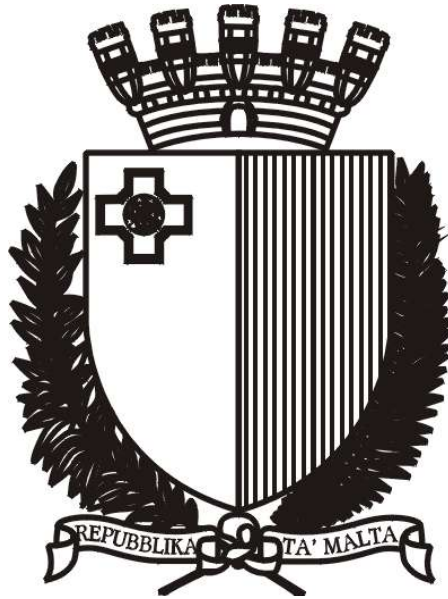


**MINISTRY FOR THE ENVIRONMENT,  
SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE**



**MALTA**

**Annual Report on efforts to achieve a sustainable balance between fishing  
capacity and fishing opportunities for the year 2017**

In accordance with  
Article 22 of Regulation (EU) No 1380/2013 on the Common Fisheries Policy

**Malta**

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## List of Acronyms

AWL	Automated Weighing and Labelling system
BER	Break Even Revenue
DFA	Department of Fisheries and Aquaculture
DFN	Fixed netters
DTS	Demersal trawlers
FAD	Fishery Aggregating Devices
FIS	Fisheries Information System
FMZ	Fisheries Management Zone
FPO	Pots and traps
FT	Full-time fishers
FVR	Fishing Vessel Registry
GADGET	Globally Applicable Area Disaggregated General Ecosystem Toolbox
GFCM	General Fisheries Commission for the Mediterranean
HOK	Gears using hooks
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
LOA	Length overall
MGO	Other active gears
MSE	Management Strategy Evaluation
PGP	Polyvalent passive gears only
PMP	Combined mobile and passive gears
PS	Purse seiners
PT	Part-time fishers
ROFTA	Return on Fixed Tangible Assets
ROI	Return on Investment
SAC	Scientific Advisory Committee on Fisheries
SHI	Sustainable Harvest Indicator
STECF	Scientific, Technical and Economic Committee for Fisheries
TM	Pelagic trawlers
VUI	Vessel Utilisation Indicator
XSA	Extended Survivor Analysis

## Summary of Report

The Maltese fishery is a relatively small industry of a typically Mediterranean artisanal type, and is frequently described as a multi-species and multi-gear fishery. The fleet during 2017 consisted of 935 professional (commercial) vessels with a total gross tonnage and (main engine) power of 6,405.2 GT and 69,908.4kW respectively. The majority of the professional vessels (93%) are less than 12m in length and operate mainly in coastal waters. Larger vessels, those over 12m in length, mainly consist of trawlers, long-liners and netters, which operate mainly in off-shore waters all year round. The lengths of the registered vessels range from 3.0 to 35.0 metres.

The main exploited species include swordfish, dolphinfish, bluefin tuna (*Thunnus thynnus*), demersal and small-pelagic species – particularly mackerel, and a number of additional species, some of which have a high commercial value, for example the red shrimp, despite being caught in smaller quantities. The total amount of fish landed in 2017 was 2,149 tonnes. The commercial part of the Maltese Fishing Vessel Register did not open for additional registrations during 2017. No vessels left the fleet through effort reduction schemes.

It should be noted that in 2016, the only stock for which the Maltese fleet has been allocated fishing opportunities for is bluefin tuna. The indicator results for fleet segments targeting other species should therefore be considered as indicative. The vessel use indicators were based on 2017 data whilst the biological indicators and economic indicators were based on 2016 data.

