dgrm

Direção-Geral de Recursos Naturais,
Segurança e Serviços Marítimos

ANNUAL REPORT
PORTUGUESE FISHING FLEET – 2016

1. SUMMARY

❖ *Findings on the balance between fleet capacity and fishing opportunities.*

A combined analysis of the results of indicators for use of vessels and biological and economic sustainability shows that the Portuguese fleet capacity is in balance with fishing opportunities for all segments. In segments which display some vulnerability, measures have been taken to adjust fleet capacity based on an Action Plan set out in this report with a view to improving the fleet/available resources ratio. Continuous monitoring of the situation allowed possible imbalances to be overcome in 2016. Suitable measures were implemented for the purpose, based on scientific assessments.

❖ *Fleet capacity*

At 31 December 2016, the Portuguese fishing fleet consisted of 7 980 vessels with a total gross tonnage of 93 609 GT and total engine power of 355 062 kW.

❖ *Characterisation of the most important segments*

In terms of fresh and chilled landed catches, the purse seine and trawling segments represented approximately 59.2% of the total volume of catches. Common mackerel, sardines and horse mackerel are the main species caught by purse seine fishing, representing 92.4% of all catches in this segment, with common mackerel being of note with around 58.9% (39 089 tonnes) of total purse seine catches. In the trawling segment, the three main species of fresh and chilled catches represent 75.03% of the total volume of landed fish. Of note was horse mackerel, standing at 62.27% (10 549 tonnes).

❖ *Entries to and exits from the fleet during 2016*

In 2016, 53 vessels joined the domestic fishing fleet (totalling 198 GT and 2 175 kW) while 119 exited the fleet (totalling 1 246 GT and 4 803 kW). Fleet entry registrations occurred mainly in the polyvalent fishing segment (PGP).

With regard to exits, it should be noted that the overwhelming majority of vessels leaving the fishing fleet were inactive vessels, followed by polyvalent fishing vessels (PGP), which largely offset the entry of new vessels.

❖ *Changes in the status of the resources and/or in fishing possibilities*

With regard to the status of the resources exploited by the Portuguese fleet and subject to Total Allowable Catches (TAC), there was positive development of note in the case of monk fish and hake, and particularly this year with respect to anchovies. Some concern persists with regard to lobster in relation to the functional unit in the North zone, and with regard to sardine, which despite showing slight recovery, continues with low recruitment levels. The good condition of populations of horse mackerel, blue whiting and common mackerel is of note, as these are very important species in the catches made by the Portuguese fleet.

❖ *Effort reduction and adjustment of capacity*

In 2016, the following fishing effort recovery/adjustment plans or capacity control regimes were in force:

Hake and Nephrops Recovery Plan / Adjustment Plan aimed at vessels with a special fishing licence included in the White Hake and Nephrops Recovery Plan, with the general goal of reducing the fishing mortality rate by 10% a year, via a reduction in fleet activity.

Fishing Capacity Control Regime for Deep-Water Species includes vessels licensed for use of hooked fishing lines for deep-water species, with the aim of reducing the fishing capacity by limiting the number of licences granted.

Recovery plan for East-Atlantic and Mediterranean bluefin tuna (Thon rouge; Atún rojo - Thunnus thynnus)
To enable the bluefin tuna population to recover, ICCAT provisionally adopted, at its annual meeting of 2006, a 15 year plan. Taking into account Recommendation 2006[05] adopted by the ICCAT to establish this recovery plan, Regulation (EC) No 643/2007, amending Regulation (EC) No 41/2007 was adopted. Council Regulation (EC) No 302/2009 sets out a multiannual recovery plan for bluefin tuna in the eastern Atlantic and Mediterranean, amending Regulation (EC) No 43/2009 and repealing Regulation (EC) No 1559/2007

Greenland halibut Recovery plan (Reinhardtius hippoglossoides) – Council Regulation (EC) No 1197/2009 of 30 November 2009 amending Regulation (EC) No 2115/2005 establishing a recovery plan for Greenland halibut in the framework of the Northwest Atlantic Fisheries Organisation. Adopted in 2010 and in effect until 2017.

Sardine Fishing Management Plan 2012-2015, which was extended to 2016/2017 and which sets out catchable amounts as well as measures for activity management and control of vessels fishing sardines using purse seines.

❖ *Compliance with the entry/exit scheme*

The fleet additions and removals scheme is operated according to the regulations applicable to the mainland (MFL) and the outermost regions. In the case of the MFL fleet, the addition or re-addition of vessels is only authorised in exchange for a removal from the fishing fleet of the same or a higher capacity in gross tonnage (GT) and engine power (kW). In 2016, Portugal achieved the objectives relating to fleet capacity and observed the established reference levels.

❖ *Plans to improve the fleet management system*

In 2016, with the aim of improving the fleet management system, restrictions were maintained on licensing for the use of certain fishing gear in order to regulate fishing effort and protect the most vulnerable species or species at less sustainable levels of exploitation. This was also the case for certain hydrographic basins and with regard to the setting up of biodiversity marine reserves. Limitations continue on the issue of new licences to avoid increases in fishing effort on the different resources caught and favour the maintaining of existing balances. A further measure which has been used in fleet management is the withdrawal of vessels and the transfer of the respective gear to other vessels which remain active. This provides improved profitability without increasing the fishing effort.

❖ *Use of equilibrium indicators*

Usage indicators for vessels and economic indicators were calculated in all segments and biological sustainability indicators were used for species with greater relevance in Portuguese catches and for which assessment exists. This information was provided by the International Council for the Exploration of the Sea (ICES).

2. BALANCE BETWEEN FLEET CAPACITY AND FISHING OPPORTUNITIES

In 2016, the policy for sustainable exploitation of resources was continued, seeking to conciliate this policy with the balanced management of the capacity of the national fishing fleet. In parallel, measures have been implemented to improve conditions and practices in terms of onboard safety and living conditions for crews.

Regarding the balance between fleet capacity and fishing opportunities, and based on the joint application of biological, economic and activity indicators, it can be seen that no fleet segments exist which are structurally out of balance. An improvement can also be seen in the economic performance in all segments, particularly the purse seine segment. This segment is the most significant in the coastal fleet in terms of catch volume, and mainly responsible for sardine catches. With regard to biological indicators, most segments are balanced. However, with respect to sardines, the ICES assessment for 2015 on the Iberian sardine stock noted that recruitment failures exist and that it has been below mean levels since 2005. Despite monitoring campaigns conducted by the Portuguese Institute for the Sea and Atmosphere (IPMA) pointing to some signs of recovery,

purse seine fleet management capacity and the exploitation of sardines have been conducted through limitations on catches leading to lower activity ratios. It should be noted that income from over exploited units only accounts for an average of 10% of the total income from the same segments, and that none of the six populations at risk represents more than 9% of the catches landed in Portugal.

With regard to the fleets of outermost regions, two segments of the Madeira fleet have continued negative economic performance as well as negative biological indicators. In light of this situation, a structural imbalance is considered to exist in HOK vessels, from 24m to 40m, which operate exclusively in tuna fishing with pole-and-line and in the MGP segment which includes vessels from 18m to 24m.

3. GENERAL DESCRIPTION OF THE FLEET IN RELATION TO THE FISHERIES
Description of the fleet

At 31 December 2016, the Portuguese fishing fleet consisted of 7 980 vessels with a total gross tonnage of 93 609 GT and total engine power of 355 062 kW. Vessels are distributed over the mainland (MFL), the Autonomous Region of the Azores (ARA) and the Autonomous Region of Madeira (ARM).

The national fleet has a prevalence of small fishing boats, where around 90.5% of registered vessels have overall lengths of less than 12 metres and low gross tonnage, which together represent only 13% of total national tonnage. The average age of the registered fleet is approximately 33 years and the average age of the active fleet is around 24 years. Annex I shows additional information providing a more detailed description of the Portuguese fishing fleet.

