeard - *Phycis phycis* - All areas (excluding X)
Pollack - *Pollachius pollachius* - All areas
Salmon - *Salmo salar* - All areas
Razor clam - *Solen spp.* - All areas
Spurdog - *Squalus acanthias* - All areas
Mediterranean horse mackerel - *Trachurus mediterraneus* - VIII, IX
Pandalid shrimp - *Pandalus spp.* - 3M - NAFO
Skate - *Raja spp.* - SA 3 - NAFO

All data collected in this module will be stored in the PNAB database.

2 – Composition of landings by lengths and by ages

Biological sampling scheme on ICES Division IXa, XIVb+XII and NAFO area

In Div. IXa the sampling programme to obtain compositions of landings by classes of length and by age and other biological parameters for each species is stratified by port, month and type of fishing gear. The selection criterion used is simple random sampling.

The estimated statistical population is made up of the total number of individuals of each species landed during the year in all ports by all fleet vessels.

Cooperation in age readings:

There are cooperation with others Institutes for reading illicia and otoliths (Anglerfish, hake, [sardine](#), etc)

Minimum Programme

Tables H.1 and H.2 show the overall sampling effort (annual and all gear) to be developed by the NP in Division IXa, NAFO area and Irminger Sea.

The Portuguese sampling programme for the composition of the landings by length and age, by species, port, month and type of gear presented in this report was specified in NP2002. The sampling effort previewed is expected to produce estimates with an high precision for the main exploited ages, as requested by the revised regulation. However, during 2005 and 2006 IPIMAR will revise the age and length sampling design in

order to optimize the man power and budget allocated to this task, without jeopardizing the estimates' precision.

Regarding the sampling levels some explanation is necessary. In the case of the black scabbardfish, for example, catches are made up of individuals between 80 cm and 130 cm long, without variations over time. This is due to the selectivity of the fishing gear used in this targeted fishing (longline) and the great variety of lengths of fish, with small lengths occurring in each haul sampled, which means that a large number of samples has to be collected to obtain the required precision level. As regards the number of otoliths collected by length, the criterion used is the collection of three to five otoliths by class of length. In Table H.1 are presented the sampling levels at age and length of the landings (Div.IXa) by species included in the MP:

Table H.1. Landing Sampling in ICES Div.IX a -Portugal
Sampling levels at age and length by species in H. and I. Chapter III - Minimum Programme

SPECIES (English name)	Species (Scientific name)	AREA	Biological sampling	
			Length #samples	Age # of otoliths
Black Scabbardfish	<i>Aphanopus carbo</i>	IX a	104	141
Megrims	<i>Lepidorhombus boscii</i>	IX a	312	-
Megrims	<i>Lepidorhombus whiffiagonis</i>	IX a	208	0
Squids	<i>Loligo vulgaris</i>	IX a	416	0
Anglerfish	<i>Lophius budegassa</i>	IX a	1126	1356
Anglerfish	<i>Lophius piscatorius</i>	IX a	1014	639
Hake	<i>Merluccius merluccius</i>	IX a	1716	356
Blue whiting	<i>Micromesistius poutassou</i>	IX a	416	1361
Norway lobster (FU28+29)	<i>Nephrops norvegicus</i>	IX a	104	-
Octopus	<i>Octopus vulgaris</i>	IX a	652	-
Rose Shrimp	<i>Parapenaeus longirostris</i>	IX a	52	-
Pink Shrimp	<i>Aristeus antennatus</i>	IX a	52	-
Blond Ray	<i>Raja brachyura</i>	IX a	48	
Roker	<i>Raja clavata</i>	IX a	48	
Spotted Ray	<i>Raja montagui</i>	IX a	48	
Undulate Ray	<i>Raja undulata</i>	IX a	48	
Sardine	<i>Sardina pilchardus</i>	IX a	680	8616
Spanish mackerel	<i>Scomber japonicus</i>	IX a	160	596
Mackerel	<i>Scomber scombrus</i>	IX a	396	1063
Cuttlefish	<i>Sepia officinalis</i>	IX a	416	-
Axillary seabream	<i>Sparidae(Pagelus acarne)</i>	IXa	416	-
Horse mackerel	<i>Trachurus trachurus</i>	IXa	1300	3230
Pouting	<i>Trisopterus luscus</i>	IXa	416	1353
Swordfish	<i>Xiphias gladius</i>	North Atlan	52	

The Table H.2 shows the sampling level at length and age by species for NAFO area and ICES Sub areas XII and Div XIVb included in the MP:

Table H.2. NAFO AREA - Sampling on board of the commercial fleets
Sampling levels at age and length by species in H. and I.(Chapter III) - Minimum Programme

SPECIES name	Species Scientific name	AREA	Biological sampling	
			Length	Age
			#samples (#fish/sample)	#sample (#otoliths/ sample)
NAFO				
Cod	Gadus morhua	2J3KL	1(150)	-
Cod	Gadus morhua	3M	2(120)	1(20)
Cod	Gadus morhua	3NO	53(100)	14(38)
Witch flounder	Glyptocephalus cynoglossus	3NO	22(150)	3(50)
Witch flounder	Glyptocephalus cynoglossus	2J3KL	18(150)	-
American plaice	Hippoglossoides platessoides	3LNO	90(200)	17(50)
American plaice	Hippoglossoides platessoides	3M	4(150)	-
Yellowtail flounder	Limanda ferruginea	3LNO	23(200)	5(60)
Grenadiers	Macrouridae	SA 2 + 3	104(200)	20(50)
Shrimp	Pandalus spp.	3M	0	-
Skates	Raja spp.	SA 3	0	-
Greenland halibut	Reinhardtius hippoglossoides	3KLMNO	167(200)	56(50)
Redfish	Sebastes spp.	3M	15(200)	8(50)
Redfish	Sebastes spp.	3LN	64(200)	19(50)
Redfish	Sebastes spp.	3O	97(200)	24(50)
ICES				
Redfish	Sebastes spp.	XIVb+XII	64(200)	19(50)

