ANNUAL REPORT – 2015

PORTUGUESE PROGRAMME FOR THE COLLECTION OF FISHERIES DATA

Lisbon, May 31, 2016

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INDEX

I. General framework

This report gives the results of the Portuguese National Programme (NP) for the collection of fisheries data in 2015 under the *Commission Regulation (665/2008)* and *Commission Decision (2010/93/EC) adopting a multi annual Community programme pursuant to Council Regulation (EC) No 199/2008 establishing a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy*, hereafter referred to as "DCF".

The format of this report is structured following the most recent guidelines from the Commission[1]. The Annual Report (AR) is structured in a number of modules. In the following chapters a description is given of the activities related to the DCF that have been carried out by Portugal.

A major methodological change was made to the fleet economic data during 2015, which is explained in the report.

Where relevant, reference has been made to the organisation responsible for the information. In the results per area:
  i) The mainland sub-area of the Portuguese EEZ corresponds to ICES Sub-area IX and, when referring to local fishing, to ICES Division IXa.
  ii) The Azores Grounds of the Portuguese EEZ corresponds to ICES Sub-area X.
  iii) The Madeira sub-area of the Portuguese EEZ corresponds to CECAF Division 34.1.2.

A comprehensive and updated list of the derogations valid for 2015 is provided in table I.A.1. There are no bilateral or multilateral agreements in force.

Derogation for sampling 43 required stocks in ICES Sub-area X is also mentioned in table I.A.1. Due to the fact of no fishery occurring in this region and, according to the exceptions rules in the Commission Decision 2010/93/EC, the species for which stock-related variables collection was asked for derogation are: *Anguilla anguilla, Argentina spp., Argyrosomus regius, Auxis rochei, Cancer pagurus, Carcharhinus falciformis, Centrophorus squamosus, Centroscymnus coelolepis, Centroscymnus crepidater, Cetorhinus maximus, Coryphaenoides rupestris, Deania calcea, Dicentrarchus labrax, Euthynnus alletteratus, Galeus melastomus, Homarus gammarus, Hoplostethus atlanticus, Istiophoridae, Lamna nasus, Loligo vulgaris, Merlangius merlangus, Microchirus variegatus, Microstomus kitt, Molva molva, Myliobatis aquila, Pandalus spp., Pleuronectes platessa, Pollachus pollachius, Psetta maxima, Pteroplatytrygon violacea, Raja montagui, Raja naevus, Rajidae, Salmo salar, Scophthalmus rhombus, Sepia officinalis, Shark-like Selachii, Squalus acanthias, Squatina squatina, Thunnus albacares, Thunnus thynnus, Trachurus trachurus* and *Trisopterus spp.*.

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[1] *Guidelines for Submission of Annual Reports on the National Data Collection Programmes under Council Regulation (EC) 199/2008, Commission Regulation (EC) 665/2008 and Commission Decision 2010/93/EU* (07.04.2016).

II. National data collection organisation

II.A. National correspondent and participating institutes

National Correspondent

The National Correspondent representing Portugal is:

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Participating Institutes

There are five organizations/institutes involved in the planning and implementation of the Portuguese Programme for the Collection of Fisheries Data:

Direcção-Geral dos Recursos Naturais, Segurança e Serviços Marítimos/Directorate General for Natural Resources, Safety and Maritime Services (DGRM)
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Website: www.dgrm.mam.gov.pt

DGRM is responsible for gathering the data related with economic variables (fleet, aquaculture and processing industry) and transversal variables in Mainland.

Instituto Português do Mar e da Atmosfera / Portuguese Institute for Sea and Atmosphere (IPMA)
Manuela Azevedo
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E-mail: mazevedo@ipma.pt
Website: www.ipma.pt

IPMA is the Portuguese Institute responsible for on-shore and at-sea sampling for the Mainland fleet operating in the Iberian Fishing Ground and exploiting stocks assessed by ICCAT as well as on-board sampling (unsorted catches) for NAFO Areas and North Sea and Eastern Artic and IOTC. IPMA is also responsible for conducting scientific surveys in the Iberian Fishing Ground and participates on the Flemish Cap Groundfish Survey.

Direção Regional das Pescas da Região Autónoma dos Açores (RAA)
Luís Costa
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Fax:: +351 292 3207811

E-mail: Luis.FM.Costa@azores.gov.pt

RAA is responsible for gathering data related with Economic variables in the Autonomous Region of Azores.

IMAR - Instituto do Mar do Departamento de Oceanografia e Pescas / IMAR - Institute of Marine Research of the Department of Oceanography and Fisheries (IMAR/DOP)
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IMAR/DOP is an Institute of Marine Research within the Department of Oceanography and Fisheries from the University of the Azores which is responsible for the collection of scientific data under the Data Collection Framework, namely Metier and Stock-related variables, and also data related to transversal variables (Effort and Landings). IMAR/DOP is also responsible for the provision of scientific advice for the fisheries sector of the Autonomous Region of the Azores.

Direção Regional de Pescas da Região Autónoma da Madeira (DRPM/RAM)
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The collection of data from the fisheries sector of the Autonomous Region of Madeira, in the framework of this programme, is carried out by the Madeira Service Directorate of Fisheries Research and Development (DSIDP), which is a branch of the Regional Directorate of Fisheries of Madeira from the Agriculture and Fisheries Secretary of the Regional Government of Madeira.

A website has been established to inform involved partners, the EU Commission and the public about the Portuguese implementation of the EU Data Collection framework in accordance with Commission Regulation (EC) 665/2008 article 8(2). The website is under DGRM webpage (http://www.dgrm.mam.gov.pt/xportal/xmain?xpid=dgrm&selectedmenu=1471687&xpgid=genericPageV2&conteudoDetalhe_v2=1484690)

In 2015, one national co-ordination meeting took place on 10th April, with the participation of all partners. European Commission was invited to attend this meeting as established in article 25.4 of Regulation (EU) nº 1380/2013, of 11 December. The main subjects were:

- Evaluation of the work 2014, namely data calls, tasks completed, main difficulties and how they were overcome, RCM and other meetings and annual report (changes and dates);
- Information regarding the National Correspondents meeting that took place on 25th March, in Brussels,
- DCF in the Framework of the CFP reform (landing obligation, data on aquaculture, regional cooperation, data quality)
- Information regarding funding through EMFF
- Data collection and meetings in 2015

II.B. Regional and International coordination

II.B.1. Attendance of international meetings

Table II.B.1. indicates which meetings have been attended by Portuguese representatives during 2015. Portugal has ensured its participation in the relevant meetings and workshops for international co-ordination.

II.B.2. Follow-up of Regional and International Recommendations and agreements

All recommendations and the agreements from the RCMs, Liaison Meeting, STECF and survey planning groups, believed relevant to the AR year and to Portugal are listed in table II.B.2.

III. MODULE OF EVALUATION OF THE FISHING SECTOR

III.A. General Description of the fishing sector

The national fishing fleet is extremely diverse, differing between zones. This is related to the activities carried out and the fishing technology used in each zone. It is dominated in numbers by small wooden vessels, many of which are open decked. This reflects the fundamentally artisanal nature of the activity, which is nevertheless extremely important for a significant part of the coastal communities.

In terms of national distribution, the fishing fleet is distributed between 45 Registration Ports. Of these, 27 are Port Authorities and 18 are Maritime Delegations. On Mainland are located 32 of the main ports, 11 are in the Autonomous Region of the Azores and 2 are in the Autonomous Region of Madeira.

The national waters can be divided into three large fishing zones: the sub-area of the EEZ of the Mainland and those of the Autonomous Regions of the Azores and Madeira.

The sub-area of the EEZ of the Mainland has a narrow continental shelf and is located in a transitional area in terms of productivity, which in turn controls production. The sub-area is characterised by a great variety of species, none of which, however is abundant. On the Mainland, fishing activities are carried out on grounds close to the shore, and they exploit a small group of species (chub mackerel, mackerel, sardine, horse mackerel, hake, silver scabbard fish, octopus and clams).

The Autonomous Regions of the Azores and Madeira are characterized by a narrow (or absent) continental shelf. Given their oceanic nature, the fishing fleet tend to distributed through different islands coasts and seamounts which make the Azores and Madeira a particular case in Portuguese fisheries. In the Azores, the blackspot seabream is the most important demersal species, while in Madeira the black scabbard fish is the most important.

Mainland

<u>Fisheries in ICES sub-areas I, II, XII, XIV, NAFO Div. 1F and Sub-area 3</u>

In 2015 the Portuguese fleet operating in the traditional grounds of both Divisions I and II, was composed by 2 trawlers using bottom trawl gears. The fishery in the international waters of Div. IIa was carried out by 1 trawler fishing with a pelagic trawl gear.

<u>Fisheries in ICES Sub-areas I and II (Norway and Svalbard) and international waters (Div.IIa)</u>

In 2015, the Portuguese nominal catches recorded 2 433 ton: 1 926 ton proceeding from the Division IIa and 507 ton proceeding from the Division Ib.

For the period from 1993 till 2015, cod (*Gadus morhua*) is the most important species caught, with the exception of 1993 in Division IIa.

<u>Sebastes Mentella fishery in ICES DIV. XII, XIVb and NAFO Div. 1 F</u>

The redfish Portuguese trawl pelagic fishery in the area started in 1994, at first in the Irminger Sea and later wide spread till NAFO divisions 1F, 2H, 2J and 3K. In 2015 there was no activity in those areas.

Fishery in the NAFO Area

In 2015, the Portuguese nominal catches proceeding from NAFO Regulatory Area have reached 19 745 ton, a decrease of 425 ton comparing to 2014.

Redfish is the most caught species by the Portuguese fleet in NAFO Area, representing 53% in 2015 (10 450 ton) of the overall catch, followed by Codfish, with catches of 6 033 ton and Greenland Halibut, with catches of 1 874 ton.

In 2015 the fishing effort was 1 496 fishing days.

Fishery in the Mediterranean and Black Sea

In 2015, there were 2 vessels operating in this area, ranging 167 to 224 GT and using exclusively traps. This fleet caught 95 ton of shrimp.

In 2015 the fishing effort was 467 fishing days.

There was no activity in the Black Sea.

Fishery in the WECAFC

In 2015 there were 2 vessels operating in the area, using surface longlines and catching ICCAT tuna and tuna-like species. Total catches in 2015 are 113 ton.

Bottom Trawl Fishery in Div. IXa

The bottom trawl fishery comprises two fleet components e.g., the trawl fleet catching demersal fish (65-mm mesh size) and the bottom trawl fleet directed at crustaceans (>=55 mm mesh size for shrimps and above 70 mm for Norway lobster). In 2015 about 75 vessels operate in this fishery, 26 of which are licensed for crustaceans.

The catches of this trawl fishery represents 15 % of the total landed in Div. IXa (Portuguese coast).

The trawl fleet component targeting fish (hake, horse mackerel, axillary sea breams, pouting, octopus, squids, blue whiting) operates off the entire Portuguese coast mainly at depths between 100 and 250 m and during all the year.

The fleet targeting crustaceans (Norway lobster and rose shrimp) operates mainly in the Southwest and South in deeper waters, from 100 to 800 m. This fishery takes place throughout the year, with the highest landings usually being made in the spring and summer.

Artisanal Fishery in Div IXa

The artisanal fishery is composed of a large number (around 3 000 licensed vessels) of small boats, operating mainly inshore and using a variety of gears as gillnets and trammel nets (the majority), purse seine, beam trawls, longlines, traps, pots and dredges. Some of these boats are licensed for more than one type of gear (with permission to a maximum of five gears).

In some cases it is used several different gears during the same trip and depending of the species availability this fishery use also different gears by season. The main species landed are hake, pouting, sole, cuttlefish and anglerfish from gillnets and trammel nets, chub mackerel, sardine, horse mackerel from purse seine, hake, conger, skates and black scabardfish from longlines, octopus from traps and pots, bivalves from dredges and coastal shrimps from beam trawl.

The large number of small boats (< 12 m) involved in this fishery has a mean GT of 1,5 and an average of 18 KW engine power.

The artisanal fishery represents 20% and 33% in weight and value, respectively, of the total commercial species sold in auctions in 2015.

The purse-seine fishery, traditionally the most important in landings volume, is composed of around 145 purse seines with a total catch of 64 353 t, in 2015. This fleet traditionally targeted sardine using a mesh size of 16 mm. With the introduction, in 2012, of specific legislation restricting sardine catches, the importance of this species has been reducing and represented 20% of their landings, in 2015. In 2011, catches of sardine represented 63% of total catches. Sardine catches were replaced by Chub Mackerel, species whose catches increased substantially in importance since 2012, from 28% to 58% of total catches, in 2015. Other target species are horse mackerel and anchovy.

The black scabbardfish long-line fishery in Div. IXa

In 2015, 21 deep-water longline vessels were routinely targeting the Black scabbard fish (*Aphanopus carbo*) in a limited area (hard grounds along canyon slopes off Sesimbra, South of Lisbon). Landings of Black scabbard fish amounted to 2 499 ton. This fishery started in 1983 at Sesimbra port. Associated with the capture of Black scabbard fish other deep-water sharks important to the incomes generated by this fishing activity are also captured, namely Portuguese dogfish (*Centroscymnus coelolepsis*) and Leafscale Gulper shark (*Centrophorus squamosus*).

The Swordfish Fishery in Atlantic Ocean

There is a drifting longline fishery directed to the swordfish in Atlantic Ocean involving 14 vessels with a mean GT of 110, an average of 260 kW engine power and a mean overall length of 21 meters. The main landing ports for swordfish on mainland west coast are Peniche (about 86% of the total catch in 2015) and Sesimbra (about 13% of the total catch in 2015).

The Surface Longline Fishery in Indian Ocean

In 2015, the Portuguese longline fishery in Indian Ocean (East and West) comprised 6 vessels, ranging from 177 to 602 GT. Target species were Swordfish and Blue shark.
This fleet activity's outcome is a total catch of around 3 233 ton. From those, about 40% was Swordfish and 39% were Blue shark, approximately 1 320 ton and 1 270 ton, in that order.
Catches in the fishing area were landed in Mauritius and South Africa.

The Surface Longline Fishery in Pacific Ocean

In 2015, the Portuguese longline fishery in Indian Ocean (East and West) comprised by 1 vessel. Target species were Swordfish and Blue shark.
This activity's outcome has a total catch of around 311 ton. From those, about 39% were Blue shark (BSH), 21% were Black Marlin (BLM) and 12% were Swordfish.
Catches in the fishing area were landed in Suva, Fiji.

Autonomous Region of the Azores (Div. X and CECAF 34.2.0)

The majority of Azorean fishing activity, data collection and sampling are concentrated in the ICES Sub-area X, where vessels are committed to demersal, pelagic, deep-water, tuna and other highly migratory fishes. The ecosystem is a seamount type with fishing operations occurring in all available areas (coastal and seamounts within the Azorean EEZ) usually limited to 1000 m depth, catching species from different assemblages, mostly on the 200-600 m strata (strata where the most commercially important species occur). On the other hand, some vessels may occasionally conduct some fishing operations within the portion of CECAF 34.2.0 that belongs to Azorean EEZ. No sampling scheme is programmed for those catches since they are usually of small amounts and are landed mixed with catches from ICES area X, which are sampled at landing.

Fishing activities in the Autonomous Region of the Azores can be divided into 5 main categories which include ten metiers.

Purse seine fishery for small pelagic fishes

PS_SPF metier is defined by the use of fishing gear purse seine nets targeting the juveniles of blue jack mackerel (*T. picturatus*). This fishery occurs at coastal areas all year round. Currently, 40 vessels use this metier; being the 10 – 12m segment the main contributor in terms of landings.

Pole-and-line fishery for large pelagic species

LHP_LPF metier is defined by pole and line gear type targeting tuna species [i.e bigeye tuna (*T. obesus*), skipjack tuna (*K. pelamis*) and albacore (*T. alalunga*)]. Tuna vessels operate from coastal to offshore areas during April to October. Currently, 62 vessels ranging a great variety of overall size use this metier however, the 12 – 18m and > 24m segments are the main contributors in terms of landings.

Hook fishery for demersal and coastal species

LLS_DEF metier is defined by the fishing gear set longline being of multispecies character targeting a high variety of demersal species as blackspot seabream (*P. bogaraveo*) and bluemouth (*H. dactylopterus*). This gear is used all year round at 3NM from shore comprising the islands slope (> 3MN) and offshore banks. Currently, around 110 vessels use this gear; being the 10 – 12m segment the main contributor in terms of landings.

LHP_FIF metier is defined by handlines gears. Currently, 270 vessels use this metier; being the 0 – 10m segment the main contributor in terms of landings. This gear are used at coastal areas, however, an important component of the fishery also occur at offshore banks. This fishing gear is used all year round targeting demersal species as blackspot seabream (*P. bogaraveo*), red porgy (*P. pagrus*), fork-beard (*P. phycis*), european conger (*C. conger*).

LHP_CEP metier is defined by squid jigging fishing gear being highly selective for its target species *Loligo forbesis*. Currently, 50 vessels use this gear but it's the fleet 0 – 10m and 10 – 12m segments which are the main contributors in terms of landings. Squid fishery occurred in the islands slope, all year round although with a decreasing of effort and catch during the summer months.