Developed fishing grounds (Link with fisheries)

The national fishing fleet consists of the mainland fleet and vessels in the outermost regions of Madeira (ARM) and the Azores (ARA), and works according to the operating areas and gear assigned to it. They are grouped as follows: Gillnets and trammel nets (DFN); Dredgers (DRB); Trawlers (DTS); Traps (FPO); Lines and Hooks (HOK); Beach Seines (MGO); Seine Nets (PS); Beam Trawls (TBB); Polyvalent vessels (MGP, PGP and PMP). In Annex II, a description can be found of fisheries with information on the main species landed, operating zones and the proportion of activity of each group with regard to the total for the active fleet. In Annex III, the Portuguese fleet situation at 31 December 2016 can be seen, broken down into regions and licensed gear, in accordance with the segmentation set out in the National Fish Data Collection Programme (PNRD).

The fishing fleet registered in ARM operates essentially in sub-area 2 of the Madeira-EEZ with vessels working in specific seasons of the year in the waters of the Azores and Canary Islands, under Reciprocity Agreements and in CECAF international waters. This mostly multi-purpose fleet, is licensed mainly for pole-and-line, deep longline and purse seine. The most representative species are tuna, black scabbard fish and small pelagic (common mackerel and blue jack mackerel) which represent around 91% of landed catches. Coastal demersal species and molluscs constitute around 9% of total catches in the region, caught essentially by bottom set lines, hand lines, traps and catching devices in the case of molluscs (limpets).

The fishing fleet of the Azores (ARA) is traditional and consists mostly of vessels with lengths of less than nine metres. Although this fleet has reduced in size over the years, in 2016 it still represented 63% of the total ARA fleet (Figure 1). Most vessels in this region work with line and hook and represent 85% of the total of the active fleet (Figure 2). The remaining vessels work essentially with gillnets and purse seine to catch small pelagic species.

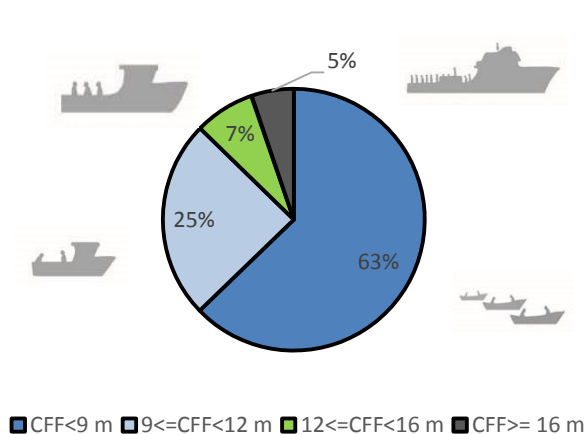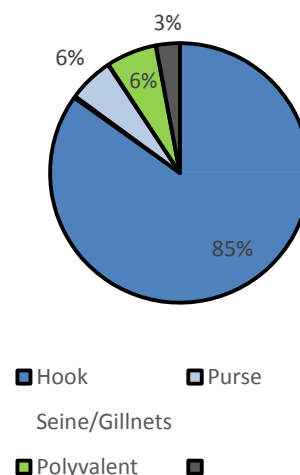Figure 1 – Breakdown of ARA fleet into length classes.

Figure 2 – Breakdown of ARA fleet into segments.

Development of the fleet

The national fishing fleet continues to decrease in size due to the process implemented in recent years to adapt capacity to available resources. Comparing the situation on 31 December 2016 to the situation on 1 January 2003, a reduction of 22.36% can be seen in terms of vessel numbers, 19.51% in terms of gross tonnage and 11.37% in terms of propulsion capacity (Table 1). With regard to the active fleet, Annexes IV and IV-A show the evolution during the 2012-2016 period, per region, length class and fleet segment. It can be seen that there was a reduction of 8.97 % in terms of vessel numbers, corresponding to a decrease of 11.98 % in gross tonnage and 7.1 % in propulsion capacity.

Table 1

REGION	FLEET AT 01/01/2003			FLEET AT 31/12/2016			DIFFERENCE IN ABSOLUTE VALUES			DIFFERENCE IN % VALUES		
	No	GT	POW(kw)	No	GT	POW(kw)	No	GT	POW(kw	No	GT	POW(kw
MFL	8 209	99 768	333 834	6 785	79 373	283 837	-1 424	-20 395	-49 997	-17.35	-20.44	-14.97
ARA	1 590	12 308	50 126	762	10 233	54 609	-828	-2 075	4 483	-52.1	-14.99	8.94
ARM	479	4 231	16 658	433	4 003	16 616	-46	-228	-42	-9.6	-5.38	-0.25
TOTAL PORTUGA	10 278	116 307	400 618	7 980	93 609	355 062	-2 298	-22 698	-45 556	-22.36	-19.51	-11.37

Evolution in 2016 - Entries and Exits

In 2016, 53 vessels joined the domestic fishing fleet, totalling 1 198 GT and 2 175 kW. Table 2 shows the number of vessels registered by fleet segment and Table 3 the respective origin. It can be seen that 64% came from new construction (CST) and 36% referred to vessels from different activities (CHA). These figures contradict the trend seen in recent years towards a decrease in new construction.

ENTRIES PER FLEET SEGMENT

Table 2

SEGMENT/RE GION	DFN	DTS	FPO	HOK	PGP	PMP	TBB	TOTAL
MFL	6	1	1	3	30	1	4	46
ARA	0	0	0	2	0	0	0	2
ARM	0	0	0	5	0	0	0	5
TOTAL	6	1	1	10	30	1	4	53

ENTRIES BY TYPE OF EVENT

Table3

REGION	TYPE OF ENTRY		TOTAL
	CHA	CST	
MFL	14	32	46
ARA	0	2	2
ARM	5	0	5
TOTAL	19	34	53

During 2016, 119 vessels left the national fleet with total gross tonnage of 1 264 GT and propulsion capacity of 4 803kW. Table 4 shows the number of vessels immobilised by fleet segment. It should be noted that 80.6% of those vessels did not work in 2016.

Table 5 shows the number of departures from the fleet by type of event. It can be seen that 54.6% were destroyed (DES) and 41.2% registered for an activity other than fishing (RET).

EXITS PER FLEET SEGMENT

Table 4

SEGMENT /REGION	DFN	DTS	HOK	MGO	PGP	PMP	TBB	INACTIVE	TOTAL
MFL	4	1	1	2	12	1	1	90	112
ARM	0	0	1	0	0	0	0	6	7
TOTAL	4	1	2	2	12	1	1	96	119

EXITS BY TYPE OF EVENT

Table 5

REGION	TYPE OF EXIT			TOTAL
	DES	EXP	RET	
MFL	62	5	45	112
ARM	3	0	4	7
TOTAL	65	5	49	119

Table 6 shows fleet movement by region during 2016 for entries, exits and changes in capacity (GT and kW). A trend towards overall reduction can be seen.

Table 6

EVOLUTION OF FLEET IN 2016	PORTUGAL			MAINLAND - MFL			THE AZORES -			MADEIRA - ARM		
	No	GT	KW	No	GT	KW	No	GT	KW	N	GT	KW
CAPACITY OF FLEET AT 01-01-2016	**8 046**	**94 505**	**357 152**	6 851	80 339	286 087	760	10 157	54 363	435	4 009	16 702
ENTRIES IN 2016	**53**	**198**	**2 175**	46	114	1 753	2	72	260	5	12	161
CHANGES IN 2016		**152**	**539**		147	555		4	-14		1	-2
EXITS IN 2016	**119**	**1 246**	**4 803**	112	1 227	4 558	0	0	0	7	20	245
CAPACITY OF FLEET AT 31-12-2016	**7 980**	**93 609**	**355 062**	6 785	79 373	283 837	762	10 233	54 609	433	4 003	16 616
DIFFERENCE IN ABSOLUTE VALUES	**-66**	**-896**	**-2 090**	-66	-966	-2 250	2	76	246	-2	-6	-86
PERCENTAGE DIFFERENCE	**-0.82**	**-0.95**	**-0.59**	-0.96	-1.20	-0.79	0.26	0.75	0.45	-0.46	-0.15	-0.52

4.FISHING EFFORT

Schemes for the Reduction of Fishing Effort and Reduction of Fishing Capacity
(Statement of effort reduction schemes and capacity reduction)

In 2016, the plans set out in Table 7 were in force.