(*) - Species not included in nacional Sampling Programme

3 – Composition by lengths and age of discards of fish

The objective of this monitoring programme is to estimate discards of fish into the sea in weight and number by length and age classes.

Observers on board the commercial vessels will collect discard information for the most important fisheries, as described in item E. For the different fleets there are several teams (2 teams for bottom trawl, 1 team for long-line, 1 team for purse-seine) localised at Lisbon (IPIMAR headquarters). They need to travel to the ports to get the vessels for sampling on board.

In order to minimise possibilities of duplication of sampling effort the on board work will be organised crossing the regulation request of item E. with those from item H-1-e). The on board sampling costs are divided between item E and item H-1-e) proportionally.

The observer's teams for both items are the same and when on board, all catches are sampled if possible (length, age and others biological parameters are collected).

During 2005 the sampling scheme for discards estimation will be revised considering the recent developments on estimation methods (WKDSMRP, 2003) and the experience gathered during the first period of the sampling collection.

The sampling schemes not described in detail in item **E** have the following additional description:

Bottom Trawl Fisheries

As described in the NP 2003 the Neyman criterion was used to determine the number of samples to be collected in bottom trawl fisheries.

This number of samples to be collected is then distributed among the most important ports according to the number of trips recorded per vessel and their variance. The Table H.3 shows the sampling scheme to be implemented for the bottom trawl fleet.

Table H.3. - Distribution of Sample among most important Strata: Optimum or Neyman Allocation				
Port	No of trips			No of samples
Stratum	Ni	sdi	Ni*sdi	ni
Matosinhos	1455	60,8	88422,0	48
Aveiro	1988	65,4	129970,5	71
Figueira da Foz	1458	63,8	92983,7	51
Nazaré	881	43,1	37970,5	21
Portimão	1089	59,4	64725,5	35
Vila Real S.António	3270	49,0	160275,7	87
Lisboa	842	50,4	42432,3	23
Total No samples/year			616780,2	336

Long-Line Fisheries for Scabbardfish

The long-line fishery in Div. IXa for black scabbardfish is almost entirely centered on the port of Sesimbra. There are 15 vessels engaged in the fishery and the by-catch of the leafscale gulper shark (*Centrophorus squamosus*) and the Portuguese dogfish (*Centroscymnus coelolepis*) has tended to increase in recent years.

The observers on board longliners started to collect information in the beginning of 2005.

Neyman criterion was used to determine the number of trips to be performed per vessel at Sesimbra landing port, based on the number of trips recorded per vessel and its variance. The sample size determined 3 trips per month adopting a margin of error of 1 a 0.05 probability.

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The sampling effort is conditioned, forcing an enlargement of the number of samples so that the frequency distribution by harbor, by length classes of the species and by gear, type is representative. This is due to the geographic

nature of the Region (a nine island archipelago) and consequently to the existence of high regional importance harbors in the different islands.

To attain the landings compositions by size and by age, the sampling program is random simple and stratified by port, month and by fishing gear.

The estimated statistic population is composed by the total number of individuals of each species, landed through the year, in all ports of the Region and for all the fleet's components.

Tabela H4 – Predictable Landing Sampling for 2006 in Azores (ICES Sub-Area X). Sampling levels at length and age by species.

SPECIES	SPECIES (SCIENTIFIC NAME)	AREA	Sampling effort	
			Size # samples	Age # otoliths
Peixe espada preto	<i>Aphanopus carbo</i>	X	24	150
Peixe espada branco	<i>Lepidopus caudatus</i>	X	24	60
Alfonsins	<i>Beryx spp.</i>	X	192	240
Congrio	<i>Conger conger</i>	X	92	
Boca Negra	<i>Halargyreus dactylopterus</i>	X	240	360
Pescada dos Açores	<i>Melva aphyterygia</i>	X	48	60
Abrótea	<i>Phycis phycis</i>	X	276	300
Cherne	<i>Polyprion americanus</i>	X	192	60
Raia comum	<i>Raja clavata</i>	X	12	
outras raia	<i>Rajidae</i>	X	12	
Cavala	<i>Scomber japonicus</i>	X	192	150
Goraz	<i>Pagellus bogaraveo</i>	X	384	720
Besugo	<i>Pagellus acarne</i>	X	48	150
Chicharro	<i>Trachurus picturatus</i>	X	276	300
Bonito	<i>Katsuwonus pelamis</i>	North Atlantic	48	
Serra	<i>Sarda sarda</i>	North Atlantic	24	
Albacora	<i>Thunnus alabunga</i>	North Atlantic	12	
Patudo	<i>Thunnus obesus</i>	North Atlantic	24	
Espadarte	<i>Xiphias gladius</i>	North Atlantic	12	

According to the Plan for the Application of the Regulation (CE) N° 1543/2000 the collection of statistics on catches (landings / fishing log books) and on length frequencies of the species covered by the Regulation and found in Madeira must be carried out. These species are: bigeye tuna (*Thunnus obesus*), skipjack tuna (*Katsuwonus pelamis*), northern bluefin tuna (*Thunnus thynnus*), albacore (*Thunnus alalunga*), yellowfin tuna (*Thunnus albacares*) and swordfish (*Xiphias gladius*). This data collection must be supplemented by studies on the sex ratio and growth for horse mackerel (*Trachurus picturatus*), mackerel (*Scomber japonicus*) and black scabbardfish (*Aphanopus carbo*) - Table H5.