The Sustainable Harvest Indicator was only applicable to a limited number of fleet segments since the percentage of stocks assessed was very low. The most recent regional stock assessments were used to give an indication of the impact of trawling on the exploited ecosystem; the results suggest that regionally, the stock of hake is in overexploitation with relative high biomass and deep water rose shrimp was found to be in overexploitation with relative intermediate biomass. A management plan to address this issue was devised at GFCM level, including Malta, Sicily and Tunisia, which all exploit the same stock (Recommendation GFCM/40/2016/4). The stock of red mullet in the Strait of Sicily (GSA15 and GSA16) was found to be in overexploitation with relative low biomass. Nevertheless, it should be noted that Malta's percentage catch for these stocks is less than 0.04% (and thus negligible) and that Malta already reduced its trawling fleet by approximately 30% since 2011. The Maltese fleet does not target any stocks at risk as defined by the Stocks at Risk Indicator.

The Inactive Fleet Indicator shows that there is the possibility that the professional Maltese fleet might be operating in a technically inefficient manner. However, this can be explained since Maltese fishers regularly own more than one vessel, which are not used simultaneously; most of the times, the Maltese fisher and his/her crew are all on one vessel whilst the other vessel is in port, unused. On the other hand, the Vessel Utilisation Indicator shows that overall, the professional Maltese fleet is in balance.

Two economic indicators were calculated. The first indicator (Return on Investment [ROI]) was selected over the Return on Fixed Tangible Assets (ROFTA) since data on intangible assets and tangible assets are both available. For reference year 2016, the fleet segments, gears using hooks (HOK) VL1218; other active gears (MGO) VL0612, VL1218 and VL1824; purse seiners (PS) VL1218, VL1824 had a positive ROI greater than the low risk long term interest rate. On the other hand, the fleet segment purse seiners VL2440 had a positive ROI smaller than the low risk interest rate which yields negative value for the indicator. It is important to note that this gear had enough income to cover all the variable and non variable costs including the full capital costs (depreciation) and hence generated a positive net profit. However the latter shows that in the long-term, it would be more beneficial for this segment to invest elsewhere. It is also important to note that the segments fixed netters (DFN) VL0612, demersal trawlers (DTS) VL1824 and pots and traps (FPO) VL0006 had enough income to cover all the operating costs since they generated a gross

profit but did not generate enough income to cover the non operating costs and hence they reported a net loss. The other fleet segments had a negative gross profit and net profit during the reference year in subject.

The Current Revenue against Break-Even Revenue Economic Indicator was calculated for the year 2016. For the year 2016, the fleet segments gears using hooks (HOK) VL1218; other active gears (MGO) VL1218 and VL1824, purse seiners (PS) VL1218 and VL1824 had a ratio greater than 1. For reference year 2016, the fleet segments fixed netters (DFN) VL0612; demersal trawlers (DTS) VL1824; pots and traps (FPO) VL0006; other active gears (MGO) VL0612; combined mobile and passive gears (PMP) VL1824; and purse seiners (PS) VL2440 had a ratio less than 1. This means that these fleet segments generated insufficient income to cover variable, fixed and capital costs. Hence these fleet segments are unprofitable, with potential over-capitalisation. The other segments had a negative CR/BER result which means that variable costs alone exceed current revenue and hence they are unprofitable.

Although, the year 2016 resulted as being economically insufficient since the ratio for most of the fleet segments was less than one, it is important to mention that a number of unprofitable segments have made improvements in this indicator from the previous year.

When looking into the economic development trends of the fleet segments, only one segment out of twenty-one has deteriorated during the years analysed. This deterioration was recorded for PMP VL0006. Out of the remaining segments, five segments were balanced with an improving economic performance trend, while the other 15 fleet segments showed an improving trend in their economic performance.