Recovery/Adjustment Plans to Fishing Effort/Capacity Reduction

Table 7

| In effect in 2016	Intended for	Objectives
Recovery Plan for Hake and Nephrops / Adjustment Plan	Vessels with a special fishing licence included in the Southern White Hake and Nephrops Recovery Plan	Reduction in the fish mortality rate of 10% per year, which has been implemented by reducing fleet activity (fishing days) by 10 % per year, for vessels with overall length >10 metres, which have landings of more than 5 tonnes of hake or 2.5 tonnes of lobster.
System for controlling fishing capacity for deep-water species	Vessels licensed for longline fishing for deep-water species	Limitation of fishing capacity through the number of licences.
Recovery Plan for Blue-Fin Tuna	Traps Vessels licensed for surface longline or feeder and pole lines (by-catches)	Restocking of blue-fin tuna
Greenland halibut Recovery plan	NAFO licensed vessels	Ensure the long-term sustainable exploitation of halibut, with a planned annual adjustment of TAC, in accordance with a harvest control rule
Sardine Fishing Management Plan 2012-2015	Vessels licensed for purse seine	Limit on catches to achieve MSY in 3 years

Impact of fishing capacity reduction schemes

Vessel adjustment plan for the Hake and Nephrops Recovery Plan

In 2016, 114 vessels were initially included with activity restrictions in the Southern Hake and Nephrops Recovery Plan which presented hake landings of more than five tonnes or lobster in amounts exceeding 2.5 tonnes in the two previous years (2012-2013). This number is higher than that for 2015, where 92 vessels were initially included. According to European legislation, vessels with catches that reached five tonnes during the management period entered the group of vessels with restricted activity, with a number of fishing days proportional to the time when they entered the Plan. In 2015, 10 vessels were in this situation. The authorised activity set out in Regulation (EU) No 2016/724 of 22 January was 113 days per vessel, regardless of the type of fishing gear used.

Not included in this limit are days corresponding to journeys during which hake catches did not exceed 8% of the total. Based on landing history, the vessels included in the Recovery Plan were allocated with individual quotas of hake, for a total of 77.6%. The remaining quantity of hake available was reserved for the vessels not included in the Plan with activity restrictions (19.9%) and the remainder (2.5%) for landing requirements. These measures were effective in terms of restriction of catches, as more than 65% of the adjusted national quota was not used.

The overall level of fishing effort of vessels involved in the Hake and Nephrops Recovery Plan (kW/day) is shown in Figure 3. It can be seen that between 2007 and 2016, there was a decrease in effort of 35.6%.

Figure 3
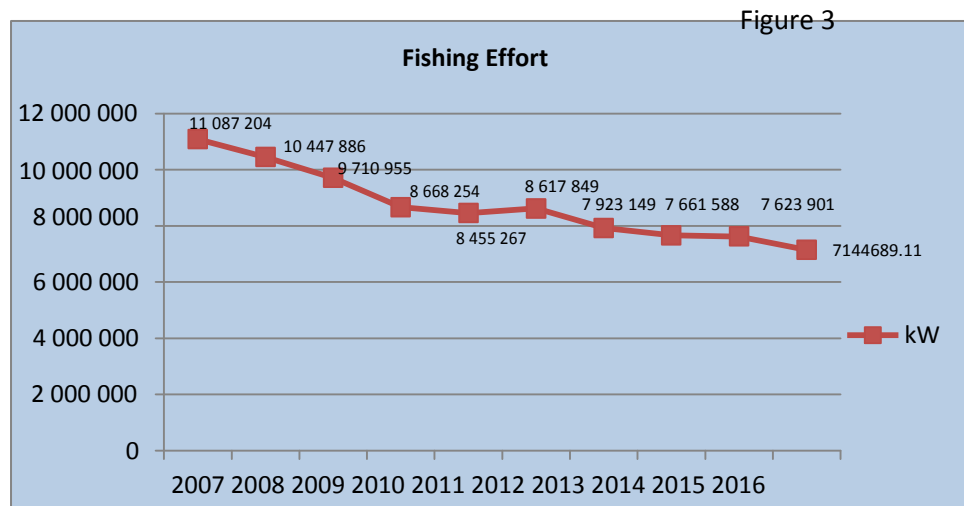
Source: DGRM

Within the scope of the Fishing Effort Adjustment Plan for White Hake and Nephrops, a temporary fleet immobilisation measure was also adopted in 2016 to ban lobster fishing (*Nephrops norvegicus*), with a maximum duration of 45 days (Ministerial Implementing Order No 256-A/2016 of 28 September 2016).

System for controlling fishing capacity for deep-water species

Among the deep-water species important for Portugal is the black scabbardfish which supports traditional fishing on the mainland and in Madeira. In 2016, landings of deep-water sharks were blocked on the mainland that had been caught in small percentages by the black scabbardfish fleet. In the same year, on the mainland, 38 vessels were licensed to fish for deep-water species in ICES zone IX. However, the fishing capacity involved in catching black scabbardfish is much lower, standing at less than half of that authorised.

Vessels licensed for deep-water species

Table 8

Year	No Vessels	Variation in relation to 2007
2007	50	0
2008	49	-1
2009	49	-1
2010	44	-6
2011	41	-9
2012	41	-9
2013	40	-10
2014	40	-10
2015	39	-11
2016	38	-12

Sardine Fishing Management Plan

Since 2010, there have been specific regulations for sardine fishing with purse seine nets, as part of fishery certification within the scope of the MSC – Marine Stewardship Council, the management measures for which are set out in Ministerial Implementing Order No 251/2010 of 4 May 2010, with the amendments introduced by Ministerial Implementing Order No 294/2011 of 14 November 2011. The aims of the Sardine Management Plan for the 2012-2015 period sought to recover biomass levels up to 368 000 tonnes, corresponding to the Btrigger.

In 2010 and 2011, a maximum catch limit was established at nearly 55 000 tonnes. In 2012 and 2013, this limit was substantially reduced to 36 000 tonnes and in 2014 to 20 520 tonnes. In addition to halting sardine fishing for 48 hours every week, which has been in force since 2010, a ban was also implemented between 2012 and 2014 for 45 days each year, staggered along the coast, in order to protect juveniles. However, due to successive poor resourcing, sardine biomass has not recovered to sustainable levels, thus compromising MSC certification.

Table 9

Year	Capture Limit (Tonnes)	Variation in relation to 2010 (%)
2010	55000	
2011	55000	0
2012	36000	-34.55
2013	36000	-34.55
2014	20520	-62.69
2015	10095	-81.64
2016	11560	-78.98

For 2016, once again the ICES opinion for the Iberian sardine points to a reduction in the fishing mortality rate to a maximum of around 17 000 tonnes for Portugal and Spain, with 11 560 tonnes for Portugal. With these constraints on sardine catches, new measures considered suitable for management of this species were implemented. These measures included a precautionary 59 day fishing ban between January and March, the division of the amount of sardine available among recognised Producing Organisations (OP) for sardine and the setting of maximum sardine catch amounts per day and per vessel.

With the established level of catches having been reached, sardine fishing was closed in October and authorised after this time only on an ancillary basis. The temporary immobilisation measure on sardine fishing vessels was continued, already implemented in 2015 (Order No 15689-A/2015 of 30 December 2015).

Overall fishing effort in western waters

The overall fishing effort by the Portuguese fleet in western waters under Commission Regulation (EC) No 1954/2003 of 4 November 2003 can be found in Table 10. In the last seven years, it can be seen that there has been an overall reduction in fishing effort (kW/day) of around 32%.

Table 10

YEAR	2010	2011	2012	2013	2014	2015	2016
kW/DAY	10 085 558	11 252 378	11 300 390	6 353 343	6 426 705	6 695 818	6 813 350

5.SYSTEM OF ENTRIES AND EXITS AND REFERENCE LEVELS (Statement of compliance with entry/exit regime)

In relation to the capacities of the Community fleet, each Member State has its segmentation defined. In Portugal's case, the capacities (in GT and kW) are managed by region (MFL, ARA and ARM), with the mainland fleet (MFL) being managed in overall terms, while the fleets from each autonomous region are managed by the segmentation established in POP IV: 4K6, 4K7 and 4K8 for the Autonomous Region of Madeira and 4K9 and 4KA for the Autonomous Region of the Azores. In 2016, Portugal complied with the applicable standards for the system of entries and exits and respected the reference levels established for the mainland and outermost region fleets.