For each sample, this programme uses simple random sampling criteria. Its fundamental objective is to obtain the length composition of species from landings in ports, refrigerated warehouses and from on board local commercial vessels, for each month and for each gear type.

The statistical population to be estimated is made up of the total number of individuals of each species, landed throughout the year in all the Region's ports and for all components of the fleet that land fish in the RAM.

The sampling effort for 2006, is presented in the following table. Oversampling is proposed in some species because the sampling effort, calculated in accordance with the instructions issued in the Regulation (EC) 1581/2004, Appendix XV, taking in account the landings of the species in the years 2002, 2003 and 2004, is insufficient for achieving the objectives of the module.

Table H5: Sampling effort in number of samples and number of individuals to be collected in the local fishery.

Portuguese name and FAO code	English name	SPECIES	Number of fish to sample
CECAF FAO 34			
Peixe Espada Preto (BSF)	Black scabbardfish	<i>Aphanopus carbo</i>	1250
Cavala (MAS)	Mackerel	<i>Scomber japonicus</i>	1000
Chicharro	Horse mackerel	<i>Trachurus picturatus</i>	750
Highly Migratory Species, Atlantic, Indian, Pacific ocean			
Patudo*	Bigeye	<i>Thunnus obesus</i>	956
Gaiado*	Skipjack	<i>Katsuwonus pelamis</i>	913
Rabil*α	Northern bluefin	<i>Thunnus thynnus</i>	5
Voador*	Albacore	<i>Thunnus alalunga</i>	639
Albacora* α	Yellowfin	<i>Thunnus albacares</i>	4
Espadarte α	Swordfish	<i>Xiphias gladius</i>	7

* - These species may eventually be sampled on board commercial vessels.

α- We propose the derogation of these species, due to the fact that the sampling effort requested is irrelevant in the context of the landings of these species in the last three years (2002, 2003 and 2004).

- Financial aspects -

ICES Division IX/ IPIMAR

In order to accomplish the item H and I a large number of technicians and new contracts are involved. They are located in nine main ports and others less important. They work to obtain the landings length distribution of the species, the otoliths and other biological parameters of the priority species.

The needs for subcontracts (“Subcontracting and other costs”) are related with the work that must be carried out in NAFO Regulatory Area. In module E it was give a detailed explanation about those subcontracts. The observers on board collect information for itens H and I and additionally for item E. According with the volume of the information collected the subcontract costs were distributed by the items E, H and I proportionally.

ICES Division X/DOP

The gathering of lengths and, in some situations, of otholits will be conducted by the sampling technicians, hired by the University, concerning the principal fishing harbors of the region sampling technicians, hired by the University, concerning the principal fishing harbors of the region, will conduct the gathering of lengths and, in some situations, of otholits. In smaller harbors, the subcontracted technicians guarantee the collection of the information. This way, costs with personnel are reduced since it would be much more expensive to hire full time personnel. One superior technician and one sampler technician guarantee the collection and reading of otholits.

The costs of that sampling are specified in “Subcontracting and other costs”.

A higher technician and a lab technician guarantee the storing and reading of otholits.

The budget also comprises some months of work for another higher technician and a scientist, since they are responsible for coordinating the program.

CECAF 34.1.2/DRPM

See what we said in parameter *D. Collection of data related to fishing effort.*

Extended Programme

Complementary parameters will not be collected.

I. Other biological sampling (Appendix XVI)

Minimum Programme

- Technical aspects -

ICES Division IXa/IPIMAR

The collection of data relating to growth and sex ratio at length and age and maturity stage for species listed in Appendix XVI will be obtained using market samples mainly. In addition it will be used data obtained in the research surveys when necessary or collected on commercial vessels by the discards sampling team.

The Tables H.1 and H.2 show the species considered for the other biological data required according to the Regulation (Appendix XVI), for ICES Divisions and NAFO area.

Fecundity data will be collected for Sardine, Horse Mackerel and Mackerel in a triennial basis.

ICES Division X/DOP

The biological sampling of catches in 2006 will continue as established for carrying out the NP02.

To obtain growth equations in length and weight, sexual maturation (macroscopic) and the proportion of sexes, the same examples from which otoliths are extracted can be used to study ages.

CECAF 34.1.2/DRPM

The biological sampling of catches in 2006 will continue as established for the NP2002 covering the mandatory species determined by the Regulation (EC) 1639/2001 amended by Regulation (EC) 1581/2004.

To obtain growth equations in length and weight, sexual maturation (macroscopic) and the proportion of sexes for the black scabbardfish, horse mackerel and mackerel, the same specimens from which otoliths are extracted will be used to study ages, and in most cases it is therefore not necessary to use complementary sampling.

Extended Programme

Complementary parameters will not be collected.