## Statement of Malta’s opinion on balance of fleet capacity and fishing opportunity

**Table 1 Traffic light system; grey colour: non-applicable value, green colour: satisfactory value, yellow colour: somewhat unsatisfactory value, red colour: very unsatisfactory value as per STECF-11-17.**

**\* Indicator could not be calculated, although MS contribution to F is considerably below  $F_{0.1}$  for the shared stocks that have been assessed.**

Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Inactive Fleet Indicator										
Vessel Utilisation Indicator										
Sustainable Harvest Indicator					*	*	*			
Stocks at Risk Indicator										
ROI vs Next Best Alternative										
CR vs BeR Indicator										

## A.1. Description of the fleet

The Maltese fishery is a relatively small industry of a typically Mediterranean artisanal type. It is frequently described as a multi-species and multi-gear fishery, with the majority of the fishers switching from one gear to another several times throughout the year. The fleet throughout 2017 consisted of 935 professional vessels of which 378 (40%) were professional full-time and 557 (60%) were professional part-time vessels. Of these professional vessels, a total of 18 vessels were registered as “non-operational”, meaning vessels that are either being repaired, or have been rendered non-operational due to pending court cases. The fleet, as of 31 December 2017, consisted of 922 professional (commercial) vessels with a total gross tonnage and (main engine) power of 6,364.38 GT and 69,233.33 kW respectively. The recreational category, made up of 2,030 vessels, operated recreational fishing gear only and fish caught by vessels in this category are not commercialised. For the purpose of this report, analysis was based on data submitted by Malta under the 2018 DCF Economic data call.

In 2017, a total of 13 operational trawlers were registered on a full-time basis, with a total power and tonnage of 4,832.59 kW and 1,858.25 GT respectively. These ranged between 19.3 to 35.0 m in overall length.

The absolute majority 93% of the professional vessels are less than 12 metres in length overall and more than half of them are of a traditional design, mainly ‘luzzu’ and ‘kajjik’, and these operate mainly in coastal waters. Larger vessels, those over 12 metres in length, amount to 64 vessels and mainly consist of trawlers, long-liners and netters which operate mainly in off-shore waters all year round. The lengths of the registered vessels range between 3.0 and 35.0 metres. Table 2, Table 3 and Table 4 show the fleet data by fleet segment throughout 2017. Table 5 shows the time series of length overall (LOA) of Maltese fishing vessels for 2007-2017, whilst Table 6 shows a time series of fleet data by fleet segment for the years 2007-2017.

**Table 2 Number of operational full-time (FT) and part-time (PT) vessels in the professional Maltese fleet divided by fleet segment throughout 2017.**

	DFN	DTS	HOK	MGO	PGP	PMP	PS	INACTIVE
<b>FT</b>	1	11	60	17	133	102	6	37
<b>PT</b>	5	0	8	0	293	49	0	195
<b>Total</b>	6	11	68	17	426	151	6	232

**Table 3 Total GT and kW for full-time (FT) and part-time (PT) operational vessels in each fleet segment throughout 2017.**

GT								
	DFN	DTS	HOK	MGO	PGP	PMP	PS	INACTIVE
<b>FT</b>	8.41	1529.25	1574.11	248.83	237.82	378.96	263.88	1012.12
<b>PT</b>	4.11	0	23.22	0	423.25	135.05	0	382.4
kW								
	DFN	DTS	HOK	MGO	PGP	PMP	PS	INACTIVE
<b>FT</b>	257	4016	10918	3085	7140	9344	1584	5224
<b>PT</b>	134	0	677	0	11572	3183	0	11188
<b>Total</b>	391	4016	11595	3085	18712	12527	1584	16412

**Table 4 Number of operational full-time and part-time vessels in the Maltese fleet divided by fleet segment throughout 2017.**

Full-time								
	DFN	DTS	HOK	MGO	PGP	PMP	PS	INACTIVE
<b>VL0006</b>	0	0	1	0	85	11	0	14
<b>VL0612</b>	1	0	31	11	48	91	0	13
<b>VL1218</b>	0	0	11	5	0	0	3	1
<b>VL1824</b>	0	8	17	1	0	0	2	4
<b>VL2440</b>	0	3	0	0	0	0	1	5
<b>Total</b>	1	11	60	17	133	102	6	37
Part-time								
<b>VL0006</b>	5	0	2	0	218	10	0	117
<b>VL0612</b>	0	0	6	0	75	39	0	78
<b>Total</b>	5	0	8	0	293	49	0	195