LLD_DWS metier is defined by drift bottom longline gear targeting the black scabbardfish. This gear is usually used nearby the slope of the islands and the flanks of seamounts. Only two vessels are currently using this metier.

LLD_LPF metier is defined by drift surface longline gear targeting the swordfish (*Xiphias gladius*) and blue shark (*Prionace glauca*). Currently, 12 vessels use this gear, being the fleet 10-12m and > 24m segments, the main contributors in terms of landings.

Fixed netters fishery for coastal species

GNS_FIF metier is defined by gear type of gill nets targeting finfish. This fishery occurs in inshore areas (at depths of less than 30m) with a marked seasonality (i.e summer months) targeting mainly the demersal species parrot fish (*Sparisoma cretense*) but also coastal pelagic species (e.g. yellowmouth barracuda, jacks, atlantic bonito). Currently, 50 vessels use this metier; being the 0 – 10m segment the main contributor in terms of landings.

Traps

FPO_FIF and FPO_CRU metiers are defined by trap gear targeting finfish and crustaceans, respectively. Currently, 25 vessels use these gears being the 0 – 10m segment the main contributor in terms of landings.

These fisheries are all inter-related, since the same vessel can use two or more fishing gears. The demersal and tuna fisheries represent a high economic value for the Autonomous Region of the Azores. The deep-water fishery for demersal species in the Azores is a multispecies and multigear fishery, where several types of hooks and lines gears are used by the local fleet. The dynamic of the demersal fishery seems to be drive by the main target species, the blackspot seabream (*Pagellus bogaraveo*). However, other commercially important species are also landed and the target species seems to change seasonally according to abundance, species vulnerability, management policies, and market demands. The fishery is clearly a typical small scale one, predominating small vessels (vessels <12m represent 90% of the total fleet) using mainly traditional bottom longline and several types of hand lines.

In 2015 statistical information on fish landings shows a decreased of 12% (c. 1128 t) in landings from the Autonomous Region of the Azores when compared to 2014. This tendency was mainly drive by the reduction in the tuna catches, which diminished by almost 23% (c. 733 tons), however, a reduction of squid (42%, 345 tons) and demersal species landings (5%, 200 tons) also contributed to the overall 2015 landing drop.

Autonomous Region of Madeira (CECAF 34.1.2)

The bio-geographical conditions of the archipelago of Madeira, e.g. narrow insular shelf, oligotrophic waters and steep incline of the slope, have always imposed severe limitations on fishing, since the small biomass of the populations of the available fishing species, particularly in the neritic zone (to a depth of around 200m) forced the Madeira fishing fleet, operating inside the Madeira Economic Exclusive Zone (CECAF 34.1.2), to concentrate on exploiting deepwater and/or migratory resources.

The greater relative weight in this sector belongs to the mixed fishery of two sympatric species black scabbard fish *Aphanopus carbo* (Lowe, 1839) and the intermediate scabbard fish *A. intermedius* Parin, 1983. These benthopelagic species are captured with drifting long lines at meso and bathypelagic zones. Also important are the large migratory pelagic species (Tuna), captured by bait boats using pole and line. The dominant species in this group are: *Thunnus obesus* (Lowe, 1839), bigeye tuna, and *Katsuwonus pelamis* (Linnaeus, 1758), skipjack tuna, among others.

On a decreasing scale of commercial importance, we find the small coastal pelagic species (locally called "ruama"), notably: *Trachurus picturatus* (Bowdich, 1825) (horse mackerel) and *Scomber colias* (Gmelin, 1789) (chub or common mackerel), caught by purse seiners, out of a total of a hundred marine species commercially exploited in this region.

Despite their small commercial importance when compared to the species mentioned above, the demersal species even so have an important role in the socio-economic context of fishing in Madeira. These species, which have a high commercial value, are fished using multispecific techniques by a number of small boats mostly operating with bottom long lines, traps and hand lines.

There is also a small, in terms of unloadings, but fairly important fishery in terms of value and fishing effort, of gastropod molluscs (limpets) carried out by small boats trough scuba diving in the subtidal zone.

The Madeira fisheries sector does not comprise any Industrial fishery targeting species for the production of fish meal, fish oil, etc.

III.B. Economic Variables

III.B. Baltic Sea (ICES areas III b-d), North Sea (ICES areas IIIa, IV and VIId) and Eastern Arctic (ICES areas I and II), and North Atlantic (ICES areas V-XIV and NAFO areas)

III.B.1. Achievements: Results and deviation from NP Proposal

Mainland

As stated in our NP 2014- 2016, the collection of economic data defined in DCF was achieved through a survey, applied to a statistical sample, by means of random stratified sampling method.

The reference year was 2014 and the target population was composed of vessels with registered. Inactive vessels are not part of the annual survey.

A questionnaire was drafted and sent through mail and email directly to the owners of the selected vessels and to producer's organizations and associations.

The differences between fleet segments regarding NP are due to the activity of the vessels and to the changes in the fleet. NP numbers and fleet segments are estimates based on licensing. When we take in consideration the activity of the vessels, as stated in DCF regulation, some reallocations between fleet segments occur and with them the need of possible clustering changes. Clustering was maintained as stable as possible over the years.

Due to the need to provide information to the GFCM, permission was obtained for the vessel owners to disclosure economic data for the two fleets (usually minimum number of vessels is 3 to avoid confidentiality issues). In this regard it was possible to provide information on the med.

The number of sample units per stratum and the coverage rate is reported in Table III.B.1.

The inquiry process for the reference year 2014 was completely carried out.

Calculation of capital values and capital costs

The value of fixed assets and the capital costs are estimated processing data of the Vessel Register and according to the methodology suggested by the study on "evaluation of the capital value, investments and capital costs in the fisheries sector" (No FISH/2005/03).

According to the capital study, the estimation of the capital value (GCS) consisted of three steps:

1. Specification of the composition of the active fleet by age
The specification of the composition of the active fleet by age has been done by processing the fleet register.

2. Estimation of price per unit of capacity (e.g. per GT)
In order to apply the PIM (perpetual inventory method) and in absence of other possibilities, the price per unit of capacity is estimated having in mind the price for building new vessels (replacement values). Those prices for 2011were:
- Small scale fleet segment = 21 050,00euros/GT
- Polyvalents segment > 12 meters = 47 250,00euros/$GT^{0,7}$
- Trawl segment = 25 820,00 euros/$GT^{0,8}$
- Seiner segment = 15 170,00 euros/GT

3. Calculation of the values of each vintage of the fleet at current prices.

After (1) and (2) we are able to estimate the Gross capital stock, the depreciated replacement value, and all the others variables. Inactive vessels are considered in the evaluation of the capital value and capital costs.

Calculation of FTE

The following procedure was used to calculate FTE:

From the survey information is collected about:

- Number of months of activity
- Number of days of activity
- Average number of working hours per day
- Number of workers per month/gender/type of employment(partial/full time)
- Number of unpaid workers

Administrative data:
- Number of days of activity, from logbooks and auctions

G – Gender (M/F)
T – Type of employment (Partial/Full)
DA – Days of activity
WH – Average working hours
NUL – Number of unpaid labourers

If a vessel answers the survey:

1. Calculate the monthly average or workers (per gender and type of employment), AVGw(G,T)
2. FTE national(G) = AVGw(G,Full time)+ AVGw(G,Partial time)x[min(8,WH)/8]
3. FTE harmonized(G) = FTE national(G)xDAxWH/2000

If a vessel doesn't answers the survey:
AVGFTE(G) – Average number of FTE of the fleet segment(per gender)
AVGWH – Average of working hours of the fleet segment
AVGNUL – Average of unpaid labourers of the fleet segment
   1. FTE national(G) = AVGFTE(G)
   2. FTE harmonized(G) = FTE(G)xAVGWHxDA
   3. NUL = AVGNUL

To calculate imputed value of unpaid labour:

If the vessel answer the survey:
Number of unpaid labourers x Crew Wages/Total FTE

If the vessel didn't answer the survey:
Average number of unpaid labourers x Average Crew Wages per FTE of the fleet segment

<u>**Autonomous Region of the Azores (Div. X and CECAF 34.2.0)**</u>

In 2015, fleet economic data was collected in the Autonomous Region of the Azores following the methodologies described in the National Plan. Frame population was determined from the total population based on the fleet register and licensing for the reference year (2014). The frame population of active vessels was stratified into segments based on size, fishing technic and island.

A random sample was formed from each segment and the national questionnaire mailed to the professional associations based in each island of the Azores.

A total of 175 questionnaires were conducted and included at a national level (Table III.B.1.). All primary data was stored in Si2P using the application developed by DGRM.

III.B.2. Data quality: Results and deviation from NP Proposal

Mainland, Azores and Madeira

There is a special effort to get consistent results for some economic parameters like: financial position in what concern the small scale fisheries. The information to calculate those variables was collected, however due to non-consistent responses the results may have bias.

The sample size for each fleet segment is determined by statistical procedure and targeting the precision level required by DCF for the variable income of the previous year (usually $CV < 5\%$).

The methodology used since the beginning of the DCF is based on averages of the fleet segments. However fleet vessels inside the DCF segment are not homogeneous. To minimize this problem further segmentation has been applied but with limited results. With the raising in importance of the economic results, namely on the balance report, the greater complexity of the processes and the growing needs on the amount, diversity and quality of information and the feeling that quality of the results needs improving in order so that the estimates may be used, a revision of the methods and procedures in place to collect, aggregate and estimate the variable values of the fleet begun in 2014 and finished in 2015. An analysis of the results of the surveys over the years shows significant variations in the answers to the survey. The same vessels can have, from year to year, huge variations for some variables that were expected to remain relatively stable, as fixed costs. The conclusion was that on different years the respondents use different interpretations for the same questions (with the possibility of different respondents (e.g. accountants) on different years for the same vessels). Adding to the low number of answers, the variations (and bias) of the estimators may be substantial. The new methodology developed makes use of administrative data, combined with answers from the surveys and some modelling in order to achieve better quality with the available data. Variability is still high, as the base sample data also have high variability, but is mitigated to the previous knowledge from the administrative auxiliary variables and is lower than the variability achieved with the old methodology. It should be noticed that, after taking into consideration the errors on the sample data, they still reflect the variability of the target population, as it should from a statistical point of view. On a well succeeded statistical operation, highly heterogeneous population will be reflected on a highly variable sample data. The new methodology is explained in annex 1.

III.B.3. Actions to avoid deviations

New methodology was developed in order to improve the quality of the estimates and the stability and consistency of the time series. From the analysis of the answers to the surveys over the years it was noticed inconsistencies and misinterpretations of what was actually asked. One of the constraints was that the instructions were not read by the respondents. The questionnaire was changed in order to reduce the possibility of misunderstanding and the instructions were merged into it. The calendar for 2015 was anticipated in order to have the results sooner and therefore more time to do the analysis and calculate the estimates.

III.B. Other Regions

III.B.1. Achievements: Results and Deviation from NP Proposal

Autonomous Region of Madeira (CECAF 34.1.2)

In 2015, data for this module was collected in the Madeira region following the methodologies described in the National Plan for this year. Population segments considered for the collection of economic data resulted

from the Universe of the registered vessels and its distribution is included at a national level in Table III.B.1. The acquisition of economic data was made by census, and the percentage of coverage achieved is indicated in this Table for each of the population segments.

The form prepared for national use was adapted and used in active vessels both in the census survey. Source of the data required in the case of non-active vessels was the fleet register. Table III.B.3. shows the strategy used for the collection of data in each of the variables.

The objectives set for 2014 were almost achieved concerning the acquisition of data. (Table III.B.1.). Response rate achieved was about 100% in most segments. The only significant deviation from aim was in the segment Passive gears : Vessels using hooks (24-40m). Due to the small number of vessels in this segment the lack of response by two vessels was important.

The value of fixed assets and the capital costs are estimated using the same methodology as the one referred for Mainland (e.g. "evaluation of the capital value, investments and capital costs in the fisheries sector" (No FISH/2005/03).

III.B.2. Data quality: Results and Deviation from NP Proposal

Autonomous Region of Madeira (CECAF 34.1.2)

Not applicable.

III.B.3. Actions to avoid deviations

Autonomous Region of Madeira (CECAF 34.1.2)

Due to some doubts arousing from answers to the inquiries, especially in the case of small vessels (under 10 m), validation of data was made in the case of the variables where administrative data exists. This validation allows to increase the reliability of the answers through the crosschecking of the responses to the survey versus recorded data from vessel activity, e.g., income with landings and fuel volume.

III.C. Metier-related variables

Tables III.C.3, III.C.4 and III.C.6 present the information collected during 2015.

GENERAL REMARKS
The description below should be considered along the following sampling strategies:
Concurrent sampling at sea: Samples of a trip drawn by an observer on board of a fishing vessel.
Concurrent sampling at market: Samples of a trip drawn in the harbor.
Total: Sum of all trips.

Mainland

IPMA is responsible to collect and analyse the biological data from ICES Division IXa, ICES Sub areas XII, XIV and I, II, NAFO area and the long-line fleet targeting swordfish (ICCAT and IOTC).

Autonomous Region of the Azores (Div. Xa)

IMAR/DOP is responsible for the collection of this information in ICES Division Xa and for the pole and line fishery targeting tuna (ICCAT). All identified metiers for which fishing activity was recorded during the reference period are indicated in Table III.C.1. Reference period in Table III.C.1 was updated using the average values of the two previous years (2013 and 2014). Information used for ranking the metiers through landings and value was obtained from sales notes (census), while for effort the number of days at sea was obtained from sales notes and logbooks (census) as well as from inquiries (probability based survey).

With exception of metier LLD_DWS_0_0_0, which targets black scabbard fish, all the metiers identified after updating the reference values with the 2 previous years of the sampling year, were the same as indicated in the NP2014-2016. Through the application of the ranking system based on effort, landings, discards and value variables, the metiers selected for sampling in ICES area X continues to be gillnets, handlines targeting squid, handlines targeting finfish, pole-lines targeting tuna, set longlines for demersal fishes and purse seiners targeting small pelagic fishes. Handlines targeting finfish were not identified for sampling through discards. There was no need to merge any of the metiers selected for sampling.

Sampling strategy continues to be concurrent 'metier based' sampling strategy through probability sample survey data collection scheme (Table III.C.4). Methodology applied in order to collect the data within this module followed the one described in the NP2014-2016.

Autonomous Region of Madeira (CECAF 34.1.2)

Madeira is responsible for collecting information of local vessels operating around the archipelago (CECAF 34.1.2) and also of tuna fishery data of that fishing area (ICCAT).

III.C. North Sea and Eastern Arctic (ICES areas I, II)

III.C.1. Achievements: Results and Deviation from NP Proposal

Depending on the fishing behaviour of the fleet operating in ICES areas I and II and in NAFO Regulatory Area (NRA), several reasons imply deviations on the collection of metier-related variables:
(a) Sampling is carried out by observers who remain on board throughout the period of the fishing trip, which can last from 2 to 3 months, with likely short notice changes in the fishing behaviour and operation area. Since 1995 the crew male nurses were trained to collect samples during the fishing trip;
(b) Once an observer is on-board, the entire trip is being sampled (i.e. sampling does not stop after a few hauls or fishing days, but lasts until the end of that trip);
(c) For each sampled haul, representative samples of target or priority species (as those under moratorium) along with another from the most abundant by-catch are sorted. This task is performed by one person under a short time constraint and cannot collide with fish processing;
(d) As length sampling is performed on board, the reason for over-sampling is often that all fish of a once randomly chosen sub-sample has to be measured. This oversampling doesn't incur in additional costs. However, minor additional costs occur in the home laboratory in form of additional staff time for sampling processing;
(e) The stock-based variables are obtained from sampling at sea in order to obtain data representative of the population. Sampling achievement is therefore totally dependent on the catches of the species.

Two fisheries were selected either by landings, effort or value.

PT1A
OTB_DEF_>=120_0_0
Target species: *Gadus morhua*
Sampled metiers: OTB_DEF_>=130_0_0
Concurrent sampling at sea: 0/2(0%)

Concurrent sampling at market: not planned
Total: 0/2 (0%)

Reason for shortfall: In 2015, Portuguese cod fishery was not sampled on ICES Divisions I and II. Our National Sampling Programme on board is based on nursemen from the vessels to be monitored each year. In 2015, and despite our efforts, we were not able to meet this condition on any of the vessels with cod quotas on either ICES Division. The only vessel fishing on Northeast Atlantic with a qualified person able to fulfill the daily sampling protocol has not a nurseman but an observer from the NAFO Observer Programme, already on board because the trip has started on Northwest Atlantic ending eastwards. But unfortunately this vessel target on NEAFC waters was not cod but redfish, available by August/September on international waters of Division IIa (Banana Hole).

PT2A

OTM_DEF_100-119_0_0

Target species: *Sebastes mentella*

Sampled metiers: OTM_DEF_100-119_0_0

Concurrent sampling at sea: 1/1 (100%)
Concurrent sampling at market: not planned
Total: 1/1 (100%)

No deviations occurred.