In Annex V, Graphs 1 and 2 show the evolution of the mainland fleet (MFL) in gross tonnage (GT) and propulsion capacity (kW) in relation to the reference levels for the period from 1 January to 31 December 2016. Graphs 3, 4, 5 and 6 show – by fleet segment – the reference levels and the capacities in gross tonnage and propulsion for the fleets in the outermost regions of the Azores and Madeira. In the tables in Annex VI to VI-c, data for which were obtained from the Community file updated to 1 March of this year, the amounts reported and the respective reference levels and capacity limits are presented in greater detail.

6.MANAGEMENT OF FISHING FLEETS

Strengths and weaknesses in the fleet management system

Strengths:

•Existence of an efficient Integrated Fishing Information System (SI2P) which, in addition to recording all movements of fishing vessels including entries, changes and exits, allows the good management of national fleet capacities. It further ensures the control and management of fishing licences and the control of catches;

•Existence of a vessel monitoring system (MONICAP), allowing the surveillance and control of fishing activities;

•The requirement that the first sale takes place at a fish auction, allowing greater control over catches actually made.

Weaknesses:

•In relation to multi-specific fishing, the difficulty in implementing systems to control fishing efforts by species, due to the impact on fishing profitability;

•The high number of vessels that use different types of fishing gear throughout the year makes the process of analysing the fishing effort impacted by each type of gear more difficult.

•The high number of small or medium-sized vessels which do not have monitoring equipment making controlling them difficult while also hindering cross-referencing.

Plans for improvements in the fleet management system

Licensing limits have been in place for several years for the use of certain types of fishing gear in the capture of more vulnerable species or species at less sustainable levels of exploitation. This is also the case for certain hydrographic basins and with regard to the setting up of biodiversity marine reserves. In specific situations, so as to avoid wasting resources which could be used profitably, the administration has allowed transfers of fishing gear between vessels. In cases where the viability of activity is at stake, the transfer of gear with withdrawal of vessels that lose some fishing gear provides vessels that remain active with better economic profitability without increasing fishing effort. The issue of new fishing licences to use fishing gear is strictly limited to avoid increases in fishing effort in different species, favouring the continuation of the existing balance.

Information on the general level of compliance with fleet policy instruments

In relation to Community regulation on fleets, we would like to highlight the following areas:

Controlling fishing fleet capacity

Capacities of the national fleet in terms of gross tonnage (GT) and propulsion capacity (kW) are managed through strict control of entering capacities against exiting capacities in accordance with the Common Fisheries Policy - Regulation (EU) 1380/2013. The Directorate-General of Natural Resources, Security and Maritime Services (DGRM) may authorise the entry of new capacities into the mainland fleet and increase registered fleet capacity. In the case of outermost region fleets, this competence is the responsibility of regional entities. Fleet capacity is inspected on a case-by-case basis for all situations requiring new entries or increases in capacity and is made on a quarterly basis by means of periodic updates of the Community file.

Control and inspection of fishing activity

Fishing activity, as defined in Regulation (EC) No 1224/2009 of 20 November 2009 and Implementing Regulation (EU) No 404/2011, with the respective amendments, is controlled by checking the technical measures implemented, as well as by verifying and analysing the sale of fish at auction, the fishing log and the VMS vessel monitoring system.

Information is obtained in real time from the VMS system on the location, route and speed of vessels employing this equipment, (vessels with overall length greater than 12 metres) making it possible to monitor their respective activities. Data transmitted are compared to the data on catches/landings, making more thorough control possible while also obtaining information that is used for compliance with Community obligations in matters relating to fishing activity, more specifically control of fishing effort, monitoring the use of quotas and closure of fishing grounds, if applicable.

The control and inspection of fishing and related activities under the Common Fisheries Policy as well as the combat of IUU fishing are carried out by the competent authorities of the autonomous regions and the DGRM which has competence for coordinating the activity of the different entities with control and inspection responsibilities. In addition to the DGRM, also contributing to control, inspection and surveillance actions are the Regional Inspectorate of Fisheries for the Azores, the Regional Directorate of Fisheries for Madeira, the National Republican Guard, the Air Force and the Directorate-General of the Maritime Authority, which form part of the Information, Monitoring, Inspection and Control of Fishing Activities System (SIFICAP).

In 2016, the main aims of monitoring included special focus on species subject to TAC and recovery plans and priority inspections on vessels which: had auction sales; were included in the hake and lobster recovery plan; had high levels of catches and landings of small pelagic species (mackerel, horse mackerel, anchovy, blue whiting, herring and sardine); operated in RFMO, NAFO and NEAFC and, vessels with large catches of deep water species. 2 255 vessels were inspected, corresponding to 6 239 monitoring actions. Alleged offenders included 493 vessels and 617 alleged breaches, corresponding to approximately 21.9% of vessels and 9.9% of all monitoring actions, respectively. It is also important to note that with

regard to inspections of vessels falling within the abovementioned aims included: 56% of vessels which in 2015 sold catches at auction; 79% of vessels which had large catches and landings of pelagic species; 94% of vessels covered by the hake and lobster recovery plan; 78% of vessels licensed for fishing deep water species; 54% of vessels operating in NAFO and 74% of those operating in NEAFC. The most common alleged breaches related to: prohibited or non-compliant gear, absence or incorrect records (DPElectronic and DPapel messages) and/or VMS; fishing in prohibited areas or during prohibited periods; prohibited catch or smaller than legal minimum; non-compliance with scheme for 1st sale at auction; incorrect identification and/or signage of gear; under-declaration or exceeding of catch or quota limits.

In Madeira, there is a Regional Control Centre operating in identical terms to the National Fisheries Surveillance and Control Centre. The system allows the daily monitoring of fishing vessels. This information is cross-referenced with data from landings and from fishing logs. In the event of any breaches, alerts are triggered leading to the issue of notifications. Another system, the Information, Inspection and Control of Fishing Activity System (SIFICAP), allows the different entities operating in this system to liaise. It also provides access to data on the fleet, licensing, records and other information relevant to the control process.

Using this information, a risk analysis is carried out allowing priorities to be established with regard to control and inspection. These priorities are then distributed among the entities responsible for monitoring fishing activities (Navy, GNR and Air Force) and the National Fisheries Authority, DGRM. Inspections in the Madeira area are coordinated on a monthly basis with other entities at a Programming and Planning Committee, under the control of the DGRM.

7. INFORMATION ON CHANGES TO ADMINISTRATIVE PROCEDURES RELEVANT TO FLEET MANAGEMENT

With regard to fleet management, the Integrated Fisheries Information System (SI2P) continues to facilitate licensing procedures for vessels in the Portuguese fishing fleet. This system is accessible electronically both from the mainland as well as from the Azores and Madeira.

With a view to the meeting of objectives of the Common Fisheries Policy (CFP), established by Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December, with regard to the gradual implementation of the requirement to land all species which are subject to catch limits (TACs) in the Atlantic, and through the Integrated Fisheries Information System (SI2P), the necessary administrative procedures have been developed.

The following changes to administrative procedures, made as a result of implementing fishery management measures and technical measures for fishing activity, should also be noted:

•The definition of management measures for sardine, through the banning of sardine catches in certain periods of the year and the setting of limits sardine landing limits when caught with purse seine, and the setting of maximum sardine catch quantities per day and per vessel (Order No 15689-B/2015 of 30 December 2015; Ministerial Implementing Order No 34-A/2016 of 29 February 2016; Order No 3112-B/2016 of 29 July 2016; Order No 9806-A/2016 of 31 August 2016; Order No 34/DG/2016 of 31 August 2016; Order No 37/DG/2016 of 3 October 2016 and Order No 38/DG/2016 of 18 October 2016);

•The setting of a fishing ban period for vessels licensed to operate with purse seine in Zone IX as defined by the International Council for the Exploration of the Sea (ICES) - Ministerial Implementing Order No 283-A of 31 October;

•The allocation of fishing quotas, per vessel, to the vessels covered by the Hake and Nephrops Recovery Plan, Order No 23/2016 of the Director-General of the DGRM, in accordance with Ministerial Implementing Order No 187/2009, republished by Ministerial Implementing Order No 186/2013 of 21 May 2013;

•The setting of a fishing ban for lobster (Nephrops norvegicus) in October 2016, in Zones IX and X as defined by the International Council for the Exploration of the Sea (ICES) and division 34.1.1 as defined by the Fishery Committee for the Eastern Central Atlantic (CECAF), Ministerial Implementing Order No 256-A/2016 of 28 September.