- Financial aspects -

CECAF 34.1.2/ DRPM

For “**Subcontracting and other costs**”, see what we said in parameter *D*.
Collection of data related to fishing effort.

ICES Division X/DOP

It is necessary the presence of a higher technician and a lab technician to guarantee the sampling and data treatment.

MODULE OF EVALUATION OF THE ECONOMIC SITUATION OF THE SECTOR

J. Collection of economic data by group of vessels

1. Groups of vessel

Minimum Programme

- Technical aspects -

Economic data will be monitored, having in mind the Reg. 1543/2000, the outcomes of the following workshops meetings:

- [IFREMER/Paris, May 2004;](#)

- SGEGA in Data Collection and economic indicators, Brussels October 2004;
and the outcomes of the scheduled workshop: IREPA, Italy, November 2005.

Mainland based fleet/DGPA

For such it is proposed that a significant number of fishing companies will be monitored (according to defined criteria) on an annual basis.

This survey will be carry out by means of statistical sampling as described below.

Universe - Fishing Vessels Registered in Continental Portugal
Stratification Criterion - fleet segment

Table J.1 - Sample size for precision -r- fixed =0.05

N=	8601
CV=	0,8
Z(a/2)=	1,645
a=	0,05
r=	0,05
n=	641

Table J.2 - Distribution of sample by strata: Optimum or Neyman Allocation

i	Stratum		Ni	sdi	Ni*sdi	ni
1	4K1-1	Polyvalent LOA<12 m	7755	1.7	13183.5	524
2	4k2-1	Fix gears 12LOA<24	470	2.9	1363.0	54
3	4k2-2	Fix gears 24LOA<40	46	2.5	115.0	5
5	4k3-1	Trawl 12LOA<24	28	3.4	95.2	4
6	4k3-2	Trawl 24LOA<40	78	3.9	304.2	12
7	4k4-1	Purse seine 12LOA<24	142	3.5	497.0	20
8	4k4-2	Purse seine 24LOA<40	27	1.1	29.7	1
9	4k5-1	Polyvalent 24LOA<40	22	2.8	61.6	2
10	4k5-2	Polyvalent LOA>=40	33	14.5	478.5	19
Total					16127.7	641

Nevertheless, as a result of the experience achieved in 2004 and 2005, it could be necessary to carry out some modification, to optimise all the planning in order to achieve higher quality level results.

Azores based fleet/DRPA

Methodology

1. Description – The information will be obtain by the application of questioners;
2. Objectives – Evaluate the economic situation of the fleet segments in the Azores;
3. Universe – Fishing Vessels Registered in the Azores Region;

Interviews

To guarantee the precision level recommend (Level 1), will be realize personal interview to 25% of the Universe inquired.

Stratification Criterion - fleet segment

The stratification of the fleet follow the establish criteria in the Appendix III of the Reg. 1543/2000.

Madeira based fleet/DRPM

The methodology for the collection of data in this module was first implemented in 2004 and will continue in 2006 trough the realisation of direct inquiries aiming to cover approximately 15% of active fishing vessels, in an annual basis, in accordance with the criteria defined in the above mentioned Regulation. The Universe to sample will be the fishing vessels registered in Madeira and a random stratified design will be used in the survey.

– Financial aspects –

Mainland based fleet/DGPA

The budget for this parameter allocated in “**Subcontracting and other costs**” is related with the subcontract with a statistician and with a informatics technician.

Madeira based fleet/DRPM

For “**Subcontracting and other costs**”, see what we said in parameter *D*.

Azores based fleet/DRPA

The costs allocated are related with “**travelling costs**” and “**staff costs**” and are necessary to carry out the inquiry in the field.

Extended Programme

Complementary parameters will not be collected.

K. Data Collection from Fish Processing Industry

Minimum Programme

– Technical aspects –

Mainland fish processing industry/DGPA

Having in mind the experience achieved with the Pilot Project in 2003, we are in position to carry out a survey covering the Fish Processing Industry in the Mainland.

The methodology for the collection of data is the direct inquiries, using questionnaires and in accordance with the criteria defined in the Regulation.

Madeira fish processing industry/DRPM

The beginning of the collection of data in this module is foreseen to 2006 through the realisation of inquiries aiming to cover all Madeira fish processing industries, in an annual basis, filling all the parameters defined in Regulation, Appendix XIX of the Minimum Programme.

Azores fish processing industry/DRPA

Methodology

1. Description – The information will be obtain by the application of questioners;
2. Objectives – Evaluate the economic situation of the Fish Processing Industry in the Azores Region;
3. Universe – The Fish Processing Industry in the Azores Region;

Interviews

Will be realize personal interview to the 100% of the Universe inquired

- Financial aspects -

Mainland fish processing industry/DGPA

See what we said in *module D. Collection of data related to fishing effort.*

Madeira fish processing industry/DRPM

See what we said in *module D. Collection of data related to fishing effort.*

Azores fish processing industry/DRPA

See what we said in *module J. Collection of economic data by group of vessels.*

Extended Programme

Complementary parameters will not be collected.

CO-ORDINATION

Co-ordination Database

It is foreseen for 2006 the conclusion of Portugal Database.

Co-ordination Others

The Coordination includes the costs associated with the costs incurred by the participation of National Institutes in working groups and workshops that are directly related to the obligations laid out in Regulation.