**Table 5 Time series of LOA of operational vessels in the Maltese fishing fleet for 2007-2017.**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>VL0006</b>	723	549	546	546	538	516	521	510	503	515	463
<b>VL0612</b>	572	484	469	468	460	444	444	426	425	425	393
<b>VL1218</b>	60	53	50	48	38	33	26	23	21	23	20
<b>VL1824</b>	27	30	35	35	35	36	38	31	32	32	32
<b>VL2440</b>	10	9	11	12	13	12	11	9	8	10	9
<b>VL40XX</b>	2	1	1	1	1	0	0	0	0	0	0
<b>Total</b>	1394	1126	1112	1110	1085	1041	1040	999	989	1005	917

**Table 6 Time series of number of vessels, GT and kW of the full-time and part-time operational fishing fleets from 2006-2017.**

Year	Full-time			Part-time		
	No. of vessels	GT	kW	No. of vessels	GT	kW
<b>2007</b>	417	12,933.04	51,474.75	977	2,135.51	46,207.47
<b>2008</b>	408	9,251.83	49,145.81	718	1,525.92	35,728.25
<b>2009</b>	405	10,675.63	50,006.58	707	1,481.50	35,450.88
<b>2010</b>	404	10,811.68	50,049.19	706	1,484.12	35,205.25
<b>2011</b>	391	10,608.51	48,159.16	694	1,464.13	34,835.56
<b>2012</b>	404	6,649.93	45,470.65	637	1,329.11	31,064.99
<b>2013</b>	411	6,542.02	45,595.31	629	1,243.90	30,468.96
<b>2014</b>	399	5,924.94	42,985.87	617	1,144.98	29,771.68
<b>2015</b>	390	5,246.01	41,115.36	599	1,077.83	28,972.59
<b>2016</b>	397	5,764.50	43,172.11	608	1,094.61	29,277.86
<b>2017</b>	367	5253.38	41568.72	550	968.03	26755.12

## A.2. Development in Fleets

The professional part of the Maltese Fishing Vessel Register (FVR) did not open for new registrations during 2017, though registrations were accepted for recreational vessels. Table 7 and Table 8 show the replaced and new vessels respectively, with details on each vessel. Requests for replacements are submitted by the vessel owner for departmental approval. The plan may only be altered following an approval by the Department of Fisheries and Aquaculture (DFA). Replaced vessels take the registration number of the vessels they replaced, but the first integer of the registration number is changed to 7. It should also be noted that the retirement date for vessel MFB0219 is listed as 2016 after it was changed to the MFC category, its capacity taken by MFA7219 in 2017. MFA8290 was deleted in 2015, its capacity taken by MFA7290 in 2017 whilst MFB8024 was relegated to MFC category in 2014 and its capacity taken by MFB7024.

**Table 7 List of vessels replaced in 2017.**

FVR Number	Vessel Name	Vessel Type	Retirement Date	Length	GT	kW	Construction Year
MFB0219	Sant Anna	Kajjik	21/06/2016	4.80	1.63	63.41	1994
MFA8290	Samurai	Multipurpose Vessel	03/06/2015	10.85	10.03	85.79	2002
MFB1290	Storm Petrel	Multipurpose Vessel	22/03/2017	8.85	6.09	123.09	1997
MFB0622	Ciccia III	Luzzu	08/02/2017	6.10	3.40	22.38	1968
MFB6001	Oneiros	Multipurpose vessel	08/02/2017	5.66	0.62	63.41	2008
MFB8024	Il-Bahri	Luzzu	27/11/2014	2.81	7.80	65.00	1934
MFB0046	N/A	Kajjik	03/10/2017	4.72	0.61	5.97	1935
MFB0113	St. Anna I	Multipurpose Vessel	01/06/2017	6.95	2.73	134.10	1985
MFB0525	Sant Andrija	Kajjik	29/05/2017	3.96	0.53	11.94	1970
MFB8644	Diplodus	Multipurpose Vessel	20/12/2017	5.00	0.60	11.19	1995