•The definition of the management model for mackerel (*Scomber scombrus*) breaking down the available quota among the different fleets which traditionally catch this species, through Ministerial Implementing Order No 322-C/2016 of 31 December 2016;

8.BALANCE INDICATORS

The indicators for analysis of the balance in the Portuguese fleet between fishing capacity and fishing possibilities were applied in accordance with the European Commission guidelines of 2 September 2014 (COM-545 final). Data is presented separately for mainland, Madeira and Azores fleets and for the fleet which operates exclusively outside European Union waters.

8.1.Inactive Fleet Indicator

In 2016, 4 233 vessels had no fishing activity.

These vessels correspond to around 53% of the total registered fleet, but which in terms of capacity, account for approximately 24.2% of gross tonnage (GT) and 23% of propulsion power (kW). In Annex VII, broken down by length class and region, the proportion of inactive vessels is shown in number and capacity (GT and kW) for the total of vessels registered in each region. It should also be noted that there is a high number of vessels with prolonged activity. In 2015, a process was started to remove these vessels from the fishing fleet. As this is a process requiring specific administrative procedures, it is expected that the removal of vessels covered by this type of inactivity will take place no later than the end of 2018.

8.2.Vessel use Indicator - *Fleet segment utilisation ratio Average Days at Sea / Maximum Days at Sea*

In order to assess the activity levels of the national fleet, the number of days at sea, per vessel, in each fleet segment was used. Data to calculate the indicator were obtained from both traditional and electronic fishing logs (DP and DPE) and landings made at auction, applying the ratio between the average number of days at sea per vessel and the maximum number of days at sea observed. The assessment of Portuguese fleet activity was calculated per region (MFL, ARA and ARM). Also shown separately is data on the fleet which operates exclusively outside European Union waters.

MFL

Annex VIII presents figures for the last six years for the MFL and for vessels which operate exclusively outside European Union waters. Trawl (DTS and TBB) and dredge (DRB) segments include vessels which use only one type of gear. The seine segment includes mostly vessels which operate exclusively with purse seine. However, this segment also includes smaller vessels which, despite using mainly seine gear, are licensed for other gear. The remaining segments include vessels which use two or more types of gear.

In 2016, in all segments of the MFL, the ratios show percentages of use which vary between 0.23 and 0.94. An analysis of the 2011 to 2016 period shows relative intra segment uniformity but differences between segments. In most segments, it is the smaller fishing boats which have the lowest usage rates. The use of a traffic light system for 2016 shows that 56% of segments/length classes in the mainland fleet have ratios with unsatisfactory values (red), 41% are mid-level (yellow) and 3% have satisfactory ratios. Segments which have shown continued unsatisfactory ratios include the purse seine segment which is subject to activity restrictions under management plans and measures implemented to assist in the recovery of sardines, and the segments which include vessels up to 10m in length. In 2016, ratios for the Nets, Dredges and Polyvalent segments, with lengths of over 10 m, show a slight improvement over figures for 2015.
With regard to the fleet which operates exclusively outside European Union waters, a slight improvement can be seen in the ratios over previous years, except in the longliner segment, which has an unsatisfactory ratio. However, as this is a segment with a small number of vessels with ratios which have varied over the years, it is not possible to draw conclusions on any possible fleet over-capacity

In light of the figures obtained for the national fleet in general, it can be seen that the indicator, as it is defined, is not the most suitable for measuring the real activity of vessels. It does not allow reliable conclusions to be drawn on possible fleet over-capacity. The variability between the maximum number observed and the average number of days at sea is mostly due to the specificities inherent to the vessels classified in these segments. It has little to do with structural under-activity. Although this finding applies to most fleet segments, in the case of small vessels, this unsuitability becomes more evident, as these are segments where there is great diversity in the fishing they undertake. The main factors which contribute to these differences is the high variability of weather and sea conditions in the different mainland zones/regions, part-time work by a

high number of vessels - seasonal activity - and compliance with specific seasonal closures for certain zones or types of gear. With regard to the influence of weather conditions on activity, vessels which operate in the north of the country have to endure much harsher weather than vessels operating in other areas of the country, especially the south, which are normally able to operate without great restrictions.

Although this indicator does not allow conclusions to be drawn on fleet over-capacity, it is information which when complemented by other relevant information, can help introduce the necessary measures.

ARA Fleet

With regard to fleet activity in the Azores, it can be seen that, between 2008 and 2016, usage ratios are relatively low and without any discernible trend. The relative diversity of the different segments in the Azores fleet is closely related to the technical characteristics of the vessels and their pattern of use. Factors contributing to this diversity include weather conditions which significantly affect vessels' ability to operate, especially smaller vessels. Weather conditions also vary considerably from island to island (e.g.: western group vs. eastern group; north coast vs. south coast). It is also necessary to take into account the fact that a small but significant proportion of vessel owners have more than one professional activity or only work on a seasonal basis on board other vessels (e.g., during the tuna catch).

Given the characteristics of the Azores fleet, the application of the proposed usage indicator does not allow conclusions to be drawn on any possible technical capacity imbalances.

Table 11

			2008			2009			2010			2011			2012			2013			2014			2015			2016		
			Med	Max	Ind	Med	Max	Ind	Med	Max	Ind	Med	Max	Ind	Med	Max	Ind	Med	Max	Ind	Med	Max	Ind	Med	Max	Ind	Med	Max	Ind
	DFN	VL0010	69	146	0.47	71	136	0.52	60	127	0.47	69	130	0.53	76	130	0.59	70	116	0.60	68	99	0.68	76	140	0.54	87	157	0.55
	HOK	VL0010	78	247	0.32	71	225	0.32	63	229	0.28	70	237	0.30	68	213	0.32	72	219	0.33	77	176	0.44	66	191	0.35	63	195	0.32
		VL1012	166	323	0.51	141	267	0.53	122	243	0.50	106	223	0.48	95	204	0.47	116	244	0.48	135	230	0.59	120	204	0.59	90	194	0.46
Azores AREA 27		VL1218	276	470	0.59	232	388	0.60	153	292	0.52	156	325	0.48	131	288	0.46	125	247	0.50	146	326	0.45	114	192	0.59	82	185	0.44
		VL2440	122	301	0.41	119	171	0.70	146	215	0.68	155	212	0.73	138	203	0.68	131	183	0.71	110	130	0.84	129	181	0.71	83	176	0.47
	PGP	VL0010	95	168	0.57	76	163	0.46	84	152	0.55	81	151	0.54	65	132	0.49	61	154	0.39	48	78	0.62	78	138	0.57	89	134	0.66
	PS	VL0010	83	139	0.59	88	144	0.61	79	131	0.60	74	137	0.54	53	130	0.41	69	96	0.72	90	122	0.74	88	143	0.62	83	155	0.54
		VL1012	198	245	0.81	168	221	0.76	192	240	0.80	174	232	0.75	151	213	0.71	133	195	0.68	170	177	0.96	187	213	0.88	126	168	0.75

ARM Fleet

With respect to the Madeira registered fleet for the period under consideration, unsatisfactory ratios (red) can be seen in the segment with overall length of less than 10m in MGP. This is a result of the diversity of fishing activities, the fragility and lack of safety conditions in most vessels when operating further from the coast in adverse weather, the fact that fishing frequently takes place in the summer and, sometimes, as a secondary activity.

In the remaining fleet segments, the ratios generally show an improvement over 2015, demonstrating a positive evolution, despite tuna fishing vessels being bound to seasonal fishing, as compared to deep water species vessels which operate all year long.

Table 12

			2012			2013			2014			2015			2016		
			Med	Max	Ind	Med	Max	Ind	Med	Max	Ind	Med	Max	Ind	Med	Max	Ind
	HOK	VL0010	50	144	0.35	43	134	0.32	62	157	0.39	153	210	0.73	186	235	0.79
		VL1218	193	237	0.82	187	235	0.80	219	263	0.83	276	323	0.85	263	312	0.84
Madeira OFR		VL1824	102	128	0.79	198	296	0.67	186	273	0.68	177	274	0.65			
		VL2440	124	136	0.91	151	185	0.82	154	200	0.77	130	158	0.82	120	149	0.81
	MGP	VL0010	103	150	0.69	105	125	0.84	65	93	0.70	107	178	0.60	94	138	0.68
		VL1824	234	246	0.95	186	196	0.95	167	177	0.94	193	214	0.90	200	219	0.91

8.3. Biological Sustainability Indicators MFL

Fleet

39 segments of the fleet in Portugal were identified which consist of vessels grouped in accordance with gear used and size. In the same year, nine populations were identified with some expression in catches and subject to scientific assessment, for which fishing effort estimates exist. Of the 39 fleet segments, 32 work with these populations.