The meetings participation, the costs and its specification are presented in the Fin Form Table: Coordination meetings 2006

We draw the attention to the Commission to include the meeting of **the Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES areas VIII and IX [WGACEGG]** in the list of funded meetings. In the table of coordination meetings for 2006 are presented for funding 8 meetings with similar TORs. The WGACEGG plans and coordinates surveys of priority 1 for species with priority 1. There are no reasons for exclude the WG of the funding.

The two first itens of the TOR (ICES Resolution, 2G12), propose:

- “a) plan and coordinate egg surveys in ICES areas VIII and IX and standardise analysis procedures;
- b) plan and coordinate acoustic surveys in ICES areas VIII and IX and standardise analysis procedures;”

In order to develop and enhance the exchange of essential information to carry out all the routines previewed in the Portuguese National Programme, DGPA intends to schedule some meetings with the Spanish counter part.

NATIONAL BUDGETS BY PARAMETER – MINIMUM PROGRAMME

MINIMUM 2004		Staff costs	Travelling expense	Durables	Consumables	Vessel costs	Sea Allowance	Computing costs	Subc. and other	Summary
Chapter II	c. Fishing capacities									-
	d. Fishing effort	92 632	40 722		300				44 680	178 333
Chapter III	e. Catches and landings	47 647	35 023						40 827	123 497
	E. Discards	85 748	25 521	2 050	2 031				64 732	180 081
	e. Recreational Fisheries									-
	f. C.P.U.E.									-
	G. Surveys	47 457	19 221	-	67 048	513 500	52 962	-	5 200	705 388
	H. Age/Length composition of Landing	524 100	9 597	20 400	74 387			7 000	102 106	737 589
	H. Age/Length composition of Discard	35 077	35 936	-	11 929	-	-	-	24 500	107 441
	I. Other biological parameters	280 419			51 613				30 911	362 943
Chapter IV	j. Economic data by group of vessels	26 461	5 041						14 275	45 777
	k. Economic data for processing indus	22 935	1 463						14 275	38 673
Coordination tasks	Data Base	44 117							27 265	71 382
	Others (Meetings)		82 684							82 684
TOTAL		1 206 593	255 206	22 450	207 308	513 500	52 962	7 000	368 771	2 633 789

NATIONAL BUDGETS BY PARAMETER – EXTENDED PROGRAMME

EXTENDED 2004		Staff costs	Travelling expense	Durables	Consumables	Vessel costs	Sea Allowance	Computing cost	Subc. and other	Summary
Chapter II	c. Fishing capacities									-
	d. Fishing effort									-
Chapter III	e. Catches and landings									-
	E. Discards									-
	e. Recreational Fisheries									-
	f. C.P.U.E.									-
	G. Surveys	30 063	577	-	8 000	370 500	34 692	-	-	443 832
	H. Age/Length composition of Landings									-
	H. Age/Length composition of Discards									-
	I. Other biological parameters									-
Chapter IV	j. Economic data by group of vessels									-
	k. Economic data for processing industry									-
Coordination tasks	Data Base									-
	Others (Meetings)									-
TOTAL		30 063	577	-	8 000	370 500	34 692	-	-	443 832

ANNEX I – SAMPLING METHODOLOGY

1. Definition of sample

The definition of the sample varies according to the universe and type of parameter to be estimated, always taking the precision level defined into account. Therefore, bearing in mind the type of parameter to be estimated (average or total value), the size of the population N , the relative precision level r , the confidence level α , the coefficient of variation of the population γ , the sample size n was determined using the following formula:

$$n = \frac{1}{\frac{r^2}{Z^2\gamma^2} + \frac{1}{N}}$$

1.1 Stratification and division of sample

The sample was distributed among the relevant strata with the principal objective of minimising the sampling error to be obtained for the stratification variable. The optimum Neyman allocation, which guarantees a minimum variance for the variable used in the stratification, was used for this purpose.

The distribution of the sample among the strata was obtained by the following formula:

$$n_h = \frac{N_h S_h}{\sum_h N_h S_h} n$$

where:

h stratum index

n_h sample size attributed to stratum h

n overall size of sample

N_h size of universe in stratum h

S_h standard deviation of stratum h stratification variable

Slight adjustments were subsequently made to the values calculated so as to obtain reasonable values for the coefficient of variation associated to each stratum.

The coefficient of variation was estimated by:

$$C.V.(A) = \frac{\sqrt{\sum_h \hat{\text{var}}(A_h)}}{\sum_h A_h} \times 100$$

In which the variance estimated in each stratum h is given by:

$$\hat{\text{var}}(A_h) = \frac{N_h}{n_h} (N_h - n_h) S_h^2$$

where S_h^2 represents the variance of the stratification variable in the population of stratum h , which is calculated by the formula:

$$S_h^2 = \frac{\sum_{i=1}^{N_h} (a_{hi} - \bar{a}_h)^2}{N_h - 1}$$

where \bar{a}_h is the average value of the stratification variable of stratum h , given by:

$$\bar{a}_h = \frac{\sum_{i=1}^{N_h} a_{hi}}{N_h}.$$

1.2. Selection of sample

The sample will be selected independently in each stratum by a systematic process, with a selection interval determined by the quotient between the size of the universe of the stratum and the size of the sample it is intended to study within it.

The units will be ordered in each stratum, following which a serial number will be attributed to each unit.