LENGTH COMPOSITION:

Table III.C.6 provides the achievements on length sampling of unsorted catches by metier and species. Concurrent sampling at sea has not been applied in this region. The fisheries in the Eastern Arctic fishing grounds are composed by almost clean catches of target species (cod and redfish) with few by-catches, which are difficult to sort out and to sample under time constraints. On-board sampling conditions (explained on the remarks above) leave no room to collect samples of less abundant and/or non commercial fish. For this reason, table III.C.6 includes no other species than those planned in the relevant NP.

III.C.2. Data quality issues

Deviations and reasons for deviations are explained under section III.C.1.

Different quality control assessment analysis (quarterly and annual) are implemented on the data base. The checks assure the type of data and the range of the variables are correct. Checks on national data processing include monitoring achievements, trend analysis, quality indicators and non-response rates.

III.C.3. Actions to avoid deviations

No action possible to reduce uncertainty of fleet activity. To avoid shortfalls Portugal is always trying to reach a wide participation of vessels which have not been sampled by observers before. This will enhance sampling coverage on fishing behaviour and operation area. To ensure that the planned length sampling is covering, as much as possible, the full range of expected lengths for each species with a good ratio cost/benefit, IPMA is developing an approach to set a minimum sampling effort on board to the Portuguese NAFO and NEAFC main fisheries. This approach is under implementation and in the near future will be presented to the relevant working groups.

III.C. North Atlantic

III.C.1. Achievements: results and deviation from NP proposal

Two fisheries were selected either by landings, effort or value.

PT1B

OTB_MDD_130-219_0_0

Target species: *Reinhardtius hippoglossoides*

Sampled metiers: OTB_MDD_130-219_0_0

Concurrent sampling at sea: 6/4 (150%)

Concurrent sampling at market: not planned

Total: 6/4 (150%)

Reason for exceeding: Taking into account sampling constrains on board (that may vary with the observer, vessel or trip) and a representative length sampling by sex (the first step of the protocol to be performed), the opportunity of biological sampling (weight and age) is very often jeopardized. However biological sampling effort has been extended for stocks were the assessment is directed dependent of data from these sampling such for cod in NAFO Div 3M.

PT2B

OTM_DEF_100-129_0_0

Target species: *Gadus morhua*, *Melanogrammus aeglefinus* and *Sebastes mentella*

Sampled metiers: OTM_DEF_100-129_0_0

Concurrent sampling at sea: 0/1 (0%)

Concurrent sampling at market: not planned

Total: 0/1 (0%)

Reason for shortfall: Due to lack of quota there was no fishing activity in the fishing ground. The cooperative vessels operated exclusively in ICES I and II areas.

LENGTH COMPOSITION:

Table III.C.6 provide the achievements on length sampling of unsorted catches by metier and species. Despite the conditions on-board, concurrent sampling at sea has been applied in NRA during 2015.

Length sampling is performed during observer trips. Once an observer is onboard, the entire trip is sampled (i.e. sampling does not stop after a few hauls or fishing days, but lasts until the end of that trip). More, catch composition may constrain the sampling achievements.

Iberian Fishing Ground (ICES sub-area IXa)

GENERAL REMARKS

Most Portuguese non-pelagic fisheries in the Iberian fishing ground are typically mixed fisheries that catch a wide variety of species, reflecting the biological diversity of the areas they exploit. Portuguese multi-gear fleets use a diversity of gears that allow exploitation of ecological communities in different habitat types, depths, and substrata (Duarte et al., 2009).

The coastal mixed-species multi-gear Portuguese fleet comprises medium-sized (>12 m) vessels, using a diversity of passive gears (Duarte et al., 2009), often operated during the same fishing trip. On-board sampling procedures allow catch determination by haul and fishing gear. However, on market sampling of multi-gear fishing trips, landing disaggregation by metier is not feasible.

Table III.C.3 includes the total number of trips during the sampling year and the achieved number of sampled trips by metier. Although a mixed fisheries activities targeting mixed species are not part of the Portuguese

sampling strategy (table III.C.4), it is often part of the sampling achievements (table III.C.3). Results and deviations are detailed below under the relevant sampling frame description.

The status of a scientific observer on board of a Portuguese fishing vessel is still a guest status. Article 11(3) of Council Regulation 199/2008 stipulates that scientific observers shall be accepted onboard, which did however not improve this situation. The possibility for sampling depends on the hospitality of ship owners and companies. Based on the present situation, random sampling of the fleet is still difficult and might be not optimal in future (even if a new legal basis for onboard sampling is in place), since there will remain some excuses to refuse an observer (e.g. maximum safe manning). Thus, the Portuguese on-board sampling programme in the Iberian Fishing Ground is based on a quasi-random sampling of cooperative commercial vessels of a fleet segment between 12 and 40 meters.

A main overall reason for deviations from what was planned is that sometimes it can be difficult to predict fishing pattern or changes in fishing pattern. Besides the bad weather conditions over the first quarter of the year, concurrent sampling at sea has only minor shortfalls.

PT3
FYC_CAT_0_0_0

Target species: *Anguilla anguilla*

Sampled metiers: FYC_CAT_0_0_0

Concurrent sampling at sea: not planned
Concurrent sampling at market: 0/44 (0%)
Total: 0/44 (0%)

Reason for shortfall: Fishing trips performed with fyke nets are not landed directly in the auction, but directly sold to regular traders. Sampling scheme depends on collaborative eel fishermen and on prior information about fishing events.

PT4
FPO_MOL_0_0_0

Target species: *Octopus vulgaris*

Sampled metiers: FPO_MOL_0_0_0

Concurrent sampling at sea: not planned
Concurrent sampling at market: 268/180 (149%)
Total: 268/180 (149%)

PT5
GNS_DEF_80-99_0_0, GNS_DEF_60-79_0_0 and GNS_DEF_>=100_0_0

Target species: *Merluccius merluccius* (all metiers)*, Pagellus acarne and other Sparidae* (only GNS_DEF_80-99_0_0)*, Trisopterus luscus* (only GNS_DEF_60-79_0_0);

Sampled metiers: GNS_DEF_80-99_0_0, GNS_DEF_60-79_0_0 and GNS_DEF_>=100_0_0.

GTR_DEF_80-99_0_0 and GTR_DEF_>=100_0_0

Target species: *Sepia officinalis, Solea spp., Rajidae* and *Lophius spp.* (only GTR_DEF_>=100_0_0)

Sampled metiers: GTR_DEF_80-99_0_0 and GTR_DEF_>=100_0_0.

Concurrent sampling at sea: 22/24 (92%)
Concurrent sampling at market: 404/312 (129%)
Total: 426/336 (127%)

PT6
LLS_DEF_0_0_0

Target species: *Merluccius merluccius, Conger spp., Pagellus spp.*

Sampled metiers: LLS_DEF_0_0_0. Additionally to those metiers selected by the DCF ranking algorithm, the metier "longliners targeting demersal species" (LLS_DEF_0_0_0) was also selected to be sampled in Div. IXa. This metier targets largest individuals than the other metiers, which are particularly relevant in the case of hake, subject to a recovery plan. The sizes caught by this metier have a large contribution to the estimates of SSB and their absence from catch-at-age matrices can bias this parameter.

Concurrent sampling at sea: not planned
Concurrent sampling at market: 118/48 (246%)
Total: 118/48 (246%)

Reason for exceeding in PT4, PT5 and PT6: Once the observers are at the market, while waiting to sample the targeted frames, time is used to sample an accessory number of trips with no additional costs.

PT7

LLS_DWS_0_0_0

Target species: *Aphanopus carbo, Centroscymnus coelolepsis, Centrophorus squamosus*.

Sampled metiers: LLS_DWS_0_0_0

Concurrent sampling at sea: 6/12 (50%)
Concurrent sampling at market: 40/48 (83%)
Total: 46/60 (77%)

Reason for shortfall: Regarding on-board sampling, the number of vessels prepared to take observers on board is much reduced when compared with the whole fleet. Additionally, some vessel owners are not willing to take observer by arguing lack of space on-board and other logistic reasons.

PT8

OTB_DEF_>=55_0_0

Target species: *Merluccius merluccius, Trachurus spp., Lophius spp.* and *Micromesistius poutassou.*

Sampled metiers: OTB_DEF_>=55_0_0.

Concurrent sampling at sea: 26/27 (96%)
Concurrent sampling at market: 127/144 (88%)
Total: 153/171 (89%)

Reason for shortfall: Bad weather conditions in Q1 and increased number of trips with landings sold by contract.

PT9

OTB_CRU>=55_0_0

Target species: *Nephrops norvegicus* (OTB_CRU>=70_0_0), *Parapenaeus longirostris, Aristeus antenntus* (OTB_CRU_55-59_0_0) and *Micromesistius poutassou.*

Sampled metiers: OTB_CRU>=70_0_0 and OTB_CRU_55-59_0_0. Crustacean trawlers are invariably licensed for two different mesh sizes, 55-59 mm targeting shrimps and >= 70 mm targeting Norway lobster.

Concurrent sampling at sea: 13/12 (108%)
Concurrent sampling at market: 58/96 (60%)
Total: 71/108 (66%)

Reason for shortfall: A number of crustacean trawls do not sell directly at the market, but have contracts with buyers. Others might land crustaceans in frozen blocks. Some of the vessels do not land in Portugal but in Spain. Also, there was a closure of the fishery due to quota reduction. Therefore, besides the permanence of

the observer at market, the chances to perform crustaceans sampling at the auction is dependent on crustacean landings.

PT10

PS_SPF_0_0_0

Target species: *Sardina pilchardus, Trachurus spp., Scomber colias.*

Sampled metiers: PS_SPF_>=16_0_0.

Concurrent sampling at sea: 39/24 (163%)
Concurrent sampling at market: 171/84 (204%)
Total: 210/108 (194%)

Reason for exceeding (market sampling): During 2015 logistic issues concerning the placement of observers were solved and the purse seine fleet started to be sampled in Sesimbra and Olhão ports, increasing the overall sampling intensity.

PT11

TBB_CRU_<55_0_0

Target species: *Palaemonidae*.

Sampled metiers: TBB_CRU_<55_0_0

Concurrent sampling at sea: 3/12 (25%)
Concurrent sampling at market: 27/12 (225%)
Total: 30/24 (125%)

Reason for shortfall: Besides reduction in vessels operating with beam trawl, some of the few vessels' owners refused to take observer due to lack of space and other logistic reasons indicated by the ship owners.

Reason for exceeding: Once the observers are at the market, while waiting to sample the targeted frames, time is used to sample an accessory number of trips with no additional costs.

MIX MIS_MIS_0_0_0

This sampling frame is not considered for planning purposes/sampling strategy (table III.C.4). The Portuguese fleet using fixed gears is designated by polyvalent fleet. In general, this fleet operates with a range of different gears, including gill and trammel nets, hooks, longlines, traps and pots. Vessels may change fishing gears seasonally which may be related, in some areas, to seasonal changes in abundance of certain species or groups of species. Many vessels use simultaneously two or more gears in the same area or in different areas, turning more complex metier identification during the sampling survey. This multi-gear fleet operates along the Portuguese coast (ICES Division IXa) and catches a great diversity of benthonic, demersal and pelagic species (fish, shellfish, cephalopods and crustacean.

Whilst individual fishermen head out to sea to search for grounds which yield the fish they are permitted to land and using a range of gear for which they are licensed to, they can actually end up filling different gears with a range of different fish species that share seawater space and prey resources with each other. As this fleet is part of the target population, they are often sampled on shore. If a great diversity of species is observed and observers are unable to split landings by metiers, then the trip is identified as MIS_MIS_0_0_0.

Most of this multi-gear fleet is composed by vessels smaller than 12 m. From the survey point of view, these vessels have no ability to take observers on-board. Thus, sampling at sea, often required to obtain reliable information on position, total catch characteristics and discards, is not possible.

Concurrent sampling at sea: not planned
Concurrent sampling at market: 325/not planned
Total: 325/not planned

LENGTH COMPOSITION:

When sampling a fishing trip, the species are sampled concurrently according to defined sampling schemes indicated in table III.C.4. Concurrent sampling requires the simultaneous sampling of all or a predefined assemblage of species (sampling schemes 1, 2 or 3) in a vessel's catches or landings, aiming at the characterisation of target species and/or assemblages and selection patterns of distinct species.

Resulting from concurrent sampling implementation, 227 different species were sampled and the overall achieved length sampling of catches in the Iberian fishing ground was 322926 individuals (table III.C.6).

Sampling intensities are in line with the explanations given above regarding the sampled trips by metier and necessarily depend on the retained catches and/or landings and on the discards. Furthermore, length sampling follows a general rule of collecting a minimum number of 100 fish per length class and area. In several cases, this rule leads to exceeding the achieved number of fish measured at national level. As sampling achievements are totally dependent on the catches and/or landings of the species, this may also lead to reduction in length sampling in terms of number of individuals.

Azores Grounds (ICES Div. Xa)

Sampling of fishing trips (tables III.C.3 and III.C.4)

AZ1 – GNS_FIF_>=100_0_0 (Gillnets targeting demersal fishes, e.g. *Sparissoma cretense*)
Concurrent sampling at-sea: not planned;
Concurrent sampling on-shore: 34 sampled fishing trips (38% of planned 90 trips)
Reason for shortfall: sampler in Pico Island still lacking in 2015, additionally it was not possible to carry out a survey in Santa Maria's harbours during the sampling year due to lack of available staff.

AZ2 – LHP_CEP_0_0_0 (Handlines targeting squid – *Loligo forbesi*)
Concurrent sampling at-sea: not planned;
Concurrent sampling on-shore: 430 sampled fishing trips (123% of planned 350 trips)
Reason for exceeding: samplers had improved the access to these landings resulting in oversampling although representing no extra expense for the data collection programme.

AZ3 – LHP_FIF_0_0_0 (Handlines targeting finfish, e.g. *Pagellus bogaraveo, Pagrus pagrus, Phycis phycis*)
Concurrent sampling at-sea: 0 sampled fishing trips (0% of planned 48 trips);
Concurrent sampling on-shore: 766 sampled fishing trips (162% of planned 472 trips)
Reason for shortfall (at sea): Implementation of the discard sampling programme did not take place.
Reason for exceeding (market sampling): Number of trips from this metier increased from 15756 in 2014 into 17970 in the sampling year reflecting the oversampling observed, however, it did not represent extra expense for the data collection programme.

AZ5 – LLS_DEF_0_0_0 (Set longlines targeting for demersal fishes, e.g. *Pagellus bogaraveo, Helicolenus dactylopterus*)
Concurrent sampling at-sea: 0 sampled fishing trips (0% of planned 48 trips);
Concurrent sampling on-shore: 605 sampled fishing trips (398% of planned 152 trips)
Reason for shortfall (at sea): Implementation of the discard sampling programme did not take place.
Reason for exceeding (market sampling): this metier is present through all the vessel length class segmentation and also due to an increase on the number of vessels which reflected an increase in the number of trips available for sampling during the sampling year. However, it did not represent extra expense for the data collection programme.

AZ6 – PS_SPF_>=160_0_0 (Purse seine targeting *Trachurus picturatus, Scomber colias*)
Concurrent sampling at-sea: not planned;
Concurrent sampling on-shore: 164 sampled fishing trips (109% of planned 150 trips).

IMAR/DOP was not able to conduct the discards observer sampling programme due to the late payments of tranches that did not allowed the institute conduct their obligations in the way they committed to. Not conducting the discard programme is a big constrain in achieving planned objectives regarding metier-related variables.

Length sampling by metier and species (table III.C.6)

The concurrent sampling strategy of commercial catches results in a large list of species being sampled, more precisely, 59 different species were sampled during 2015 (table III.C.6), representing a total of 101.546 specimens. Although not selected, sampling occurred of gear types such as FPO_CRU and FPO_FIF. This occurs as opportunistic strategy, every time samplers present at the market have a time window that allows them to sample other metiers besides the planned ones. This sample of accessory trips represents no additional costs to the data collection programme.