During the year, a total of 392 populations were landed, demonstrating the diversity of species exploited by the Portuguese fleet. This is far more than the nine populations for which fishing effort estimates exist. On average, each of the 32 fleet segments identified exploits 71% of the units subject to assessment. Of the nine units subject to scientific assessment, six are exploited above F_{MSY}. On average, each of the 32 fleet segments identified exploits 68% of the units considered to be over-exploited, at varying levels.

Indicator for populations at risk
It should be noted that income from over exploited units only accounts for an average of 10% of the total income from the same segments, and that none of the six populations at risk represents more than 9% of the catches landed in Portugal.

However, most units at risk are caught by relatively few fleet segments. Hake is exploited mainly by three fleet segments, nets and deep trawling (DFN VL1218, DFN VL1824, and DTS VL2440), which together catch 80% of this species. Approximately 95% of four-spot megrim, 89% of mackerel, 82% of megrim and 91% of blue whiting are landed by a single fleet segment (DTS VL2440); while 83% of sardine is shared by two fleet segments (PS VL1824 and PS VL2440). The fleet segment which is most dependent on populations at risk is therefore DTS VL2440 (deep trawling), which accounts for 23% of earnings. For this same segment, 10.6% of earnings come from the catch of a single population, mackerel. The DFN VL1824 segment obtains 24.1% of incomes from hake, while the PS segments (PS VL0010, PS VL1012, PS VL1218, PS VL1824, PS VL2440) obtain 20% of earnings from sardines, a unit which also represents more than 10% of earnings for the MGO VL0010 segment.

Sustainable harvest indicator
The Sustainable harvest indicator is < 1 for all segments of the Portuguese fleet, which did not exceed 0.825 achieved by the PS VL2440 segment. For this segment, catches of sardine represent over 30% of total earnings.

ARA Fleet

Within the scope of the Marine Strategy Framework Directive for the Azores subdivision, an environmental assessment was undertaken on commercially exploited fish and molluscs, using the fishing pressure level, reproductive capacity and population structure as indicators. The main sources for this assessment were the research programmes and the National Fish Data Collection Programme (PNRD). It confirmed that, in general, and in accordance with the analytical procedures employed, all the species had a final assessment of 'good environmental status'. However, in a number of cases it should be noted that the degree of confidence attributed was medium or low.

Demersal, deep and very deep water species

An analysis of landings of demersal species in the period between 2011 and 2016, shows that despite there being some inter-annual variation, the volume of landings remained relatively stable. The average annual figure was 3 541 tonnes.

Table 13 – Landings of deep and very deep water demersal species in the ARA, in the period from 2011 to 2016.

Year	Landings by Weight (t)
2011	3 268
2012	3 739
2013	3 528
2014	3 797
2015	3 684
2016	3 229
Average	**3 541**

Demersal catches in the ARA include around 70 species. Nine of these species represent around 75% of all landings The most important species in the period under analysis are red seabream (Pagellus bogaraveo) with annual landings of 924 tonnes, conger (Conger conger) with 491 tonnes, rosefish (Helicolenus dactylopterus) with 321 tonnes, silver scabbard fish (Lepidopus caudatus) with 302 tonnes, wreckfish (Polyprion americanus) with 270 tonnes, Alfonsinos (Beryx sp.) with 254 tonnes, forkbeard (Physis physis) with 250 tonnes, parrotfish (Sparisoma cretense) with 147 tonnes and Red porgy (Pagrus pagrus) with 108 tonnes.

Within the scope of the National Data Collection Programme (PNRD), statistical and biological information is compiled on these species. This information is regularly sent to and analysed at ICES working groups which provide annual advice on management. However, given these characteristics and the complexity of the fishing of demersal in the ARA, it has not been possible to assess the exploitation status of these species, more specifically with regard to calculating biological reference points.

In accordance with guidelines for the analysis of balance between fishing capacities and possibilities under Article 22 of Regulation (EU) No 1380/2013 of the European Parliament and of the Council on the Common Fisheries Policy, and given that more than 60% of catch values consist of stocks for which F and Fmsy do not exist, it is considered that this indicator is not available for this set of species.

Small pelagics

An analysis of landings of small pelagic species, in the period between 2011 and 2016, shows that there is high inter-annual variation in the volume of landings and no discernible trend exists. The average annual figure was 1 140 167.

Table 14 – Small pelagic landings in the Azores from 2011 to 2016.

Year	Landings by Weight (t)
2011	1 395
2012	945
2013	1 022
2014	1 307
2015	1 282
2016	887
Average	**1 140**

Three species of small pelagics are caught in the ARA: horse mackerel (Trachurus picturatus) with annual landings of 775 tonnes, common mackerel (Scomber japonicus) with 347 tonnes and sardines (Sardina pilchardus) with 17 tonnes. Within the scope of PNRD, statistical and biological information is compiled on these species. This information is regularly sent to and analysed by ICES working groups which provide annual advice on management. However, given the complexity of the fishing involved, it has not been possible to assess the exploitation status of these species, more specifically with regard to calculating biological reference points.

In accordance with guidelines for the analysis of balance between fishing capacities and possibilities under Article 22 of Regulation (EU) No 1380/2013 of the European Parliament and of the Council on the Common Fisheries Policy, and given that more than 60% of catch values consist of stocks for which F and Fmsy do not exist, it is considered that this indicator is not available for this set of species.

Tunas

These resources are exploited mainly by the pole and line tuna fleet (included in the HOK-VL2440 segment) which traditionally starts the catch in the Madeira region and during the season moves to the Azores. From 2011-2016, tuna landings were on average 6 822 tonnes (Table 15), corresponding to approximately 55% of total landings by the Azores fleet.

Table 15 – Tuna landings by the Azores fleet from 2011 to 2016 (landings in Madeira and the Azores).

Year	Landings by Weight (t)
2011	10 606
2012	7 951
2013	9 035
2014	6 303
2015	4 285
2016	2 748
Average	6 822

Historically, catches of these species show significant fluctuations caused by natural variations in abundance and changes to migratory routes. Therefore, the reduction in catches seen in recent years is part of this cyclical phenomenon, which more recently, at the start of the 2000s, also significantly affected catches of this species in the Azores region (Figure 4).

Figure 4 – Tuna landings in the Azores from 1950 to 2015.
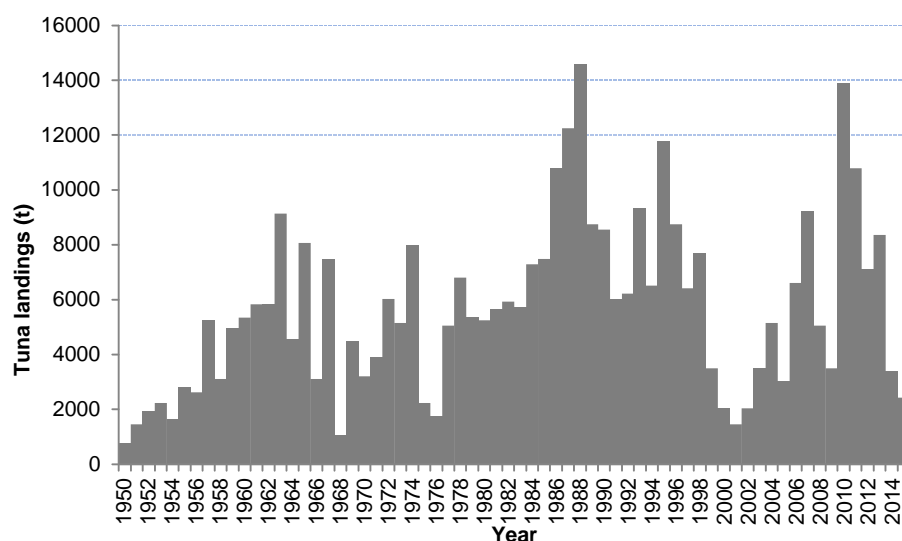
In the period from 2000 to 2015, skipjack and bigeye tuna represented 63% and 33% of total catches in the Azores, respectively. These population units are managed on an Atlantic level by the ICCAT and in accordance with assessments carried out in 2015, bigeye tuna is being overfished while skipjack shows no indication of exploitation above biological safety limits (Table 16).