**Table 8 Details of new vessels which replaced vessels listed in Table 7.**

FVR Number	Vessel Name	Vessel Type	Registration Date	Length	GT	kW	Construction Year
MFA7219	M' Stella	Kajjik	08/11/2017	4.81	0.98	29.84	2016
MFA7290	Nostro Padre	Multipurpose Vessel	07/04/2017	11.84	12.43	85.79	2017
MFA7291	Stepmar I	Multipurpose Vessel	20/12/2017	10.70	6.09	120.00	2017
MFA7622 <sup>1</sup>	Oneiros II	Multipurpose Vessel	26/05/2017	7.25	3.32	63.00	2016
MFB7024	Twinkle II	Multipurpose Vessel	27/06/2017	7.30	1.43	64.90	2011
MFB7046	N/A	Kajjik	26/10/2017	4.10	0.58	5.97	1982
MFB7113	Lucia Lara	Multipurpose Vessel	01/06/2017	6.11	2.53	134.10	2017



FVR Number	Vessel Name	Vessel Type	Registration Date	Length	GT	kW	Construction Year
MFB7525	Ramla	Multipurpose Vessel	11/07/2017	4.15	0.51	10.00	1995
MFB7644	Jaymar	Multipurpose Vessel	20/12/2017	5.01	0.76	26.11	2017

<sup>1</sup> Replacement of MFB0622 and MFB6001

### ***A.3. Fisheries Covered by Multiannual Management or Recovery Plans***

Currently there are three management plans in place within the 25nM Maltese Fisheries Management Zone (FMZ). These were developed in line with Article 19 of Council Regulation 1967/2006 and include: lampara purse seine fishery, bottom otter trawler fishery and lampuki FAD fisheries. The two main objectives of management plans are to ensure the sustainability of stocks through better monitoring and to ensure financial stability for fishers.

Lampara fishery targets mainly small pelagic species, including chub mackerel (*Scomber japonicus*) and round sardinella (*Sardinella aurita*). The stocks targeted by the Maltese lampara fishery are stocks shared with Sicily. The objectives of the lampara fishery management plan are to ensure that stocks are fished at sustainable levels, to ensure financial stability for fishers and to safeguard artisanal fishing activity. Following this management plan, the lampara vessel activities are monitored by a tracking system and catch logbooks, whilst the fishing capacity in terms of GT and dimensions of the gear is frozen. In addition, the lampara management plan indicates a 20% reduction (in line with the precautionary approach) of the assessed lampara capacity in terms of number of vessels by the end of 2015.

The bottom otter trawl fishery targets mainly shared stocks including red shrimps (*Aristaeomorpha foliacea*), red mullet (*Mullus* spp.) and deep water rose shrimp (*Parapenaeus longirostris*). The status of the latter stock together with that of European hake (*Merluccius merluccius*) is monitored annually at a regional level. The statuses of both stocks are in overfishing. This management plan serves to aid in the recovery of the stocks whilst ensuring financial stability of fishers. The plan indicates that a 20% capacity reduction was to be concluded by end of 2016, together with a temporal reduction of 10% which had to be implemented as from 2014 for the next three years.

The lampuki fish aggregating device (FAD) fishery targets juvenile species of *Coryphaena hippurus*. Lampuki is a highly migratory species and stocks are shared between diverse Mediterranean countries. The management plan for this fishery affects Maltese fishing fleet licensed to fish for the lampuki using FADs inside and outside the 25nM FMZ. As per Article 27(2) of Council Regulation (EC) No 1967/2006, the number of fishing vessels authorised to fish in the FAD fishery are frozen (130 vessels). Following this management plan, the activities of these vessels are monitored by means of tracking system and catch logbook. Moreover, the management plan stated that the DFA will continue to enhance data collection and research on the stock.

### ***A.4. Statement of Effort Reduction Schemes***

There were no exits from the fleet by effort reduction schemes during 2017.

## ***A.5. Impact on Fishing Capacity of Effort Reduction Schemes***

Not applicable since there were no exists from the fleet by effort reduction schemes during 2017.