Sampling intensities are so reliant on number of trips sampled by metier as on the volume of the catch, landings and also discards of species. For some of the species this entails oversampling, while for others the result will reflect shortfalls:

1) Reasons for oversampling

    i) *Phycis phycis* [4004 sampled (200% of planned 2000)], *Raja clavata* [1122 sampled (187% of planned 600)] and *Trachurus picturatus* [11800 sampled (118% of planned 10000)]: higher availability in the landings at harbours with presence of samplers;

    ii) *Sparidae* [8400 sampled (700% of planned 1200)]: six different species are included showing a 44% increase of the volume landed in the sampling year, which reflects in a higher number of specimens sampled;

2) Reasons for shortfalls

    i) *Aphanopus spp.* [0 sampled (0% of planned 600)]: fishing for black scabbard fish continues to be a not well established activity. The decrease of volume landed verified for this species represented a break of about 90%;

    ii) *Aspitrigla cuculus* [173 sampled (29% of planned 600)], *Molva dipterygia macrophthalma* [139 sampled (23% of planned 600)], *Phycis blennoides* [127 sampled (21% of planned 600)], *Polyprion americanus* [1266 sampled (13% of planned 10000)] and *Zeus faber* [123 sampled (21% of planned 600)]: landings quantities were very low and consequently its availability for sampling was scarce. In addition, blue ling and wreckfish are often landed gutted;

    iii) *Beryx spp.* [4875 sampled (49% of planned 10000)]: The shutdown of the fishery due to national quota achievement reduced the fishing season to 6 months, which reflected in the low number of specimens sampled. Another reason is related do with the introduction of a minimum landing size for these species during the sampling year, which reduces the number of length classes available for sampling. The lack of at-sea sampling has implication on the numbers achieved, since it consists on one of the most discarded species;

    iv) *Conger conger* [990 sampled (50% of planned 2000)]: overestimated planned number of fish to be measured, drop of landings and presence of gutted fish at landings;

    v) *Helicolenus dactylopterus* [8691 sampled (58% of planned 15000)]: overestimated planned number of fish to be measured and introduction of a minimum landing size for these species during the sampling year, which reduces the number of length classes available for sampling. The lack of at-sea sampling has implication on the numbers achieved, since it consists on one of the most discarded species;

    vi) *Mullus surmuletus* [1 sampled (0.1% of planned 1200)] and *Octopus vulgaris* [35 sampled (6% of planned 600)]: the metier FPO_FIF and FPO_MOL targeting these species was not selected

for sampling, this way individuals sampled are a consequence of the concurrent sampling strategy;

vii) *Pagellus bogaraveo* [17053 sampled (57% of planned 30000)]: the lack of one sampler in the staff, the lack of the discards sampling programme, a breakdown of 226 tonnes in the Azorean quota, a local imposed fishery closure season and an increase of the minimum landing size, all contributed to less available specimens of this species for sampling;

viii) *Centrophorus granulosus* [0 sampled (0% of planned 300)] and *Dalatias licha* [0 sampled (0% of planned 300)]: once these species TAC is zero, no samples are available at the market;

III.C.2. Data quality issues

NAFO Areas, Iceland, Greenland and Irminger Sea

See section III.C.2 for Supra-region North Sea and Eastern Arctic (ICES areas I, II).

Iberian Fishing Ground (ICES sub-area IXa)

Deviations and reasons for deviations are explained under section III.C.1.

Different quality control assessment analysis (quarterly and annual) are implemented on the data base. The checks assure the type of data and the range of the variables are correct.

R scripts perform quarterly checks on all commercial sampling data logged by the observers into the database. Each observer checks his/her data and gets feedback on quality results. Checks are run sequentially and until observer data is free of major errors.

For both, on-board and market sampling data, a random check of 10% of the data per year is executed by inspecting the sample forms and the registered data. On this procedure observers check each other's field logs against database value. When systematic biases are found, all observer records are checked. Additionally R scripts perform annual checks on all data logged by the observers into the database.

Azores Grounds (ICES Div. Xa)

Quality checks and validation procedures implemented are: (1) All samples are checked by a coordinator before the input of data; (2) All data introduced in the database is checked for syntax errors; (3) A random check of 10% of the data is executed by inspecting the registered data for logical errors, like for example, type of data and values range of the variables; (4) Length distributions are then connected with the market landings for future cross examinations.

III.C.3. Actions to avoid deviations

NAFO Areas, Iceland, Greenland and Irminger Sea

See section III.C.3 for supra-region North Sea and Eastern Arctic (ICES areas I, II).

Iberian Fishing Ground (ICES sub-area IXa)

Concerning on-board sampling, the strategy is conditioned by the good will of the skippers to cooperate with IPMA. Although Council Regulation 199/2008 states that vessel owners "shall take observers on board" this situation remains to be difficult for several metiers. Portugal is making an effort to increase the participation of

vessels in the national sampling programme by disclosing information about the DCF on the sampling sites and fisheries organizations.

Influenced by current consequences of the fishery policy, fishermen often decline from assisting the DCF. Additionally, a large number of vessels are not prepared to take observers on board. Other deviations occurred because of short notice changes in the fishing behaviour.

One of the main reasons for deviations from the planned is that it is sometimes difficult to predict spatial and temporal fishing patterns for some metiers. The problem can be reduced by implementation of robust sampling frames where the metiers can be seen as domains instead of strata. This is something that Portugal is already working on, including the identification of proper sampling frames, probability based ways to select primary sampling units and documentation of non-responses.

Azores Grounds (ICES Div. Xa)

The difficulties that arise are communicated to the coordination of the program, being implemented adjustments throughout the year of sampling in order to improve the achievement rate. Nonetheless, bias occur due to reasons explained in section III.C.1 as well as limited fish handling by some of the fishing industry operators or changes in the regular landing procedure of some metiers. Efforts will be employed to overcome all these constraints observed in 2015, in order to raise the number of sampled trips and thus the number of specimens measured.

To achieve the number of trips to be sampled for metier GNS_FIF_>=100_0_0, new efforts will be employed in order to overcome the lack of a sampler in Pico island. In 2016, visits to Santa Maria islands are planned for the summer season in order to help the reinforcement of this shortcoming.

The importance of on-board sampling was proved to be of extreme importance on obtaining precious information for complementing length composition for most species (commercial or not) caught in Azores. It is foreseen for 2016 the discards programme running in order to meet the objectives.

Sampling of *Aphanopus spp*. will be intensified as soon as fishing and landings are more regular.

III.C. Other Regions

III.C.1. Achievements: results and deviation from NP proposal

ICCAT - Mainland

PT12
LLD_LPF_0_0_0 (SWO)
Target species: *Xiphias gladius*, *Prionace glauca*
Sampled metiers: LLD_LPF_0_0_0
Concurrent sampling at sea: 8/6 (133%)
Concurrent sampling at market: 35/36 (97%)
Total: 43/42 (102%)

Reason for exceeding: Two extra trips were performed in order to accomplish the planned number of sets.

PT14
FPN_LPF_0_0_0 (BFT)
Target species: *Thunnus thynnus*.
Sampled metiers: FPN_LPF_0_0_0
Concurrent sampling at sea: 69/24 (288%)

Concurrent sampling at market: 25/24 (104%)
Total: 94/48 (196%)

Reason for exceeding: According to fish availability, the trap activity varies considerably among seasons. Under national regulations, each tuna harvesting must be monitored by a scientific observer. Taking advantage of this obligation, sampling is, in fact, a census.

LENGTH COMPOSITION:

Table III.C.6 provide the achievements on length sampling of catches, retained catches and discards by metier and species. Obtained data refer to unsorted catches, retained catches and/or landings and discards.

Length sampling intensities is conditional to the concurrent sampling characteristics and depends on the landings and catch composition. Most of the measurements are taken on observer trips, once an observer is onboard, the entire trip is sampled (i.e. sampling does not stop after a few hauls or fishing days, but lasts until the end of that trip). Therefore, volume of catches, catch composition and quota restrictions may constrain the sampling intensities. These are the reasons behind the variation in length sampling achievements among years and highlight the difficulties to plan in advance the minimum number of individuals to be measured/aged at national level (*Thunnus albacares*, *Thunnus obesus*, *Isurus oxyrinchus*, *Prionace glauca* and *Xiphias gladius*).

Auxis rochei, *Euthynnus alleteratus*, *Sarda sarda*: these species are a by-catch. The minimum number of fish to be measured/aged at national level cannot be planned in advance.

Lamna nasus: the catch of this species is banned in European fisheries.

Thunnus thynnus: length sampling achievements depend upon the census enforced by legal provisions.

ICCAT - Autonomous Region of the Azores

Sampling of fishing trips (tables III.C.3 and III.C.4)

AZ4 – LHP_LPF_0_0_0 (Pole lines targeting tuna species)
Concurrent sampling at-sea: not planned;
Concurrent sampling on-shore: 69 sampled fishing trips (77% of planned 90 trips)

Reason for shortfall: several situations contributed to a decrease in the number of trips sampled from this metier, namely: the lack of a sampler in Pico island; nominal catch of tuna species was almost 50% less of the observed in 2014; significant changes in the landing pattern brought difficulties in accessing these landings by the samplers (e.g., landings directly into the tuna industry trucks and landings occurring at different harbours).

Length sampling by metier and species (table III.C.6)

The concurrent sampling strategy of commercial catches results in a large list of species being sampled, more precisely, 7 different species were sampled during 2015 (table III.C.6), representing a total of 5.150 specimens.

Considering all tuna species, they recorded a decrease of about 60% in volume landed in 2014 which was worsened by an extra decrease of 26% in 2015. Exception made for *Katsuwonus pelamis*, which registered an increment of 35%, all the others species registered breaks in landings between 41% (*Thunnus obesus*) and 88% (*Thunnus albacares*).

Sampling intensities are so reliant on number of trips sampled by metier as on the volume of the catch and landing of species. For some of the species this entails oversampling, while for others the result will reflect shortfalls:

1) Reasons for oversampling

    i) *Sarda sarda* [369 sampled (123% of planned 300)] and *Thunnus obesus* [2863 sampled (143% of planned 2000)]: extra sampling effort imposed in order to achieve the planned number of fish to be measured at national level and also a higher availability in the landings at harbours with presence of samplers along with scarcity of other tuna species to sample;

2) Reasons for shortfalls

    i) *Thunnus alalunga* [74 sampled (12% of planned 600)]: landings quantities are very low and consequently its availability for sampling. A 50% drastic reduction of LHP_LPF trips during 2015 reflected in landings of albacore, which decreased from 351 tonnes landed in 2014 into 51 tonnes in 2015 (a break of about 85%);

    ii) *Isurus oxyrinchus* [2 sampled (0.3% of planned 600)] and *Xiphias gladius* [8 sampled (1.3% of planned 600)]: the metier LLD_LPF targeting these species was not selected for sampling, this way individuals sampled are a consequence of the concurrent sampling strategy or of availability of time from the samplers to cover this extra metier. Individuals sampled are a consequence of an opportunistic behaviour from them regarding other fishing gear types (LHP_FIF, LHP_LPF, LLS_DEF).

    iii) *Katsuwonus pelamis* [1785 sampled (18% of planned 10000)]: changes were verified in the landing pattern of this species, as they were often directly landed into the tuna can industry trucks as well as landings occurring at different harbours. The missing sampler in Pico island is also contributing to this shortfall, since it is in this harbour where the majority of tuna are landed for industry raw material;

    iv) *Squaliformes* [0 sampled (0% of planned 300)]: once these species TAC is zero, no samples are available at the market. The only data source for these species used to be the discard sampling programme. The lack of the discards program during 2015 prevented length composition sampling of these species.

IOTC

PT13 LLD_LPF_0_0_0

Target species: *Xiphias gladius*, *Prionace glauca*

Sampled metiers: LLD_LPF_0_0_0

Concurrent sampling at sea: 1/2 (50%)
Concurrent sampling at market: not planned
Total: 1/2 (50%)

Reason for shortfall: The number of vessels operating in this region has been greatly reduced in recent years.

LENGTH COMPOSITION:

Table III.C.6 provide the achievements on length sampling of catches, retained catches and discards by metier and species. Obtained data refer to unsorted catches and discards.

Length sampling intensities is conditional to the concurrent sampling characteristics and depends on the catch composition. All the measurements are taken on observer trips, once an observer is onboard, the entire trip is

sampled (i.e. sampling does not stop after a few hauls or fishing days, but lasts until the end of that trip).The volume of catches and catch composition are the reasons behind the variation in length sampling achievements among years. Several species are a by-catch, and thus the minimum number of fish to be measured/aged at national level cannot be planned in advance.

Autonomous Region of Madeira (CECAF area 34.1.2)

Procedures to assign each individual fishing trip to a specific metier were conducted using the methodology described in the NP 2011_2013. The selection of the metiers was achieved using effort (fishing days), landings and the value of the landings from the reference years (2013-2014). Results from this selection are presented in Table III.C.1. Results of the implementation of the sampling of metiers are presented in Table III.C.3 and the metier sampling strategy employed is in Table III.C.4.. These tables present the expected samples by metier (in accordance with the NP) and its achievement during 2015.

Table III.C.6. shows the total number of individual lengths measured from the landings by metier and species.. Concerning this Table III.C.6., no length sampling of discards or unsorted catches was done due to the already mentioned fact of the non-implementation of the programme of observers on board.

Achievement by metier:

LLD_DWF_0_0_0 (Drifting longlines deep-water)

Concurrent sampling of a total of 70 fishing trips was planned (22 in the sea and 48 on shore). A total of 82 fishing trips were sampled on shore. The oversampling in the fishing trips on shore was implemented to compensate for the impossibility of having observers on board.

PS_SPF_16_0_0 (Purse seine nets coastal)

Concurrent sampling of a total of 48 fishing trips was planned (16 in the sea and 32 on shore). A total of 35 fishing trips were sampled on shore. The oversampling in the fishing trips on shore was implemented to compensate for the impossibility of having observers on board.

LHP_LPF_0_0_0 (Pole and line)

Concurrent sampling of a total of 32 fishing trips was planned (11 in the sea and 21 on shore). A total of 172 fishing trips were sampled on shore. The oversampling in the fishing trips on shore was implemented to compensate for the impossibility of having observers on board. Also, in this metier, oversampling was adopted in response to the unusual volume of catches of *Thunnus alalunga* in recent years.

LLS_FIF_0_0_0 (Bottom set longline)

Concurrent sampling of a total of 46 fishing trips was planned on shore. A total of 9 fishing trips were sampled on shore. Objectives for the sampling were not achieved. These metiers are very difficult to cover because landings are nocturnal, in small scattered fishing ports and unpredictable. Due to this motive, the previous establishment of a sampling plan is impractical with the resources available in the Institution.

MISC_MOL_0_0_0 (scuba diving)

Concurrent sampling of a total of 36 fishing trips was planned on shore. A total of 9 fishing trips were sampled on shore. While the landings of the other métiers are concentrated mostly in the fishing harbours of Funchal and Caniçal, this metier, composed by a few fishing vessels mainly targeting

limpets through scuba diving, is very difficult to cover by the sampling teams due to the dispersion of the landings in small ports around Madeira and Porto Santo.

LHP_FIF_0_0_0 (Hand lines)

Concurrent sampling of a total 18 fishing trips was planned on shore. A total of 2 fishing trips were sampled. This is a small métier with scarce importance in the landings and the difficulties to cover are similar to the above mentioned situations.

During the implementation of the concurrent sampling programme in 2015, a total of 31.569 specimens were sampled, belonging to 29 different species. In the most captured species of the Madeira fisheries, length sampling of : *A. carbo, T. obesus, T. alalunga, K. pelamis, S. colias, T. picturatus, Patella candei and Patella aspera* comprised respectively: 10839, 7010, 2006, 1020, 3285, 3039, 1764, 1414 individuals measured.

III.C.2. Data quality issues

ICCAT- Mainland

Deviations and reasons for deviations are explained in section III.C.1.

Different quality control assessment analysis (quarterly and annual) are implemented on the data base. The checks assure the type of data and the range of the variables are correct. Checks on national data processing include monitoring achievements, trend analysis, quality indicators and non-response rates.

ICCAT - Autonomous Region of the Azores

Quality checks and validation procedures implemented are: (1) All samples are checked by a coordinator before the input of data; (2) All data introduced in the database is checked for syntax errors; (3) A random check of 10% of the data is executed by inspecting the registered data for logical errors, like for example, type of data and values range of the variables; (4) Length distributions are then connected with the market landings for future cross examinations.

IOTC

See section III.C.2 above for supra region Other Regions (ICCAT - Mainland)

Autonomous Region of Madeira (CECAF area 34.1.2)

Analysis of the fulfilment of the sampling objectives set for 2015 in the above mentioned tables show that the overall coverage was in accordance with these objectives. However, like in the previous years, a different situation result for the trips sampled on shore in comparison with the trips sampled on board (see Table III.C.4.). There was a good coverage of trip landings on shore, in general over passing the initial number of trips planned. The oversampling achieved in the coverage of trip landings on shore was intended to overcome the impossibility, in 2015, of implementing the plan of observers onboard due to administrative and budgetary constraints.

III.C.3. Actions to avoid deviations

IPMA is always enhancing communication with stakeholders in order to minimize difficulties raised by the fishing industry operators and trying to reach its wide participation, including self-sampling cooperation.

ICCAT - Autonomous Region of the Azores

Regarding tuna species, sampling will be improved by overtaking the constraints regarding the landing procedures identified, meaning that, contacts will be made with the industry in order to obtain permission for samplers to have access to fish directly landed into their trucks. New efforts will be employed in order to overcome the lack of a sampler in Pico island.

Once the discards sampling programme is back on track, length compositions of *Squaliformes* will be accomplished.

Efforts will be enforced but still, difficulties will remain in sampling of *I. oxyrinchus*, *P. glauca* and *X. gladius* since it continues to be a non-selected metier for sampling through the ranking system strategy, landings are very scarce and the demanded sampling effort that results of the concurrent sampling strategy implemented leaves no space for sampling these species.

IOTC

See section III.C.3 above for supra region Other Regions (ICCAT)

Autonomous Region of Madeira (CECAF area 34.1.2)

As it was done in previous years, to overcome the difficulty of collecting information of the fisheries onboard we made a considerable effort, using the technical resources from the institution, in the collection of information and concurrent sampling made in the fishing pier during the unloading of fish and also the cross references with logbooks.

III.D. North Atlantic (ICES areas V-XIV and NAFO areas)

III.D.1. Achievements: results and deviation from NP proposal

Recreational fisheries in Portugal are limited to areas IX.a and X.