Table 16 – Summary of the assessment of exploitation status of stocks of bigeye and skipjack carried out by the ICCAT in 2015.

Species	MSY	Landings (2014)	Relative biomass	Mortality per fishery
Bigeye tuna	78 824 t (67 725-85 009t)	72 585t	B_{2014}/B_{MSY}:0.67 (0.48-1.20.	F_{2014}/F_{MSY}:1.28 (0.62-1.85)
Skipjack tuna	Probably greater than the previous figure (143 000 - 170 000t)	206 234t	B_{2013}/B_{MSY}: >1	F_{2013}/F_{MSY}: <1

ARM Fleet

In relation to the Madeira region fleet with activity in area CECAF 34, the following biological indicators were assessed: Sustainable Harvest Indicator (SHI) and Stock at Risk Indicator (SAR).

The guidelines set out in the Commission communication COM(2014) 545 final were used to obtain the indicators. COM(2014) 545 final. When available, Fmsy (or approximations such as Fmax) and Fact values as published by international scientific institutions were used in the SHI calculation. This is the case with tuna and similar species (big-eye, yellowfin, flying and skipjack, bluefin and swordfish) for which reference figures for the most recent assessments for each species provided by the ICCAT were used.

For some of the remaining species (e.g. common mackerel, horse mackerel and limpets), although no assessments conducted by international scientific bodies are available, there is quantitative and qualitative information on the status of stocks which is based on biological and statistical information obtained from a number of sampling programmes under the National Data Collection Programme (PNRD), which allowed the required biological parameters to be obtained, considering each population as functional units which must be managed .

The results obtained for 2011 to 2016 are summarised in the table on biological indicators for Madeira (Table 17).

With regard to hook gear (HOK), the SHI was calculated by using the Fmsy and Fact mean for big eye (Thunnus obesus), albacore (Thunnus alalunga) and skipjack (Katsuwonus pelamis), yellow fin (Thunnus albacares) and swordfish (Xiphias gladius). In the case of bluefin tuna (Thunnus thynnus), SHI was calculated with a mean of F0.1 and Fact based on the most recent assessments of each resource provided by ICCAT.

As it was impossible to obtain these figures for other species which are highly important in terms of landings and economic value (e.g. black scabbard fish, which has no published biological reference points), in some segments where landings of assessed species are less than 40%, the indicator may not be representative. These cases are highlighted in red in the table.

With respect to MGP, which includes mainly purse seine fishing by the Madeira fleet (small pelagics) and molluscs (limpets), in the absence of assessments conducted by international scientific bodies on stocks exploited by these fleet segments, the SHI is obtained using assessments conducted by the Madeira Fisheries Regional Directorate on the stocks of white limpet (Patella aspera), black limpet (Patella candei), common mackerel (Scomber colias) and horse mackerel (Trachurus picturatus). Fmsy proxy values were used (Fmax- obtained through the production model per resource).

Unlike 2015, the ICS SHI is greater than one in most segments. This situation is mostly due to the high weighting, in the majority of HOK segments, of bigeye tuna fishing opportunities, which was considered by the most recent ICCAT assessment as being overfished in the Atlantic , F2014/FMSY =1.28 (mean, 0.62-1.85 for the percentiles 10 and 90%).

The MGP VL1824 segment is dominated by the region's three seiner vessels, landing mainly common mackerel and blue jack mackerel. Considering the units fished locally, the most recent assessment of these two species by the recruitment production model indicates levels above MSY for both cases (F2016/Fmax>1). The SAR indicator shows that this fleet segment is dependent on two biologically vulnerable stocks.

In conclusion, analysing the situation by segment:

HOK VL0010 and VL1218 - Although indicators are negative in both segments, it must be remembered that one of the main species caught in these segments (black scabbard fish) was not considered in the calculation of the indicators for the reason explained above. We consider that the biological indicators in these segments may not be representative, particularly in VL1218 where only 10% of landings correspond to assessed species.

HOK VL2440 - For the second year running, this segment which includes the biggest tuna vessels in the regional fleet has negative biological indicators. This is a result of the dependence in recent years on the catch of big eye and dwindling catches of skipjack. In this case, we consider the indicators as representative as they were calculated on the basis species which represented 99.9% of landings.

Taking into account the biological indicators obtained as well as the negative economic indicators, we suggest that an action plan be considered for this segment.

MGP VL0010 - The biological indicators for this segment are positive. Here, there is a predominance of values corresponding to landings of limpets.

MGP VL1824 - For the second year running, this segment, which includes the three seiners in the regional fleet catching small pelagic species, has negative biological indicators as a result of its dependence on common mackerel and blue jack mackerel. In this case, we consider the indicators as representative as they were calculated on the basis species which represented 99% of landings.

Taking into account the biological indicators obtained as well as the negative economic indicators, we suggest that an action plan be considered for this segment.

Table 17

		Biological Indicators (ARM)																					
		ICS (Landing Value) Data						ICS Status	IUPR						Monitoring of Landings								
		2011	2012	2013	2014	2015	2016		2011	2012	2013	2014	2015	2016	2011	2012	2013	2014	2015	2016			
ARTEDCF	CLASS_CFF																						
HOK	VL0010	0.85	0.90	0.89	0.95	1.27	1.19		0	0	0	0	1	1				(red)					
	VL1218	0.95	0.98	0.95	0.96	1.17	1.11		0	0	0	0	0	1	(red)	(red)	(red)	(red)	(red)	(red)			
	VL1824	0.94	0.97	0.95	0.96	1.17			0	0	0	0	1					(red)	(red)				
	VL2440	0.95	0.96	0.96	0.96	1.14	1.08		0	0	0	0	1	1									
MGP	VL0010	0.37	0.66	0.62	0.87	0.94	0.81		0	0	0	0	1	0									
	VL1824	0.73	0.73	0.81	0.77	2.24	4.04		0	0	0	0	2	2									

8.4. Economic indicators

Portugal has improved the methodology applied to the parameters used in the economic analysis of fleets with the aim of making the economic model significantly more reliable. In addition to the questionnaire data, real data on fuel use is also used along with the respective costs on a high number of fishing fleet vessels. The Annual Fleet Report for 2015 addressed a number of changes to the model used for calculating most of the costs. These costs were given parameters based on variables considered relevant for each individually. However, with respect to depreciation costs, although the methodology was reviewed for 2015, when the report was concluded, it was not possible to use the new model as it was not yet stabilised. For this report, data on 2015 already include the values allocated for the working life of the different components used in the Perpetual Inventory Method (PIM), which are more realistic for the national fishing fleet. Table 18 shows the new values used in the PIM method. It can be seen that, with the exception of the fleet with overall length of less than 12 m, annual depreciations are lower. This also tends to contribute to a reduction in the value of assets and the cost of opportunity, impacting on ROI or ROFTA

Table 18 – Working life considered based on vessel length class

Length Class	Hull		Engine		Electronics		Other	
	Previous	New	Previous	New	Previous	New	Previous	New
VL0012	25	**20**	10	**10**	5	**5**	7	**7**
VL1218	25	**30**	10	**18**	5	**5**	7	**7**
VL18XX	25	**30**	10	**24**	5	**5**	7	**7**

For the economic assessment of the domestic fleet, two indicators were used: long and short-term economic viability. To assess the return on investment (long-term viability) ROFTA was used, while in short-term, the ratio between current revenue and break-even revenue (CR/BER) was calculated, as broken down below:

- ROFTA (Return on fixed tangible assets) = Net profit/asset value

- The ratio between current revenue (CR) and break-even revenue (BER), where BER corresponds to the revenue required to cover fixed costs without loss or profit and CR corresponds to total revenue for the fleet segment.