The systematic selection interval is given by:

$$I_h = \frac{N_h}{n_h}$$

where N_h is the size of the universe of the generic stratum h and n_h is the respective size of the sample.

The serial number NO of the first unit to be selected in each stratum h is given by a computer-generated random number equal to or greater than 1 and less than the value of the systematic selection interval of the stratum concerned.

The serial numbers of the units selected for the sample are obtained by means of the following expression:

$$nord = NO_h + k * I_h$$

where

$$k = 0, 1, \dots, (n_h - 1)$$

3. Substitution of the survey unit

The objective of determining substitution rules is to allow one unit to be substituted by another when there is no other alternative, but without breaking the rules of random selection, and respecting the size of the sample.

Data collection of this type envisages units being substituted only in the event of it being impossible to contact the shipowner or someone who can provide the information requested in the collection.

For substitution purposes an extra sample of the same size as the effective sample is always selected in each stratum when possible, and should be used if necessary.

An extra unit should be chosen for the unit of the same stratum, as geographically close as possible to the effective unit to be substituted.

ANNEX II – CONVERSION FACTORS

TABELA 1 - FACTORES DE CONVERSÃO DE PESCADO FRESCO/REFRIGERADO VENDIDO EM LOTA

Arte	Espécie					Factor
Arrasto	Tamboril	Lula	Congro	Gamba	Faneca	1,05
	Pargo	Choupa	Camarão	Badejo	Buzina	
	Robalo	Camarão Vermelho	Carapau	Búzio	Cavala	
	Azevia	Linguado	Polvo	Mero	Rodovalho	
	Pescadas	Choco	Pregado	Verdinho	Cartas	
	Ameijoa	Galo	Salmonete	Solha	Besugo	
	Ruivo	Sargo veado	Sarda	Goraz	Raia	
		Lagostim				1,4
Cerco	Carapau	Anchova	Biqueirão	Sarda	Cavala	1,05
		Sardinha				1,025
	Dourada	Pargo	Polvo	Lula	Choco	1,25
	Lampreia	Congro	Corvina	Robalo	Sargo	1,2
	Ferreira	Choupa	Merma	Azevia	Pregado	
		Rodovalho				
		Todas (excepto as acima)				1,1
Polivalentes						
		Lampreia				1,45
Polivalente /Artesanal						
	Robalo	Azevia	Goraz	Pargo	Berbigão	1,4
		Polvo				1,45
		Peixe espada preto				1,25
		Todas (excepto sardinha e as acima)				1,35
Polivalente/ P.I.N.A						
	Todas (excepto sardinha)					1,1

Tabela 2 - Factores de conversão de peso desembarcado para peso vivo.

Code	English Name	Scientific name	Presentation	Factor	Portuguese Name
ALB	Albacore	Thunnus alalunga	Frozen, gutted, head off	1,29	Atum voador
ANE	European anchovy	Engraulis encrasicolus	Fresh/chilled	1,04	Biqueirão
ANF	Anglerfishes nei	Lophiidae	Frozen, gutted	1,2	Tamboril
			Fresh/chilled, gutted	1,16	Tamboril
ANG	American angler	Lophius americanus	Frozen/gutted	1,2	Tamboril americano
			Frozen, gutted, head off	2,3	Tamboril americano
BET	Bigeye tuna	Thunnus obesus	Fresh/chield	1,04	Atum patudo
			Fresh/chield, gutted	1,3	Atum patudo
			Frozen, gutted, head off	1,29	Atum patudo
BFT	Northern bluefin tuna	Thunnus thynnus	Frozen, gutted, head off	1,29	Atum rabilho
BLI	Blue ling	Molva dypterygia	Fresh/chilled, gutted	1,25	Maruca azul
BLL	Brill	Scophthalmus rhombus	Fresh/chilled, gutted	1,15	Rodovalho
BLU	Bluefish	Pomatomus saltatrix	Fresh/chilled	1,05	Anchova
BON	Atlantic bonito	Sarda sarda	Frozen, gutted, head off	1,43	Sarrajão
CAP	Capelin	Mallotus villosus	Frozen	1	Capelim
CAT	Wolffishes (=Catfishes) nei	Anarhicas spp	Fillets, boneless, salted wet light	3,97	Peixes-lobo
			Fresh/chilled, gutted	1,2	Peixes-lobo
			Frozen, gutted, head off	1,8	Peixes-lobo
			Frozen, fillets, skin off	3,97	Peixes-lobo
			Salted dry light, gutted scaled	2,35	Peixes-lobo
			Frozen gutted	1,2	Peixes-lobo
			Frozen scaled	1,6	Peixes-lobo
			Salted dry light, Scaled	2	Peixes-lobo
COD	Atlantic cod	Gadus morhua	Salted wet light, gutted, scaled	3	Bacalhau
			Frozen fillets, skin off, boneless	2,6	Bacalhau
			Frozen, gutted	1,22	Bacalhau
			Frozen scaled	1,66	Bacalhau
			Frozen fillets	2,6	Bacalhau
			Frozen, head off, gutted, tail off	1,6	Bacalhau
			Frozen, head off, gutted	1,49	Bacalhau
			Salted dry	4,3	Bacalhau
COE	European conger	Conger conger	Frozen, gutted	1,1	Congro, Safio
DAB	Common dab	Limanda Limanda	Frozen, gutted	1,11	Solha escura mares do norte
DEM	Largeeye dentex	Dentex macrophthalmus	Fresh/chilled, gutted	1,11	Cachucho