The national law applicable to recreational fishing was changed in 2014, regulating the accidental catch of salmon, European Eel and Sharks (*Carcharodon carcharias, Cetorhinus maximus, Lamna nasus, Helexanchus griseus, Carcharinus falciformis, Carcharinus longimanus, Alopias superciliosus*), which if caught, must be released outright. This means the ban on fishing for salmon by recreational fishermen is kept and reinforced.

With regard to fishing for sea bass by recreational fishermen, as mentioned before, based on scientific study conducted in 2011, is not to expect a significant impact of fishery carried aboard maritime tourist boats. However, concerning onshore fishing, it is possible that this impact is greater and for this reason a pilot study was planned for 2016.

III.D.2. Data quality issues

In 2015 estimates were based on the maritime-touristic operators, data collected under a survey made by DGRM.

The maritime-touristic segment may not be representative of all recreational fishermen population. Therefore a more comprehensive pilot study is being developed in order to obtain a better knowledge of national reality.

III.D.3. Actions to avoid deviations

In early 2014, in order to make it possible to carry out surveys in a comprehensive manner, was published national law which requires the introduction of a contact telephone number at the time the license is issued. Is also being developed an internet application that allowed DGRM to collect and process information concerning the activity performed by recreational fishermen, based on voluntary participation and surveys, which will assess the impact of fishing on the various fish populations.

The referred national law also seek to simplify the licensing process and to create a channel of communication through SMS between the administration and fishermen that allows sending notices, swiftly and automatically, concerning closed seasons, fishing seasons, management measures applicable to certain species or other relevant information.

This will allow the fisheries administration with a comprehensive set of data about the recreational fisheries. Furthermore a pilot study was planned for 2016 in order to evaluate the impact of all the recreational fisheries in the seabass stock.

III.D. Other Regions (CECAF, ICCAT, IOTC)

III.D.1. Achievements: results and deviation from NP proposal

In 2015, there were no recreational fisheries in CECAF, ICCAT and IOTC areas directed to the species mentioned in appendix 4, table 3.

III.D.2. Data quality: results and deviation from NP proposal

There are no deviations from the NP proposal.

III.D.3. Actions to avoid deviations

Not applicable.

III.E. Stock-related variables

III.E. North Sea and Eastern Arctic (ICES areas I, II)

III.E.1. Achievements: results and deviation from NP proposal

GENERAL REMAKS

Stock-related data is collected in connection with sampling of commercial sources (observer trips). All stocks sampled during 2015 for biological variables, age, length, weight and sex are gathered in table

III.E.3, which provides an overview over the species by region/fishing ground/area/stock and justifications for deviations.

The need to sample on board of freezer trawlers and trawlers with processing units and the need to sample demersal species which are landed as partly or processed products, imply that the collection of metier-related variables (section III.C), as well as the collection of stock-related variables (section III.E), should be handled only at-sea. This provides the possibility to sample unsorted catches and to take otoliths and samples for length, weight and sex. Beyond the "General Remarks" described under the section "III.C.1. North Sea and Eastern Arctic (ICES areas I, II)", several other reasons imply deviations from the NP on the collection of stock-related variables:

(a) In 2015, Portuguese cod fishery was not sampled on ICES Divisions I and II. Our National Sampling Programme on board is based on nursemen from the vessels to be monitored each year. In 2015, and despite our efforts, we were not able to meet this condition on any of the vessels with cod quotas on either ICES Division. The only vessel fishing on Northeast Atlantic with a qualified person able to fulfill the daily sampling protocol has not a nurseman but an observer from the NAFO Observer Programme, already on board because the trip has started on Northwest Atlantic ending eastwards. But unfortunately this vessel target on NEAFC waters was not cod but redfish, available by August/September on international waters of Division IIa (Banana Hole). Moreover, the vessel's redfish catches taken on NEAFC waters were not from demersal redfish usually taken as the main by-catch of the cod fisheries on areas I and II, but the pelagic redfish aggregations available by August/September on international waters off Division IIa (Banana Hole).The majority of stock-based variables are obtained from sampling at sea in order to obtain data representative of the population. Sampling achievement is therefore totally dependent on the catches of the species;

(b) There is general rule for observers to collect stock-based variables of 10 fish per length class and area. If only very few length classes occur during a fishing trip, this rule can lead to a deviation from the planned;

(c) Taking into account primarily the age data needs for analytical assessment, the target are the NAFO stocks on Sub Area 3, with special focus on Flemish Cap cod. The Portuguese catch of Arctic cod in ICES areas I, II is below 1% of the overall annual catch. Commercial age length keys (ALK) are built with age reads from the bulk of the catch, taken by the major fleets in this fishery (Norway and Russia). Portugal does not provide an ALK;

(d) Since one fishing trip lasts, on average, four months it is practically impossible to collect and store gonads on board. The toxicity and volatility of storage organic compounds is not compatible with hygiene and food safety requirements for the fisheries sector. Thus, maturity data is not collected;

(e) The indications of the planned minimum numbers of individuals to be measured for the different variables are based on experiences with the Portuguese sampling scheme until 2008. Even with the possibilities to adjust the numbers within the updates for the programme it is not always possible to predict accurately if these planned numbers are reachable and realistic.

III.E.2. Data quality issues

Deviations and reasons for deviations are explained in section III.E.1.

Different quality control assessment analysis (quarterly and annual) are implemented on the data base. The checks assure the type of data and the range of the variables are correct. Checks on national data processing include monitoring achievements, trend analysis, quality indicators and non-response rates.

III.E.3. Actions to avoid deviations

As mentioned before, the fleet operating in ICES areas I and II also operates in NAFO area. In both regions sampling is carried out by samplers who remain on board throughout the period of the fishing trip, which can last from 2 to 3 months with likely short notice changes in the fishing behaviour and operation area. To avoid shortfalls Portugal is always trying to reach a wide participation of vessels which have not been sampled by observers before.

III.E. North Atlantic

NAFO Areas and Iceland, Greenland and Irminger Sea

In the NAFO Regulatory Area, species such as ***Hippoglossoides platessoides*** and ***Glyptocephalus cynoglossus*** and ***Gadus morhua*** (except for division 3M) have TAC 0. Therefore, the planned minimum number of individuals to be measured at a national level cannot be planned in advance.

Reasons for deviations on ***Raja spp.*** (SA 3), ***Reinhardtius hippoglossoides*** (NAFO 3KLMNO) ***Sebastes spp.*** (NAFO areas) are explained in the beginning of chapter "III.E. North Sea and Eastern Arctic (ICES areas I, II)" under the "General remarks", and details are provided in Table III.E.3.

Sebastes mentella, Iceland, Greenland and Irminger Sea area: due to lack of quota there was no fishing activity in Iceland, Greenland and Irminger Sea area. The cooperative vessels operated exclusively in the North Sea and Eastern Artic areas.

Iberian Fishing Ground (ICES sub-area IXa)

Stock-related data is collected in connection with sampling of commercial sources (observer trips and harbour sampling) and on surveys. All stocks sampled during 2015 for biological variables, age, length, weight, sex, sexual maturity and fecundity are gathered in table III.E.3, which provides an overview over the species by region/fishing ground/area/stock that were sampled. The indications of the planned minimum numbers of individuals to be measured for the different variables are based on experiences with the Portuguese sampling scheme and survey catches until 2008. Even with the possibilities to adjust the numbers within the updates for the programme it is not always possible to predict accurately if these planned numbers are reachable and realistic.

Lepidorhombus boscii: sampling relies mostly on research surveys at sea. For the variable weight-at-length the number of individuals achieved is below the planned. Due to vessel's balance the weight variable is difficult to collect accurately on board. Thus, individuals on the surveys are not weighed.

Lepidorhombus whiffiagonis (all variables): although the share of this species in EU TAC is barely 3% and current retained catches are reduced to a few tons, it was not asked for derogation. The concernment on supporting a sampling scheme for the species is due to the use of its length composition in stock assessment. The species stock-based variables are mainly obtained from sampling at sea and at the market. Sampling achievements are therefore totally dependent on the catches of the species.

Lophius budegassa and ***Lophius piscatorius***: as the fish reaches the market gutted and food security rules precludes the collection of gonads on-board of commercial vessels, gonads are only collected during surveys at sea, or purchased (very expensive) before processed. This results in reducing the possibility of sampling sex-ratio-at-length and maturity-at-length, becoming dependent on the amount of fish sampled during the research surveys at sea. For both species, illicia were only taken but not read, following WGHMM 2007.

Raja brachyura, ***Raja clavata***, ***Raja montagui***, ***Leucoraja naevus*** (*Raja naevus* in the tables): Age readings are not used in stock assessment.

Solea solea (all variables) sample acquisition was suspended until results from the ongoing analysis of collected data are available to identify gaps on stock related variables.

Azores Grounds (ICES Div. Xa)

Reasons for exceeding or non-compliance with the objectives established in the NP are:

1) Reasons for oversampling

i) *Raja clavata*: the planned number of individuals to be measured is underestimated having impact in the high percentage of achievement observed. In average, only 6 individuals are sampled per month for biological parameters at the laboratory. About 42% of the individuals sampled for sex-ratio are from market sampling once this information is easily collected along with the length frequency composition of the landings;

ii) *Sparidae*: more than one species is sampled and besides that, *Pagrus pagrus* includes 10 length classes which raises up greatly the number of individuals sampled.

2) Reasons for shortfalls

i) *Aphanopus spp.* and *Molva dypterygia macrophthalma*: no fishery implemented in the region and scarce abundance at landings, respectively, are the main reasons for the non-achievement of the planned number of individuals to be sampled;

ii) *Pagellus bogaraveo* and *Polyprion americanus*: the cost per kg of these species reached prices so high that, in some months, prevented their purchase in order to achieve the planned number of fish to be sampled. The seabream fishing was also closed in July and had its minimum landing size increased which reduced the number of length classes available for biological variables data collection and, consequently the number of individuals;

iii) *Beryx spp.*: by the end of June the fishery closed for *B. splendens* due to quota limits achieved by Portugal still, some individuals of *B. decadactylus* were able to be sampled although only landings of 5% of the total catch was allowed. Also these species had in 2015 a minimum landing size being implemented that reduced the number of length classes available for sampling;

iv) *Helicolenus dactylopterus*: minimum landing size limits implementation had reduced the number of length size classes and consequently the number of fish available for stock-based variables per sample;

v) *Conger conger*: many individuals are not available for biological sampling due to being landed gutted.

III.E.2. Data quality issues

NAFO Areas and Iceland, Greenland and Irminger Sea

See section III.E.2 for Supra-region North Sea and Eastern Arctic (ICES areas I, II).

Iberian Fishing Ground (ICES sub-area IXa)

Deviations and reasons for deviations are explained under section III.E.1.

Different quality control assessment analysis (quarterly and annual) are implemented on the data base. The checks assure the type of data and the range of the variables are correct.

R scripts perform quarterly checks on all commercial sampling data logged by the observers into the database. Each observer checks his/her data and gets feedback on quality results. Checks are run sequentially and until observer data is free of major errors.

For both, on-board and market sampling data, a random check of 10% of the data per year is executed by inspecting the sample forms and the registered data. On this procedure observers check each other's field logs against database value. When systematic biases are found, all observer records are checked. Additionally R scripts perform annual checks on all data logged by the observers into the database.

Quality checks and validation procedures implemented are: (1) All samples are checked by a coordinator before the input of data; (2) All data introduced in database is checked for syntax errors; (3) A random check of 10% of the data is execute by inspecting the registered data for logical errors, like for example, type of data and values range of variables.

III.E.3. Actions to avoid deviations

NAFO areas, Iceland, Greenland and Irminger Sea

See section III.E.3 North Sea and Eastern Arctic (ICES areas I, II).

Iberian Fishing Ground (ICES sub-area IXa)

Regarding crustacean species, sampling directly at the auction by the staff has in general been very successful and cost effective. Portugal will continue with this sampling setup.

Regarding the other stocks, Portugal plans to keep following the fishing activity improving sampling when acquisition is subject of market availability.

Portugal remains focused on providing high-quality data to stock assessment working groups. Other stocks or parameters that are not directly relevant will have a lower priority.

Regarding the augmentation of the general sampling level, Portugal reconsiders its sampling protocol in order to obtain sufficient samples, and plans to organize a Workshop for the following January 2017 aimed at discussing methods to determine the planned minimum number of individuals to be measured at the national level. During 2017, fish length measurements will be also recorded in some auctions, using, on an experimental basis, an electronic system composed by a local unit for automatic image acquisition of fish boxes and a remote database to record the processed images (Fishmetrics), which allows to conclude fish length measurements at a later stage.

Azores Grounds (ICES Div. Xa)

In 2015 several problems were detected as TAC, size limits, high sale prices, which challenged the Azorean program to achieve the objectives. One of the measures implemented to avoid shortfalls were length and weight measures at on-site sampling with generally positive results.

Concerning *Beryx spp.*, extra sampling effort will take place during at least the first semester, in order to prevent the eventually early closing of this fishery (since it tends to close earlier every year).

The implementation of the discard observer sampling programme will help to overcome some of the identified problems in achieving objectives with that fraction of the population that is not landed due to policy measures.

Sampling of *Aphanopus spp.*, is directly related to the uncertainty of whether there will be a fishery targeting this species in the region.

III.E. Other Regions

III.E.1. Achievements: results and deviation from NP proposal

All stocks sampled during 2015 for biological are gathered in table III.E.3. The majority of stock-related variables are obtained from sampling at sea. Sampling achievement is therefore totally dependent on the catch composition. This is the main reason for the down-sampling concerning sex-ratio-at-length for *Isurus oxyrinchus*, *Prionace glauca*, which are often a by-catch of the longliner fleet, and *Xiphias gladius*.

It is difficult to plan the number of individuals to be weighed on board. The use of weighing scales on board depends on vessels facilities and weather conditions. As fish (especially sharks) is landed in heavy blocks, weight's sampling at the market is also unfeasible. This is the reason behind the deviations concerning weight-at-length for *Isurus oxyrinchus*, *Prionace glauca* and *Xiphias gladius*.

Thunnus thynnus: biological sampling achievements took advantage of the census enforced by legal provisions.

ICCAT - Autonomous Region of the Azores

The tuna species (i.e *Thunnus obesus* and *Thunnus alalunga*) since reach high weight values per fish would imply unsustainable costs for biological sampling, for that reason the only data recorded were length and weight at landing with the exception of two small bigeye tunas that were purchased and complete sampling performed. Further, *Thunnus thynnus* is not landed in Azores, and species like *Xiphias gladius* and *Prionace glauca* belong to a metier not sampled by the programme in Azores due to low landing values.

IOTC

All stock-based variables are obtained from sampling at sea. Sampling achievement is therefore totally dependent on the catches of the species. Sampling is carried out by observers who remain on board throughout the period of the fishing trip, which can last from 2 to 3 months, with likely short notice changes in the fishing behavior.

Isurus oxyrinchus, *Prionace glauca*, *Thunnus alalunga* are by-catch species. Planned minimum number of individuals to be sampled at a national level cannot be planned in advance.

The use of weighing scales on board depends on vessels facilities and weather conditions. For several species it is difficult to plan in advance the number of individuals to be weighted (weight-at-length) on board. That is the case for *Isurus oxyrinchus*, *Prionace glauca*, *Thunnus alalunga*, *Thunnus albacares, Thunnus obesus* and *Xiphias gladius*.

Autonomous Region of Madeira (CECAF area 34.1.2)

Tables III.E.1 and III.E.2 summarises the average landings in reference period of 2011 - 2013 and the long term sampling of required stocks. Table III.E.3 summarises the sampling intensity for stock-based variables. The coverage achieved in the species considered was satisfactory in most species. No sampling was done in *Centrophorus squamosus* due to the unavailability of quota in 2015.

III.E.2. Data quality issues

ICCAT

Deviations and reasons for deviations are explained in section III.E.1.

Different quality control assessment analysis (quarterly and annual) are implemented on the data base. The checks assure the type of data and the range of the variables are correct. Checks on national data processing include monitoring achievements, trend analysis, quality indicators and non-response rates.

IOTC

See section III.E.2 above for supra region Other Regions (ICCAT).

Autonomous region of Madeira (CECAF area 34.1.2)

It was not possible to accomplish the biological sampling of *Thunnus obesus* due to the impossibility of accessing to the specimens processed in the industry and the very high cost of this species does not allow the acquion of specimens for laboratorial biological sampling. Similar situation was observed concerning the biological sampling of *Sardina pilchardus*, because this species is a by-catch of purse seine fishery and it was not always available in the landings. Regarding *Katsuwonus pelamis*, it was not possible to buy specimens for sampling purpose due to difficulties to transport the fish between the fishing port (Caniçal) and the biology laboratory (Funchal).

III.E.3. Actions to avoid deviations

ICCAT - Mainland

Shortfalls are related with weight and sex-ratio information, due to problems inherent in large pelagic fisheries: long fishing trips, vessel logistics and type of fish processing onboard, and vessel's conditions. Sampling intensities depend on fishing behaviour. Proposed measures are the revision of the sampling intensity of some biological variables, and a workshop in January 2017 for discussing methods to determine the planned minimum number of individuals to be sampled at the national level.

ICCAT - Autonomous Region of the Azores

In ICES Sub-area X, extra efforts will be made in order to collect weight@length information from tuna species directly at the auction sales. As for large pelagic fishes captured through drifting longline, shortfalls are due to problems inherent to this fishery in this region, namely: low number of vessels using this gear type and consequently low volume of landings, as well as specimens are often landed processed (gutted).