As set out in Commission guidelines (COM (2014) 545 final of 2 September) and with a view to assessing the return obtained with the same capital if it had been invested in the best alternative available, ROFTA was compared to the reference interest rate. The Commission proposed using the mean long-term interest rate for the last five years as calculated by the ECB for each Member State as a reference rate. However, due to the economic and financial situation in Portugal, this rate is too high when compared to the rates in other Member States. In order to achieve greater fairness in this area of analysis, it was decided to use the indexed interest rate on postal savings certificates as the reference rate.

The indicators were constructed using data from the PNRD on vessels which were active in the years under analysis As economic data for 2016 is not yet available, the economic indicators for the year under analysis were estimated using a projection based on data from 2014 and 2015.

MFL

With regard to the MFL, and as can be seen in Annexes IX, IX-a and IX-b, in 2015 the 36 fleet segments had a positive economic situation. It should be noted that the figures forecast for 2015 set out in the 2014 fleet report already predicted that of the seven segments considered to be in imbalance in the 2011- 2014 period, only two would be in economic imbalance in 2015.

It should be further noted that the abovementioned forecast did not come under consideration with the significant fall in fuel costs in 2015, a highly relevant factor in the segments which are not in balance. More specifically, those which use towed gear and a segment of the surface long line with considerable travel times. Moreover, the method used for calculating assets and the opportunity cost (perpetual inventory method – PIM) was also reviewed applying periods of working life of the different components of vessels which better reflected the reality of the Portuguese fishing fleet. Almost all segments recorded an increase in sales volume.

The combination of the abovementioned factors was identified immediately at the beginning of the year. For this reason, the adjustment aims mentioned in the action plan of the 2015 report were reviewed. Finally, based on the positive projections for 2015 set out in the 2014 report, the action plan itself already addressed the review of adjustment aims.

Therefore, and based on the economic data shown in Annex Xa, no MFL segment is identified as being out of balance in this report.

ARA Fleet

From an analysis of economic indicators (Table 19) it can be seen that, in general, all segments of the Azores fleet have positive economic performance or positive evolution over the period under analysis.

The only segment with less robust economic performance is vessels with overall length between 24 and 40 metres operating with lines and hooks. This segment is dominated by vessels working exclusively in tuna catches with pole-and-line and which recorded a reduction of landings in recent years of the period under analysis. As mentioned earlier, the fluctuations in tuna catches are cyclical phenomena which significantly affect the economic performance of the respective fleets.

Table 19

REGION	Fishing Gear	Vessel Length	2008		2009		2010		2011		2012		2013		2014		2015		2016	
			ROFTA	RATIO CR/BER	ROFTA	RATIO CR/BER	ROFTA	RATIO CR/BER	ROFTA	RATIO CR/BER	ROFTA	RATIO CR/BER	ROFTA	RATIO CR/BER	ROFTA	RATIO CR/BER	ROFTA	RATIO CR/BER	ROFTA	RATIO CR/BER
ARA	DFN	VL0010	0.61	3.35	0.36	2.38	0.22	1.75	0.22	1.88	0.13	1.51	0.19	1.74	0.44	3.14	0.38	3.30	0.31	2.25
	HOK	VL0010	0.24	2.00	0.14	1.58	0.18	1.64	0.14	1.53	0.13	1.52	0.13	1.52	0.21	1.95	0.25	2.70	0.18	1.74
		VL1012	0.17	1.76	0.06	1.28	0.11	1.42	0.04	1.18	0.10	1.42	0.10	1.41	0.22	2.00	0.28	2.83	0.13	1.58
		VL1218	0.24	1.77	0.10	1.34	0.09	1.28	0.11	1.46	0.16	1.64	0.10	1.38	0.13	1.44	0.39	3.17	0.16	1.60
		VL2440	-0.07	0.73	-0.04	0.86	0.09	1.34	0.03	1.11	-0.03	0.90	-0.14	0.51	-0.03	0.89	-0.01	0.96	-0.03	0.89
	PGP	VL0010	0.24	1.82	0.11	1.40	0.01	1.05	0.14	1.55	-0.15	0.45	0.00	0.99	-0.01	0.97	0.03	1.17	0.06	1.22
	PS	VL0010	0.24	1.97	0.09	1.36	0.11	1.39	-0.07	0.73	-0.02	0.90	-0.17	0.33	0.34	4.46	0.14	2.01	0.08	1.36
		VL1012	0.31	2.21	0.10	1.40	0.34	2.26	0.02	1.07	0.14	1.62	-0.02	0.89	0.37	2.66	0.16	1.81	0.17	1.72

ARM Fleet

Indicators for analysing fishing capacity against fishing opportunities – Article 22 of Regulation (EU) No 1380/2013 on the Common Fisheries Policy (CFP), must be used jointly, with a view to presenting findings on the imbalances in each fleet segment separately.

Table 20 – ROFTA

Fishing Gear	Vessel Length	ROFTA								
		2008	2009	2010	2011	2012	2013	2014	2015	2016
HOK	VL0010	0.44	0.74	0.06	0.31	0.08	0.40	0.11	0.19	0.29
	VL1218	0.27	0.26	0.43	0.60	0.40	0.59	0.39	0.97	0.49
	VL1824	-0.11	-0.11	-0.13	-0.10	-0.05	0.15	-0.11		
	VL2440	-0.16	-0.11	-0.02	0.04	0.06	-0.04	0.01	-0.21	-0.05
MGP	VL0010	1.00	1.46	1.15	0.92	1.80	1.88	0.54	0.92	1.21
	VL1824	-0.16	-0.14	-0.01	0.03	-0.17	0.02	0.05	0.03	-0.04

Table 21 – RATIO

Fishing Gear	Vessel Length	RATIO								
		2008	2009	2010	2011	2012	2013	2014	2015	2016
HOK	VL0010	3.14	4.64	1.27	2.54	1.37	2.80	1.46	3.72	2.62
	VL1218	2.20	2.11	2.92	3.42	2.36	3.67	3.32	6.42	3.30
	VL1824	0.55	0.58	0.38	0.55	0.77	1.57	0.57		
	VL2440	0.23	0.42	0.91	1.21	1.32	0.83	1.08	-0.08	0.74
MGP	VL0010	4.93	6.11	4.86	4.89	7.91	6.10	3.76	4.40	5.37
	VL1824	0.39	0.46	0.97	1.12	0.33	1.11	1.38	0.04	0.73

Analysing the last two years, it can be seen that two segments have negative economic indicators. This mat indicate structural economic imbalance (Table 22).

Table 22- Fleet segments in structural economic imbalance

Fishing Gear	Vessel Length	ROFTA					BER				
		2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
HOK	VL2440	0.06	-0.04	0.01	-0.21	-0.03	1.32	0.83	1.08	-0.08	0.74
MGP	VL1824	-0.17	0.02	0.05	0.03	-0.05	0.33	1.11	1.38	0.04	0.73

Tuna fishing vessels over 24 metres in length and vessels landing small pelagic species with encircling gear, corresponding to HOK VL2440 and MGP VL1824 respectively, are the only segments with negative results in recent years.

The HOK VL2440 fleet segment operates exclusively in tuna fishing with line and pole, and it is general knowledge that catches of these species vary every year as they are highly migratory. This explains the warning signs of the ratios presented. The operating costs inherent to this type of activity are high and the cost of capital is also considerable, meaning that this activity is not profitable. Sales in this segment do not reach the minimum required for profitable operation with enough liquidity to meet commitments.

When taken into consideration with other indicators, it will be prudent to go ahead with an Action Plan which provides for the permanent withdrawal of vessels as one of the adjustment instruments.

With respect to the MGP VL1824 segment, consisting of three PS vessels, the last two years have seen a steep fall in the average price of common mackerel and blue jack mackerel. This has led to low or negative profitability with insufficient income to cover operating and capital costs.

As was mentioned in the analysis of the previous segment, when this indicator is considered in conjunction with biological and activity indicators, the need for adjustment can be seen with an Action Plan which includes, among other measures, the permanent withdrawal of vessels.

9. Action Plans

The analysis of the economic and biological indicators point to the need the consider adjusting the capacity of the ARM fleet which includes the HOK VL 2440 segment which operates exclusively in pole and line tuna fishing and the MGP VL 1824 segment made up of three PS vessels. This has led to the decision to draw up an action plan for the implementation of permanent immobilisation measures. (Annex X).