Code	English Name	Scientific name	Presentation	Factor	Portuguese Name
ELE	European eel	Anguilla anguilla	Fresh/Chilled	1	Enguia
FLE	European flounder	Platichthys flesus	Fresh/Chilled, gutted	1,12	Solha
GHL	Greenland halibut	Reinhardtius hippoglossoides	Frozen, gutted	1,05	Palmeta
			Frozen, gutted, head off	1,35	Palmeta
			Frozen, gutted, head off, tail off	1,45	Palmeta
GUX	Gurnards, searobins nei	Triglidae	Fresh/Chilled, gutted	1,04	Cabras
HAD	Haddock	Melanogrammus aeglefinus	Frozen, gutted	1,2	Arinca
			Frozen, fillets, boneless, skin off	3,37	Arinca
			Frozen, gutted, head off	1,6	Arinca
			Salted wet, scaled	2,34	Arinca
HAL	Atlantic halibut	Hippoglossus hippoglossus	Frozen, gutted	1,11	Alabote do Atlântico
			Frozen, gutted, head off	1,25	Alabote do Atlântico
HKE	European hake	Merluccius merluccius	Fresh/chilled, gutted	1,17	Pescada branca
			Frozen, gutted	1,6	Pescada branca
			Frozen, gutted, head off	1,67	Pescada branca
			Frozen, fillets, skin off	2,27	Pescada branca
			Fresh/chilled, gutted	1,17	Pescada prateada
HKS	Silver hake	Merluccius bilinearis	Frozen, gutted	1,6	Pescada prateada
			Frozen, gutted, head off	1,35	Abrótea branca
HKW	White hake	Urophycis tenuis	Salted wet scaled	2,46	Abrótea branca
			Fillets frozen, skin off	3,8	Abrótea branca
			Frozen, gutted, head off	1,67	Pescadas
HKX	Hakes nei	Merluccius spp.	Frozen, gutted, head off	1,67	Pescadas
HOM	Atlantic horse mackerel	Trachurus trachurus	Fresh/Chilled	1,04	Carapau
JAX	Jack and horse mackerels nei	Trachurus spp	Fresh/Chilled	1,04	Chicharro, carapaus nep
LEP	Spiny gurnard	Lepidotrigla dieuzeidei	Fresh/Chilled	1,04	Ruivo
LIN	Ling	Molva molva	Fresh/Chilled, gutted	1,12	Maruca
			Frozen, gutted, head off	1,4	Maruca
			Frozen, fillets, skin off	2,3	Maruca
LUM	Lumpfish(=Lumpsucker)	Cyclopterus lumpus	Frozen, gutted, head off	1,65	Peixe-lapa
MAC	Atlantic mackerel	Scomber scombrus	Fresh/Chilled	1,04	Sarda, foguetes

Code	English Name	Scientific name	Presentation	Factor	Portuguese Name
MON	Angler	Lophius piscatorius	Frozen, gutted,head off Fresh/Chilled, gutted	1,47 1,2	Sarda, foguetes Tamboril
MUL	Mullet	Mugilidae	Frozen, gutted Fresh/Chilled	1,15 1,04	Tamboril Tainhas nep
MUR	Red mullet	Mullus surmuletus	Fresh/Chilled, gutted	1,1	Tainhas nep
MUX	Surmullet(=Red mullets)	Mullus spp	Fresh/Chilled	1,04	Salmonete legítimo
PAX	Pandoras nei	Pagellus spp	Fresh/Chilled	1,04	Salmonetes
PIL	European pilchard(=Sardine)	Sardine pilchardus	Fresh/Chilled/gutted	1,11	Besugos, bicas e gorazes
PLA	American plaice	Hippoglossoides platessoides	Fresh/Chilled	1,04	Sardinha
PLE	European plaice	Pleuronecte platessa	Frozen, gutted,head off	1,2	Solha Americana
POK	Saithe (=Pollock)	Pollachius virens	Frozen, gutted,head off, tail off Frozen, gutted	1,38 1,11	Solha Americana Solha
			Frozen, gutted,head off	1,2	Escamudo
			Frozen, gutted,head off	1,38	Escamudo
			Frozen, fillets, skin off	2,43	Escamudo
			Salted wet, scaled	2,34	Escamudo
POL	Pollack	Pollachius pollachius	Frozen, gutted,head off	1,38	Juliana
RED	Atlantic redfishes	Sebastes spp	Frozen	1	Cantarilhos do norte
			Frozen, gutted	1,2	Cantarilhos do norte
			Frozen, fillets, skin off	3,6	Cantarilhos do norte
			Frozen, gutted,head off	1,91	Cantarilhos do norte
			Frozen, gutted,head off, tail off	1,98	Cantarilhos do norte
			Japonesse cut, frozen	2	Cantarilhos do norte
	Golden redfish	Sebastes marinus	Frozen, gutted	1,2	Peixe vermelho
			Frozen, gutted,head off	1,91	Peixe vermelho
RNG	Roundnose grenadier	Coryphaenoides rupestris	Frozen, fillets, skin off	3,8	Lagartixa da rocha
			Frozen, gutted,head off	1,92	Lagartixa da rocha