IOTC

See section III.E.3 above for supra region Other Regions (ICCAT).

Autonomous region of Madeira (CECAF area 34.1.2)

In 2015, the administrative procedure for carrying expenditure on the purchase of fish for biological sampling are now properly established and is assured the necessary budget.

III.F. Transversal variables

III.F.1. Capacity

III.F.1.1. Achievements: Results and deviation from NP proposal

As stated in our NP the collection of capacity data defined in DCF was achieved through Fleet register database and covers 100% of population.

III.F.1.2. Data quality: Results and deviation from NP proposal

Results reflect the actual state of the fleet. There are no deviations from the NP proposal. Some numbers might not match the fleet register data. This is due to the recommendation to include any active vessel in 2015 and as a consequence DCF capacity includes some vessels that became active after January, 1st .

III.F.2. Effort

III.F.2.1. Achievements: Results and deviation from NP proposal

Mainland

As stated in our NP the collection of effort data defined in DCF was achieved through logbooks for vessels > 10m and through sales notes for vessels < 10m.

During 2015 all logbooks covering the vessels with a pattern of activity with more than one day, were computerised. This information covers all the activity in foreign grounds, landings in foreign ports and also information of larger vessels operating in national waters. Most vessels have now the electronic logbook, which provides a more updated information but with a different approach. This results in some different ways to account for the fishing days and days at sea. As a consequence time series may change after 2011.

For the remaining vessels, with one day trip and landings of fresh fish on mainland ports, the source of information for effort estimation are the sales notes. For the purpose of effort estimation it is considered each auction sale as an effort day.

Between 2008 and 2009 a survey was carried out for small scales fisheries and a substantial amount of effort information was collected.

This information allows for the estimation of effort variables for small scale fisheries, according to the following methodology:

> Number of fishing operations: (For purse seiners) – It's considered one fishing operation per sales day.
>
> Number of nets: One net per fishing operation
>
> Length of nets: Avg of length of nets x number of vessels x number of fishing days
>
> Number of hooks: Avg number of hooks x number of vessels x number of fishing days
>
> Number of pots and traps: Avg number of pots and traps x number of vessels x number of fishing days
>
> Hours fished: Avg number of fishing hours per gear x number of vessels x number of fishing days
>
> Soaking time: Same as Hours fished

Therefore, for the mainland fleet all information to support effort estimation is collected, enabling to comply with rules laid down on the regulation.

III.F.2.2. Data quality: Results and deviation from NP proposal

Mainland

The deviations from the NP proposal are related with metiers for vessels < 10 m, due to the impossibility of subcontract of services in 2013, as stated in the previous section.

III.F.3. Landings

III.F.3.1. Achievements: Results and deviation from NP proposal

The information resulting from sale at wholesale fish markets, in the case of landings of fresh or refrigerated fish, complemented by the logbook landing declaration for all landings of frozen fish at Portuguese ports and all landings at foreign ports, makes it possible to achieve the aims of this parameter.

The geographical origin of landings was disaggregated in accordance with level 3 of Appendix I. This parameter was collected, in the case of logbooks, from the information stated in the landings declaration and, by other hand, in the case of 1st sales, was disaggregated by fishery at mainland Portugal, the Azores and Madeira Autonomous Regions, Spain and Mauritania (ICES statistical divisions VIII, IXa and X and CECAF 34.1.2 and 34.1.3).

Only the information collected from the 1st sale by auction meets the required specifications in terms of the assessment of the value of commercial landings with disaggregation and in compliance with the criteria set forth in the Regulation. Information is therefore available for all species landed at the wholesale markets in mainland Portugal and the Autonomous Regions. Remaining values were estimated based on the economic survey to the fleet.

The collection of data makes it possible to assess annual commercial landings of all stocks in accordance with the level 3 for geographical disaggregation indicated in Appendix I.

III.F.3.2. Data quality: Results and deviation from NP proposal

There are no deviations from the NP proposal.

III.G. Research surveys at sea

In 2015, Portugal conducted 3 surveys supported within the DCF and participated in the Flemish Cap Groundfish Survey conducted by Spain.

As indicated in the Table III.G.1, all the programmed surveys were performed. For the number of hauls and sampling activities, also refer to Table III.G.1.

The following text provides a short description of all surveys carried out in 2015, with a map of the achieved sampling activities.

III.G.1. Achievement: Results and Deviation from NP proposal

Sardine, Anchovy, Horse Mackerel Acoustic Survey

The survey was conducted from 13/04/2015 to 18/05/2015 on RV Noruega. Data coming from Sardine, Anchovy and Horse Mackerel Acoustic survey is stored in a national database. Data was sent to the ICES WGHANSA and used on the assessment of sardine and anchovy. Refer to Fig. III.G.1 (A) for sampling radials and Fig. III.G.2 (B) for fishing stations. Deviations from planned days at sea are in the margin of 10%. There are no shortfalls for the sampling target activities.
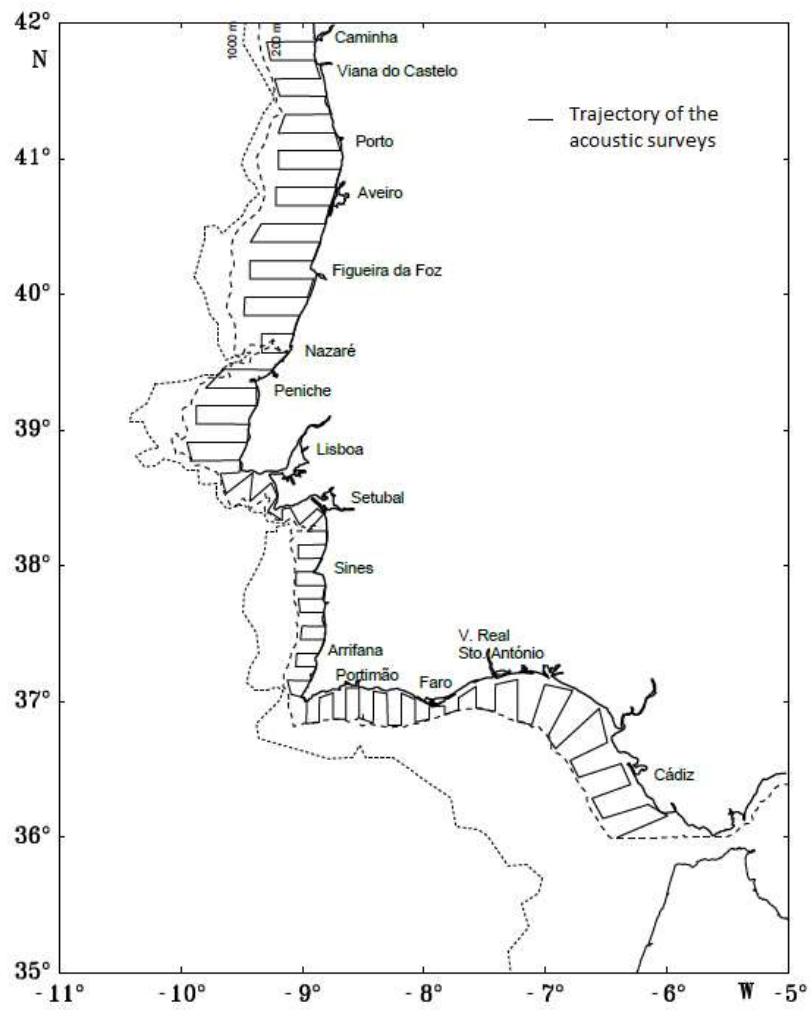
Figure III.G.1 (A): Sardine, Anchovy and Horse Mackerel Acoustic Survey. Sampling radials.
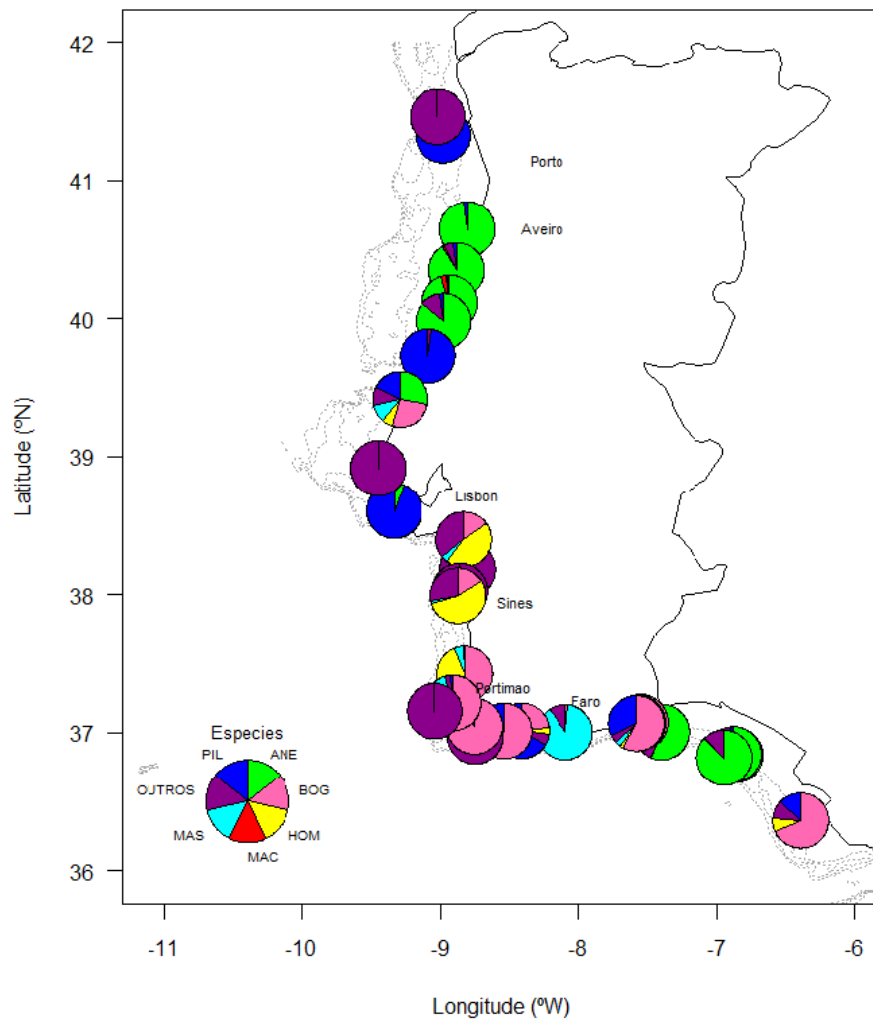
Figure III.G.1 (B): Sardine, Anchovy and Horse Mackerel Acoustic Survey. Species composition by fishing station.

Nephrops TV Survey Offshore Portugal/ *Nephrops* Survey Offshore Portugal NepS (FU 28-29)

For reasons explained already in last year AR, Portugal recommends that the revised DCF adopts the following designation: ***Nephrops* Survey Offshore Portugal NepS (FU 28-29)**. This survey is internationally coordinated within WGNEPS.The survey was conducted from 02/06/2015 to 23/07/2015 on RV Noruega. Data from *Nephrops* bottom trawl survey/TV Survey Offshore Portugal, UWTV (FU 28-29) survey is stored in the CRUZDEM national database. The abundance/biomass indices from the bottom trawl sampling stations were sent to the ICES WGBIE and used on the assessment of *Nephrops*. Refer to Fig. III.G.1 (C) for sampling grid and fishing stations. Deviations from planned days at sea and target activities are in the margin of 10%.
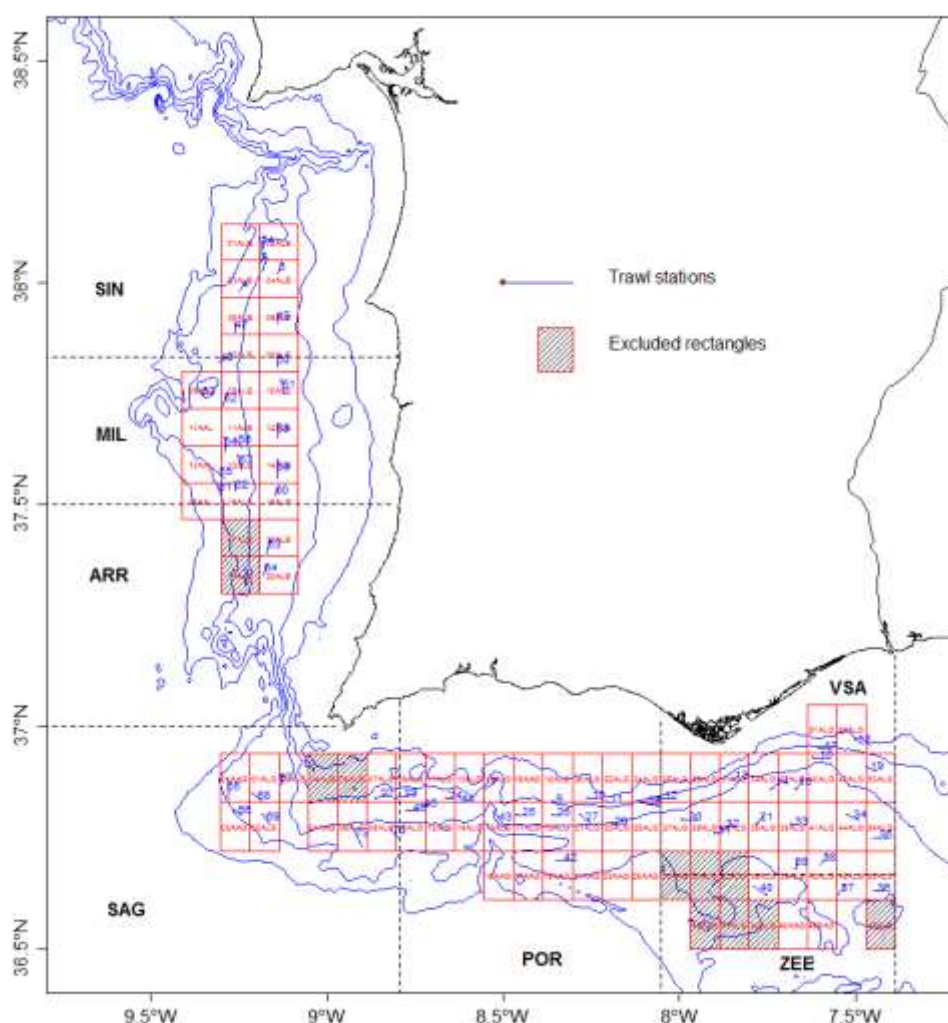
Figure III.G.1 (C) *Nephrops* TV Survey Offshore Portugal/*Nephrops* **Survey Offshore Portugal NepS (FU 28-29)**. Sampling grid and trawl stations.

Flemish Cap Groundfish Survey

This survey was carried out by Spain with the RV Vizconde d'Eza between 22/06/2015 and 23/07/2015. Portugal has taken part by means of a team of one scientist as scientific leader and one technician. The survey ran within normality, were performed in total 181 hauls, all valid. The 32 planned strata were sampled (Figure III.G.1 (D)). The data from the Flemish Cap Groundfish Survey, FCGS, is stored in the IEO data base.
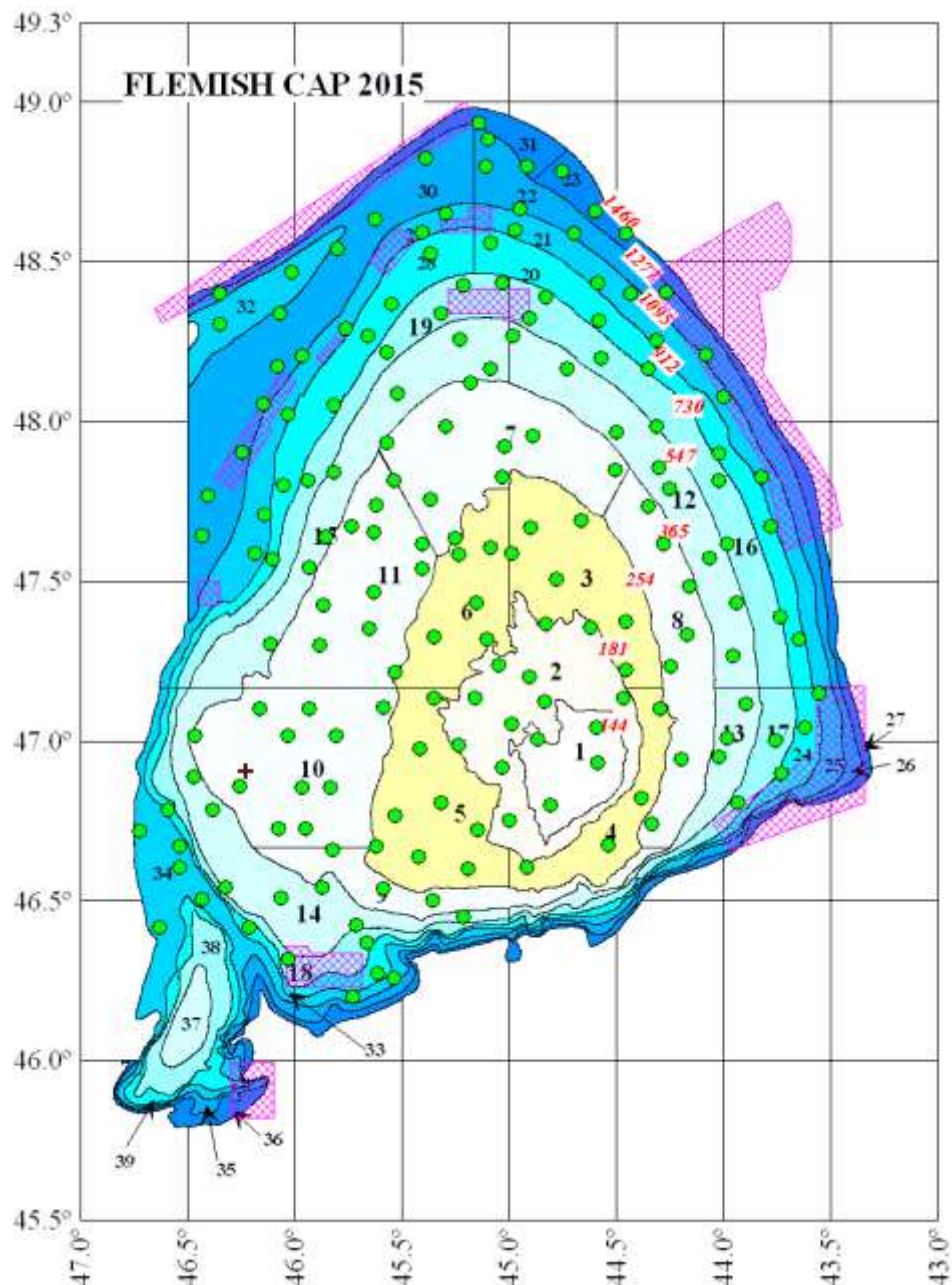
Figure III.G.1 (D): Flemish Cap Groundfish Survey, FCGS (RV Vizconde d'Eza). Sampling grid. Coral and sponge protection areas (red squares); Valid hauls (green circles); invalid hauls (red crosses).