Code	English Name	Scientific name	Presentation	Factor	Portuguese Name
			Frozen, gutted, head off, tail off	2	Lagartixa da rocha
			Frozen	0,95	Lagartixa da rocha
SAL	Atlantic salmon	Salmo salar	Frozen, gutted	1,15	Salmão do Atlântico
SAN	Sandeels(=Sandlances)	Ammodytes spp	Fresh/Chilled	1,04	Galeotas
SBG	Gilthead seabream	Sparus aurata	Fresh/Chilled, gutted	1,11	Dourada
SBP		Sparus pagrus	Fresh/Chilled	1,11	Pargo legítimo
SBR	Blackspot(=red) seabream	Pagellus bogaraveo	Fresh/Chilled, gutted	1,11	Goraz
SKA	Skates	Raja spp	Frozen wings	3,7	Raia
			Frozen wings, skin off	3,86	Raia
SOL	Common sole	Solea vulgaris	Fresh/Chilled, gutted	1,11	Linguado legítimo
SPR	European sprat	Sprattus sprattus	Fresh/Chilled	1,04	Espadilha
SRG	Sargo breams, nei	Diplodus spp	Fresh/Chilled, gutted	1,11	Sargos
SWO	Swordfish	Xiphias gladius	Fresh/Chilled, gutted, head off	1,32	Espadarte
TRS	Sea trout	Salmo trutta	Frozen, gutted	1,15	Truta marisca
TUR	Turbot	Psetta maxima	Frozen, gutted	1,1	Pregado
USK	Tusk(=Cusk)	Brosme brosme	Frozen, gutted	1,2	Bolota
WHG	Whiting	Merlangius merlangus	Fresh/Chilled, gutted	1,21	Badejo
WIT	Witch flounder	Glyptocephalus cynoglossus	Frozen, gutted	1,11	Solhão
			Frozen, gutted, head off	1,35	Solhão
CRUSTACEANS					
CRE	Edible crab	Cancer pagurus	Frozen	1,5	Sapateira
CSH	Common shrimp	Crangon crangon	Fresh/chilled	1,18	Camarão negro
			Head off, skin off	2,9	Camarão negro
NEP	Norway lobster	Nephrops norvegicus	Frozen	1	Lagostim
			Frozen, head off	2,5	Lagostim

Code	English Name	Scientific name	Presentation	Factor	Portuguese Name
CEPHALOPODS					
CTC	Common cuttlefish	<i>Sepia officinalis</i>	Fresh/chilled	1	Choco
SQC	Common squids	<i>Loligo</i> spp	Dried, gutted	4	Lula/pota
			Tubes, wings off, skin off	2,9	Lula/pota
			Rings frozen	3	Lula/pota
MOLLUSCS (except Cephalopods)					
CHL	Northern quahog	<i>Mercenaria mercenaria</i>	Fresh/chilled, shell off	7,5	Clame
CLS	Sand gaper	<i>Mya arenaria</i>	Fresh/chilled, shell off	5,5	Clame da areia
MUS	Blue mussel	<i>Mytilus edulis</i>	Fresh chilled	1	Mexilhão
			Frozen, shell off	5	Mexilhão
OYX	Flat oysters nei	<i>Ostrea</i> spp.	Fresh chilled	1	Ostras planas
			Frozen, shell off	8	Ostras planas
PEE	Common periwinkle	<i>Littorina litorea</i>	Fresh/chilled, shell off	4,17	Litorinas
SCX	Scallops nei	Pectinidae	Fresh/chilled, shell off	8,3	Vieiras e Leques

CORRIGENDUM TO THE PORTUGUESE NP 2006

H. Biological sampling of catches: composition by age and by length (Appendix XV)

ICES Division IXa/IPIMAR

3 – Composition by lengths and age of discards of fish Bottom Trawl Fisheries

The National Programme 2006 needs to be corrected in pages 50 and 51 and Table H.3. A mistake was made in the number of samples (trips) to be collected for discards because it was considered a precision level of 10% instead of 25% to the required sampling precision level for annual estimates of discards (Commission Regulation (EC) No 1639/2001- Chapter III).

For this reason, the number of samples to be collected was recalculated regarding that precision level (25%).

The number of samples to be collected in bottom trawl fisheries was estimated from the total number of trips of the fleet (vessels above 15 m), for the year 2004. The ports were aggregated by area (North, Centre and South), due to high mobility of vessels between ports. The criterion considered was the fishing areas and not the landing ports as considered until now (NP 2006).

The Neyman allocation was then applied to distribute the number of samples among the three geographical areas. Crustacean Trawl Fleet and Fish Trawl Fleet were treated separately because they are 2 distinct fleet segmentations. The Portuguese crustacean trawl fleet operate in waters south of Lisbon exclusively.

The Table (Table H.3) shows the new sampling scheme to be implemented for the bottom trawl fleet, for the year 2006 (and also for 2005).

Table H.3. - Distribution of Sample among the strata: Optimum or Neyman Allocation.

Fish Trawl Fleet				
Area Stratum	No of trips			No of samples ni
	Ni	sdi	Ni*sdi	
North	5404	65,3	352761,5	15
Center	2661	66,7	177586,5	8
South	1475	56,7	83592,5	4
Total No samples/year	9540	188,7	613940,5	27

Crustacean Trawl Fleet				
Area Stratum	No of trips			No of samples ni
	Ni	sdi	Ni*sdi	
North	0	0,0	0,0	0
Center	402	30,4	12204,3	1
South	2006	44,5	89278,8	9
Total No samples/year			101483,1	11