Western IBTS 4th quarter

The survey was conducted from 12/10/2015 to 13/11/2015 on RV Noruega. Refer to Figure III.G.1. (E) for sampling grid and trawl stations. Data coming from the IBTS survey is stored in DATRAS (http://datras.ices.dk/Home/Descriptions.aspx, with survey data and protocols) and also in the CRUZDEM national database. This data was sent to the ICES WGBIE, WGHANSA and WGWIDE to be used for stock assessment of hake, horse-mackerel and blue whiting.

Deviations from planned days at sea and target sampling are in the margin of 10%.

Figure III.G.1(E): Western IBTS 4th quarter – IBTS Q4. Sampling grid.

III.G.2. Data Quality: Results and deviation from NP proposal

Generally, the surveys are following the international manuals set up for the different surveys. These manuals therefore establish the data quality. No serious data quality problems or deviations from the NP occurred in 2015.
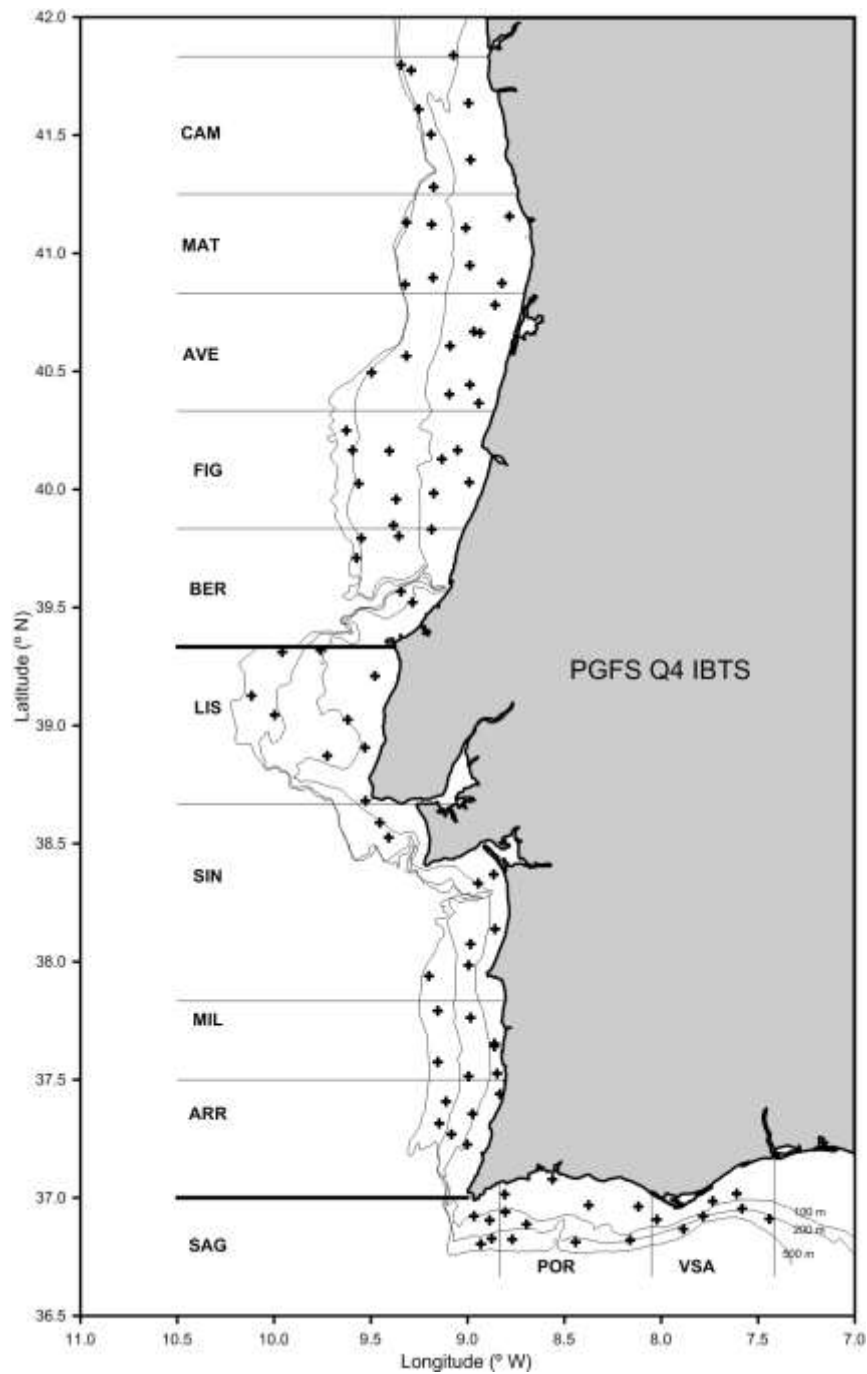
IV. MODULE OF THE EVALUATION OF THE ECONOMIC SITUATION OF THE AQUACULTURE AND PROCESSING

IV.A. Collection of data concerning the aquaculture

IV.A.1. Achievements: results and deviation from NP proposal

In 2015 the surveys used to collect data for EUROSTAT were also used to collect economic data for DCF. Economic data for 2013 was collected and estimates were made. Although a census was applied, the response rate was below 70%. The response rate has been decreasing over the years, albeit the efforts of the administration for collecting data. On Bottom units constitutes the majority of the aquaculture structure (over 1341 units on 2013) and is, traditionally, the segment with the lowest response rate (38% in 2013). A change to the type of data collection was considered but rejected as it would suffer from the same problem of high non response. Another reason for the census is the existence of national regulation requiring collection of data from all the aquaculture and the requirement of answer by the sector. Off bottom units usually have high response rates. 2013 response rate was 81%.

IV.A.2. Data quality: results and deviation from NP proposal

Due to the low response rate, estimates were made and quality indicators calculated. The quality indicators are expressed in table IV.A.3. The low response rate achieved for some variables is due to the nature of the aquaculture structure. On bottom units represent 94% of total aquaculture units. This units consist mainly of a small piece of land, usually less than 1 ha, with low level investment and simplified cost structure. A simplified questionnaire and the production is estimated according to a methodology defined in cooperation with the National Statistics Institute. Capital variables have a higher variation as they are more difficult to answer (and have usually lower response rate, even when a questionnaire is answered).

IV.A.3. Action to avoid deviations

To forfeit the decreasing response rate, an extra effort has been made, with some positive results. Due to national regulation mandating the answering of the survey, it's possible for the administration to enforce some legal measures, as fines and the cancelling of the license. Letters to the establishment owners were sent explaining the consequences of non-answering the questionnaire, increased phone calls, reinforcement by the administration staff when on-site inspections, requirements of the questionnaire in order to access public funding for new projects.

IV.B. Collection of data concerning the processing industry

IV.B.1. Achievements: Results and deviation from NP proposal

NP states that processing industry data were to be collected by NSI (National Statistic Institute). We received the 2013 data from NSI. The sources of information are: Structural Business Statistics (SBS) and SUT- Supply and Use Tables (Intermediate consumption by product and by industry).

Under SBS it is not possible to collect data on Depreciation of Capital. SBS also does not collect unpaid labour or FTE by gender. However there is sufficient information available in order to make estimates for these variables.

FTE by gender will be calculated using the following formula:

FTE(by gender) = TOTAL_FTE × gender_employed/total_nb_employed
Where:
TOTAL_FTE = Total FTE in the reference year
Gender = Male/Female

Gender_employed = Number of males/females employed in the reference year
Total_nb_employed = Total number of person employed in the reference year

IMPUTED VALUE OF UNPAID LABOUR = UNPAID_LABOUR × AVG_WAGE
Where:
UNPAID LABOUR = Number of unpaid persons employed (SBS: S16120)
AVG_WAGE = Total_wages/Total_employees

IV.B.2. Data quality: Results and deviation from NP proposal

Quality under SBS and SUT is assured by National standards, guaranteed by NSI and in compliance with Eurostat rules of quality.

However it is not possible to provide quality indicator such as coverage rate or CV as they are not defined for these statistical procedures (e.g., no sample is defined as administrative data from fiscal declarations is used by NSI)

IV.B.3. Actions to avoid deviations

Procedures were developed during 2013 in order to obtain some of the missing variables from SBS (Imputed value of unpaid labour, FTE by gender) but it is not possible to obtain the variable "Depreciation of Capital". A meeting was made with NSI in order to study the feasibility of the calculation of this variable by the Institute. NSI will evaluate the possibility in order to provide the information in 2016.

V. MODULE OF EVALUATION OF THE EFFECTS OF THE FISHING SECTOR ON THE MARINE ECOSYSTEM

V.1. Achievement: Results and deviation from NP proposal

The data required for the calculation of indicators 1, 2, 3, 4 as defined in Commission Decision 2010/93/EU is collected through the research surveys. These data has been collected through the annual surveys carried out by IPMA. The surveys are described in section III.G.1. Data on species, length frequencies and abundance was collected from all hauls including individual parameters such as age, length, sex and maturity from the target species of the survey following the sampling levels established in the manuals for the respective survey. The spatial and temporal coverage of data collection for the evaluation of effects of the fishing sector will consist of sub-area IXa. No deviations occurred in 2015.

Relatively to DCF indicators 5 (Distribution of fishing activities),6 (aggregation of fishing activities) and 7 (areas not impacted by mobile bottom gears) preliminary analysis were made in 2011 using 2005 VMS data for bottom trawl gears in Div IXa. However it must be stressed that the methodologies for calculation of these 3 indicators are still being discussed and proposed to be addressed in a ICES Workshop on DCF Indicators to be held in October 2013. Moreover, EU has recently requested ICES a scientific advice on data collection issues which includes the review of the existing environmental indicators to measure the impact of fisheries on the seabed and take proposals in time for the new DC-MAP 2014-2020. Therefore, the basis for ecosystem indicators definitions and its methodologies should outcome from these discussions and recommendations.

The data required for the calculation of indicators 8 is collected on-board of the commercial vessels monitored by IPMA since 2004. No deviations occurred in 2015.

In what concern indicator 9, the fuel consumption (both quantity and value) was estimated with data from economic survey and crosschecked with administrative data. Values of landings, total and per commercial species were obtained from sales notes. Fuel consumption was obtained per fleet segment and year. Fuel consumption by quarter and metier was obtained as a proportion of the total effort days spent by metier and quarter in relation to the total fleet segment and year.

V.2. Actions to avoid deviations

Not applicable

VI. MODULE FOR MANAGEMENT AN USE OF THE DATA

VI.1. Achievements: results and deviation from NP proposal

VI.1.1 Management of data

As stated in the NP 2014-2016, primary fisheries data, whether transversal, economic or biological, is scattered among the different databases standing in the five Institutions engaged in National Programme.

Mechanisms for quality control assessment and validation procedures are executed in each one of the Institutions.

The developments achieved in 2015 regarding economic and transversal variables are the following:

1. Fishing Fleet Database

- The new module created in 2013 was updated with new information in 2015 and its structure improved.

- Implementation of additional validations in order to improvements data quality.

2. Auction's sales

- Register of 2015 daily auction sales of Azores and Madeira in the same database as mainland.

3. Biological data (IPMA)

- In what concern the biological data collected by IPMA, the entry into force of the sampling scheme based on metiers and concurrent sampling, forced a number of changes in databases. Due to the large volume of information stored in the national databases, its complexity and variability of the fleet behaviour of the fleet it is necessary a continuous adaptation and improvement, allowing an effective data management, appropriated to the latest international recommendations. The application of sound data management practices, alongside a continuing effort for upgrade and consolidation of databases and exploration tools, has helped to avoid many shortfalls with the Portuguese DCF data.

- Nevertheless, several data calls had to be answered in 2015, which was done within the respective deadlines and with complete and quality-checked data. Data were transmitted to regular data users, such as ICES, JRC, and assessment working groups (see Table VI.1).

- Regarding biological data, IPMA main lines of action is the implementation of a new database in an open source database management system in order to build a system ensuring the compilation of all existing databases in a common system.

VI.1.2 Data transmission

All the data sets used to support scientific analysis in ICES, NAFO, ICCAT, IOTC, STECF and DG MARE were organised, analysed and transmitted. The lack of requested data is explained below:

Gadus morhua **(I, II) - NWWG**. In 2015, Portuguese cod fishery was not sampled on ICES Divisions I and II. Our National Sampling Programme on board is based on nursemen from the vessels to be monitored each year. In 2015, and despite our efforts, we were not able to meet this condition on any of the vessels with cod quotas on either ICES Division. The only vessel fishing on Northeast Atlantic with a qualified person able to fulfill the daily sampling protocol has not a nurseman but an observer from the NAFO Observer Programme, already on board because the trip has started on Northwest Atlantic ending eastwards. But unfortunately this vessel target on NEAFC waters was not cod but redfish, available by August/September on international waters of Division IIa (Banana Hole).

VI. 2 Actions to avoid deviations

Not applicable.

VII. LIST OF ACRONYMS AND ABREVIATIONS

CECAF	Committee for the Eastern Central Atlantic Fisheries
CV	Coefficient of Variance
DGRM	Direção Geral de Recursos Naturais, Segurança e Serviços Marítimos/Directorate General for Natural Resources, Safety and Maritime Services
IMAR/DOP	Departamento de Oceanografia e Pescas da Universidade dos Açores/Oceanographic and Fisheries Department of the University of Azores
DRPM	Direção Regional das Pescas da Madeira/Regional Directorate of Fisheries of Madeira
GES	Good Environmental Status
IBTSWG	International Bottom Trawl Survey Working Group
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
IPMA	Instituto Português do Mar e da Atmosfera/Portuguese Institute for Sea and Atmosphere
IOTC	Indian Ocean Tuna Commission
MSFD	Marine Strategy Framework Directive
NAFO	Northwest Atlantic Fisheries Organization
NP	National Programme
PNAB	Programa Nacional de Amostragem Biológica
RAA	Região Autónoma dos Açores/Autonomous Region of Azores
RAM	Região Autónoma da Madeira/Autonomous Region of Madeira
UAç	Universidade dos Açores/University of Azores

VIII. COMMENTS, SUGGESTIONS AND REFLECTIONS

X. REFERENCES

Duarte, R., Azevedo, M., and Afonso-Dias, M. 2009. Segmentation and fishery characteristics of the mixed-species multi-gear Portuguese fleet. ICES Journal of Marine Science, 66: 594–606.

X. ANNEXES

Annex 1. Methodological document on the estimation of socio-economic data

Annex 2. Minutes of National Coordination Meeting

Annex 1. Methodological document on the estimation of socio-economic data

1.Description of methodologies used to choose the different sources of data

Data sources used for the estimation of economic variables are administrative data, logbooks, sales notes and surveys carried out following a stratified random sampling strategy. For social variables, the data is collected together with the economic survey adapting the questionnaire form. Each of those sources has as basic unit for the data collection: the vessel. Though the first two sources are census like and the last one is a sample, both relate to the same universe, i.e. the fleet registered on the 1st January of the reference year, therefore the matching of sources is assured.

2. Description of methodologies used to choose the different types of data collection

Different type of data collection was applied per variable and fleet segment. Variables related with fleet operations and fleet characteristics are collected from the national administration database, from sales notes or even logbooks with a census methodology. Concerning economic variables, data were collected by questionnaires.

3. Description of methodologies used to choose sampling frame and allocation scheme

For Madeira region, economic and social data collection is done by census, while for Azores and mainland a stratified random sampling is applied.

In order to comply with new demands and to obtain more accurate estimates, Portugal established an uniform fishing fleet segmentation between economic and biological data, based on metier level 6. Allocation of vessels that performed fishing operations in more than one supra region was made according to the criteria of days of activity. In this situation we can find the longline vessels, operating at North Atlantic but also within Other Regions.

Besides the criteria for assigning a particular vessel to a supra region, it was also required to define criteria to merge some of the fleet segment. All the fleet segments without enough representativity to be run independently, are in these circumstances.

For sample selection the criteria are the sample size by segment (minimum of 30 vessels per segment); number of vessels by segment (census for segments with less than 15 vessels).

4. Description of methodologies used for estimation procedures

The methodology used for the estimation of most of the variables is based on the imputation of averages per fleet segments. With the raising in importance of the economic results, improvements on the methodology are previewed in order to use more of the available administrative data. The objective is to combine administrative data with surveys answers to modelling, in order to achieve better quality with the available data. This approach has been tested with variable "Energy costs".

Other specific methodologies are used for the calculation of variables: capital values, capital costs and FTE.

The value of fixed assets and the capital costs are estimated processing data of the vessel register, and according to the methodology suggested by the study on "evaluation of the capital value, investments and capital costs in the fisheries sector" (No FISH/2005/03).

According to the capital study, the estimation of the capital value (GCS) consisted of three steps:

    A. Specification of the composition of the active fleet by age (fleet register).

    The specification of the composition of the active fleet by age has been done by processing the fleet register.

B. Estimation of price per unit of capacity (GT).

In order to apply the PIM (perpetual inventory method) and in absence of other possibilities, the price per unit of capacity is estimated having in mind the price for building new vessels (replacement values). Those prices for 2011were:

- Small scale fleet segment = 21 050,00euros/GT;

- Polyvalents segment > 12 meters = 47 250,00euros/GT0,7;

- Trawl segment = 25 820,00 euros/GT0,8;

- Seiner segment = 15 170,00 euros/GT.

C. Calculation of the values of each vintage of the fleet at current prices.

After (1) and (2) we are able to estimate the Gross capital stock, the depreciated replacement value, and all the others variables. Inactive vessels are considered in the evaluation of the capital value and capital costs.

For calculation of FTE, survey information is collected about:

- Number of months of activity;

- Number of days of activity;

- Average number of working hours per day;

- Number of workers per month/gender/type of employment (partial/full time);

- Number of unpaid workers.

 The number of days of activity is gathered from logbooks and auctions.

5. Description of methodologies used on data quality

The sample size for each fleet segment is determined by statistical procedures, targeting the precision level required by DCF for the variable income of the previous year (CV < 5%). To mitigate the non-responses, the CV is increased to 20%.

Before the estimation methodology some quality checks are run. The collected values for each variable are plotted by fleet segment, and for extreme values, a direct contact with the respondent is established.

On the other hand, the same vessels can have, from year to year, huge variations for some of the variables that were expected to remain relatively stable, e.g.: fixed costs, due to the change of respondents and different interpretations for the same questions. Extreme values are compared with previous available answers for the same vessel, to provide more information during the contact with the respondent.

In both cases, if the extreme value is noticed as failure on the fulfilment, correction is made on the data. Otherwise, the value is considered an outlier.

Programa Nacional de Recolha de Dados da Pesca - 2015
Data Collection Framework - 2015

Reunião de Coordenação Nacional – 10 de abril de 2015 (sexta-feira)
National Coordination meeting – 10th April 2015 (Friday)
09:30 – 17:30

Local (*place*): Auditório do Edifício-Sede da DGRM

Ordem de Trabalhos
Agenda

1. Boas vindas e aprovação da Ordem de Trabalhos

   Welcome and adoption of the agenda

2. PNRD – 2014

   a. Avaliação do trabalho desenvolvido em 2014, nomeadamente *data calls*

   Evaluation of the work 2014, namely data calls

   b. Trabalho concretizado, constrangimentos verificados e forma como foram ultrapassados

   Tasks completed, main difficulties and how they were overcome

   c. RCMs e outras reuniões

   RCM and other meetings

   d. Relatório anual (alterações introduzidas e calendário)

   Annual report (changes and dates)

3. PNRD – 2015

   a. Reunião Correspondentes Nacionais – Bruxelas 25 de março

   National Correspondents meeting – Brussels 25th March

   b. Perspetivas do PNRD no enquadramento nova PCP

   DCF in the Framework of the CFP reform (landing obligation, data on aquaculture, regional cooperation, data quality)

   c. Programa de trabalho e reuniões previstas para 2015

   Data collection and meetings in 2015

   d. Data Call 2015

   e. Financiamento sob o novo FEAMP

   Funding through EMFF Information

4. Outros Assuntos

   Other matters

dgrm

Direção-Geral de Recursos Naturais,
Segurança e Serviços Marítimos

RELATÓRIO

REUNIÃO DE COORDENAÇÃO NACIONAL - PROGRAMA DE RECOLHA DE DADOS

LOCAL: DGRM-LISBOA
DATA: 10 de abril 2015
PRESENÇAS: DGRM; IPMA; DRPESCAS MADEIRA; DRPESCAS AÇORES; DEPARTAMENTO OCEANOGRAFIA E PESCAS DA UNIVERSIDADE AÇORES – DOP/IMAR (lista de presenças-anexo I)

Esta reunião realizou-se nos termos previsto no nº 4 do artigo 25º do Regulamento (UE) nº 1380/2013, relativo à Política Comum das Pescas. Em resposta ao convite formulado à DGMARE para estar presente, a mesma propôs uma ligação vídeo ou áudio, a qual foi concretizada por uma ligação SPYPE de cerca de 1hora (11h-12h, hora de Lisboa), com o funcionário daqueles Serviços (Bas Drukker).

Foi seguida a ordem de trabalhos (anexo II) sendo de realçar o seguinte:

1. **Programa Nacional de Recolha de Dados (PNRD) – 2014**
   - **Avaliação do trabalho desenvolvido em 2014, nomeadamente *data calls***
     Foi distribuída e submetida a confirmação da lista dos *data calls* recebidos em 2014 com observações sobre o cumprimento dos prazos e a qualidade da resposta. O Dr. Carlos Moura e o DOP/IMAR ficaram de atualizar o cumprimento. O IPMA entregou à signatária a lista dos *data calls* da sua responsabilidade (transmissão dos dados biológicos recolhidos pelo IPMA), considerando ter dado resposta integral aos mesmos

   - **Trabalho concretizado, constrangimentos verificados e forma como foram ultrapassados**
     Todos os Parceiros indicaram que, embora sob enormes constrangimentos financeiros, em 2014 haviam cumprido, no essencial, as respetivas obrigações do PNRD. Contudo, foram unânimes em considerar que a situação está a ficar insustentável em 2015, estando em risco o pagamento aos bolseiros, a concretização dos programas de recolha de dados em lota e a bordo das embarcações comerciais bem como das campanhas de investigação do programa.
     O DOP/IMAR reportou que tinha ficado completamente impossibilitado de cumprir o programa de observadores/rejeições durante todo o ano de 2014. Para além disso, teve problemas em termos de aquisição de exemplares de peixe para as amostragens biológicas com consequência no não cumprimento dos objetivos das amostragens biológicas (maturação e idade) para vários *stocks*.
     Desta forma, as respostas ao Programa de Trabalho 2014-2016, acordado com a Comissão, ficarão gravemente comprometidas.
     A signatária indicou que irá reportar o assunto superiormente, à semelhança do que já fizera, em 2014, a coordenadora anterior sobre este problema financeiro, de modo a encontrar-se uma solução para assegurar o cumprimento integral das obrigações nacionais. Alertou, ainda que, de acordo com o regulamento da nova PCP, caso um Estado Membro não recolha, ou não forneça, os dados atempadamente aos utilizadores finais, pode ficar sujeito a uma suspensão ou a uma interrupção da assistência financeira dos pagamentos intercalares no âmbito do FEAMP (Fundo Europeu dos Assuntos Marítimos e das Pescas).

   - **RCMs e outras reuniões**
     Os Parceiros referiram que haviam assegurado a participação em diversas reuniões, nomeadamente nas de coordenação regional relevantes e nos Grupos de trabalho do ICES,

NAFO, ICCAT e IOTC. A coordenadora nacional não esteve presente na RCM do Atlântico Norte por coincidência de datas com outra reunião importante decorrente das suas funções. Foi indicado que se procurará assegurar a presença, em 2015.

- **Relatório anual (alterações introduzidas e calendário)**
  Foi relatado, pela signatária, que a Comissão havia informado, na reunião de coordenadores nacionais realizada em Bruxelas no passado dia 25 de março que, em 2014, não tivera orçamento suficiente para fazer todos os reembolsos devidos porque alguns EM apresentaram custos muito elevados face ao orçamento disponível e, por isso, também atrasou um pouco as avaliações dos relatórios. Relativamente a 2013, apenas 3 EM receberam os pagamentos, 2 estão sob auditoria e espera-se que 16 recebam os pagamentos em breve.

  Informou-se, ainda que, se tinha conhecimento informal de que haveria lugar a correções financeiras relativamente a 2012 e, provavelmente, a 2013, na sequência da avaliação das respostas aos *data calls*. Sobre o pagamento de 2012, foi informado que o IPMA teria uma devolução a fazer e os restantes parceiros teriam pequenos acertos a receber.

  Os Parceiros presentes manifestaram forte desagrado com a demora da Comissão Europeia na verificação dos relatórios e no encerramento das contas relativas aos anos de 2012 e de 2013.

  Aliás, esta foi uma das questões colocadas ao funcionário da Comissão (Bas Drukker), tendo sido sublinhado o atraso no encerramento da avaliação do relatório de 2013. Foi explicada a difícil situação financeira que todos os Parceiros estão a enfrentar e que o envio do remanescente do financiamento devido por 2013 seria fundamental para minimizar os constrangimentos decorrentes por não ter havido qualquer adiantamento da União Europeia no ano de 2014, devido à alteração das medidas financeiras da UE para a execução da PCP. O referido funcionário indicou ter conhecimento de que estaria para ser enviada uma carta a Portugal solicitando esclarecimentos relativamente ao relatório de 2013. Foi transmitido ao funcionário da COM que esta carta, com pedidos de esclarecimento tanto tempo após a entrega do relatório iria agravar o atraso no pagamento do saldo.

  Relativamente ao relatório anual de 2014, a signatária informou que deveriam ser utilizados os novos formulários já transmitidos pela Comissão os quais foram revistos para simplificar e uniformizar a informação. O relatório deve ser enviado à DGMARE até ao final do próximo mês de maio, pelo que se acordou o envio de todos os contributos à signatária até 15 de maio p.f.. O relatório financeiro, que agora já não terá de ser enviado à Comissão, deverá ser enviado à signatária até 31 de maio, tendo sido acordado que se utilizariam os formulários do relatório de 2013.

  No que respeita aos documentos de despesa ficou acordado que cada Parceiro será responsável por manter um dossiê com os mesmos, para que, em qualquer altura possam ser consultados ou auditados.

  A Drª Marina Dias, do IPMA, descreveu as principais alterações nos formulários e, para facilitar o trabalho, comprometeu-se a enviar aos restantes Parceiros as tabelas do relatório anual 2014 com anotações.

  Drª Manuela Azevedo, do IPMA, solicitou informação sobre o nível de *metier* para o qual a DGRM pode fornecer informação sobre esforço de pesca e desembarques da frota nacional (desagregação máxima= nível 6: arte_espécie/comunidade_malhagem) e qual o algoritmo utilizado, tendo em vista a definição e harmonização dos algoritmos usados por Portugal (DGRM, Madeira e Açores). O IPMA insistiu na importância de resolver este assunto, que inclui uma análise sobre o rigor no nível de agregação por *metier*. Referiu ainda o facto de ser solicitado o reporte no relatório nacional de 2014 destas estatísticas por *metier* e de estar

planeada a revisão do atual plano de amostragem biológica, com vista à sua regionalização (DCF 2016-2020), o que terá implicações para o programa nacional.

O Dr. Carlos Moura, da DGRM, indicou que o nível de *metier* é condicionado pelo facto das vendas em lota, única fonte de dados existente para as embarcações isentas de diário de pesca, não permitirem recolher mais informação. Por outro lado, não terá possibilidade de, a curto prazo, facultar o algoritmo, dada a sobrecarga de trabalho com que se confronta. Tentará enviar essa informação no início do 2º semestre.

2. Programa Nacional de Recolha de Dados (PNRD) – 2015

- ### Reunião Correspondentes Nacionais – Bruxelas 25 de março

   A signatária relatou os principais aspetos abordados na reunião de Correspondentes Nacionais ocorrida a 25 de março, em Bruxelas, conforme relatório oportunamente enviado a todos os Parceiros e que se encontram refletidos ao longo dos pontos do presente relatório.

- ### Perspetivas do PNRD no enquadramento na nova PCP

   Ainda em audiência Skype com a Comissão, o Dr. Carlos Moura colocou a questão relativamente à compatibilização da nova da PCP com as obrigações que estão previstas no Programa de Recolha de Dados uma vez que esta é anterior e que não previa a recolha de alguma informação que, agora, está a ser solicitada pela própria Comissão como seja a compilação de indicadores económicos em segmentos de frota que operem exclusivamente fora de águas da União ou a necessidade de análises separadas às Regiões Ultraperiféricas quando as recomendações vinham no sentido de se enviar uma resposta única do EM.

- ### Programa de trabalho e reuniões previstas para 2015

   Foi verificada a lista enviada pela Comissão com os pedidos de dados (usuais) e as reuniões previstas para 2015, sendo que já não há lista de reuniões elegíveis para pagamento pelo Programa, ficando essa decisão à responsabilidade dos EM. Foi verificada a participação dos Parceiros nas reuniões previstas.

   Sobre este assunto, o IPMA questionou o funcionário da Comissão sobre a elegibilidade para apoio financeiro de mais de dois peritos em cada reunião, dado que em muitas das reuniões de avaliação/recomendações para a gestão há vários *stocks* de interesse para Portugal é absolutamente necessária a participação de mais peritos. O representante da Comissão reconheceu a contradição entre essa necessidade e o previsto no Regulamento (CE) nº 665/2008 e ficou de reportar o assunto aos seus Serviços, de forma a apurar se, tal como a lista de reuniões, também o nº de participantes nas mesmas ficará ao critério dos Estados Membros.

- ### Data Call 2015

   A signatária reportou que, na reunião de Correspondentes Nacionais, os EM foram informados que haverá uma plataforma para acesso aos problemas que foram identificados nos dados transmitidos (http://datacollection.jrc.ec.europa.eu/compliance).

   A Comissão informou, também, que em 2015, os dados para o STECF serão pedidos pelo menos 2 meses antes do início da reunião e os EM têm um mês para responder e 2 semanas para submeter qualquer revisão por sua iniciativa. Nas 2 semanas antes da reunião apenas serão aceites novos dados se tal for solicitado pelo STECF. Estes prazos também passam a ser válidos para outros pedidos de dados, nomeadamente no que respeita aos dados económicos da frota.

   Os *end users* fornecem à Comissão uma avaliação dos dados que lhes são fornecidos pelos EM, processo este que se enquadra numa exigência de maior transparência e uniformização.

A Dra. Manuela Azevedo informou que o IPMA responderá dentro do prazo (10 Abril 2015) ao *data call* ICES/WGBIE no que respeita à transmissão dos dados biológicos mas que não poderá transmitir os dados solicitados sobre esforço, da responsabilidade da DGRM, uma vez que não recebeu os mesmos. O Dr. Carlos Moura indicou que não poderia responder ao pedido na data limite estabelecida devido à sobreposição com outras obrigações de resposta igualmente importantes, mas que responderia posteriormente.

- **O Programa de Recolha de Dados e o Fundo Europeu dos Assuntos Marítimos e das Pescas**
  A signatária reportou que, na reunião de Correspondentes Nacionais, a Comissão havia informado ter concluído a análise dos Programas Operacionais (PO) de 3 EM e que estava agora a analisar mais 14 sob o ponto de vista da Recolha de Dados.
  A Comissão havia referido, também, que o indicador de cumprimento para o ano de 2013 deveria ser seguido porque resultou de uma avaliação correta e o objetivo a atingir em 2020 terá de ser um cumprimento de 100% dado que ser uma obrigação legal. Sublinhou que os PO têm de conter soluções para ultrapassar os problemas que foram identificados no passado.
  Além disso, a Comissão informou que era fundamental prestar informação sobre a relação administrativa e financeira entre a autoridade de gestão e o correspondente nacional de Recolha de Dados, devendo ser claro se o correspondente nacional é um beneficiário ou um órgão intermédio.
  A DGRM, com o apoio de todos os Parceiros, considerou que se deveria optar por considerar o Correspondente Nacional (Organismo Público em que está localizado) como um Órgão Intermédio, significando que o Programa de Recolha de Dados corresponderá a uma medida e cada Parceiro a uma operação. Esta opção permitirá manter um funcionamento semelhante ao que tem estado em aplicação.

Lisboa, 13 de abril de 2015

Emília Batista
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