## ***A.6. Statement of Compliance with Entry/Exit Scheme and with Level of Reference***

Malta's ceiling for fishing capacity is 14,545 GT and 93,121 kW. The total capacity of the fleet expressed in terms of either tonnage or power cannot, and for 2017 did not exceed the reference levels. The levels for 2017 were 6,364.38 GT and 69,233.33 kW respectively. Reference levels are adjusted, in fact reduced, to take into account the effect of public aid.

Malta bases its entry/exit mechanism on Commission Regulation (EC) 26/2004 on the Community fishing fleet register. In fact, it strictly ensures that the fishing capacity is kept within the limits as set by the European Union. Malta has complied with Commission Regulation (EC) 26/2004 and has successfully uploaded fleet register data into the FIDES – FRONT system every quarter in line with the same Regulation. As illustrated in the Fleet Register on the NeT website, the GT and power of the Maltese Fishing Fleet in 2016 have been kept below the respective ceilings. Correction of data in tonnage and power is an ongoing exercise which has intensified as from the last quarter of 2012. The correction process is being given even more importance as from the beginning of year 2017. Most importantly, the Maltese authorities are screening each registered vessel to ensure that the reported capacity data is in fact authentic. Following this, random control checks shall continue to ensure the correctness and integrity of the reported data.

## ***A.7. Summary of Weaknesses and Strengths of Fleet Management System***

### *Strengths:*

- Fishing vessel licences are issued on an annual basis from the Fishing Vessel Register Office which maintains an electronic database including also electronic data on all registered vessels. Therefore licences are updated on an annual basis;
- Snapshots of the fleet register submitted to the European Commission every quarter are generated from the said database in an automatic manner. In addition, prior to issuing an operative licence, registration in the national Maritime Register (applicable to vessels of 6m and over) is ensured;
- Fishing vessel owners are obliged to request the approval of the DFA prior to making any structural changes to the vessel in order to control the GT and power levels within the Maltese fishing fleet register;
- Monitoring of the landings of individual vessels is conducted in order to ensure that the catch value thresholds specified for each category and length class as detailed in the Fishing Vessels Regulations (Subsidiary Legislation 425.07) are followed. These regulations aim to maximise utilisation of fishing capacity. As the greater part of the fishing fleet are below the length required to have a logbook (i.e. below 10m LOA), the DFA, as part of a pilot project, has installed an Automated Weighing and Labelling (AWL) system in the major of homeports. Apart from meeting the statutory traceability requirements that all catches placed on the market are to be labelled, the system automatically generates the necessary landing and takeover declarations. Consequently, through this system, the DFA is now receiving the data of catches that are landed, thus providing a clearer picture for the eventual evaluation of the sustainability of the fleet.

#### *Weaknesses:*

- Entries into the professional part of the fleet are restricted as openings of the Maltese Register are uncommon;
- Data on the activities of the Maltese fleet has only been recorded since 2005, while detailed records are available in electronic format as from 2013 onwards;
- The existing FIS database does not perform automatic cross-validation of data. Presently this is still being tackled manually but it is planned to be developed in the forthcoming short term.
- Most of the small scale vessels (<12m LOA) are not being monitored. These may result in being inactive since there is no data on their activity.

### ***A.8. Plan for Improvements in Fleet Management System***

The FIS has been implemented according to the specifications originally drawn up, with all the modules being fully operational.

As automated data entry validations were included but in a somewhat limited way; presently enhancements are being implemented on the e-logbook to render the workflow more in line with the fishing practices and to have a better quality of the data.

### ***A.9. Information on General Level of Compliance with Fleet Policy Instruments***

The DFA ensures that the fleet policy is complied with. In view of this, the vessel marking requirements and vessel engine specifications falling under the remit of Council Regulation (EC) 1224/2009 are complied with, as well as the standards for the Vessel Registry established by:

- Commission Regulation (EC) No 1799/2006 of 6 December 2006 amending Regulation (EC) No 26/2004 on the Community fishing fleet register
- Commission Regulation (EC) No 26/2004 of 30 December 2003 on the Community fishing fleet register
- Commission Regulation (EC) No 839/2002 of 21 May 2002 amending Regulation (EC) No 2090/98 concerning the fishing vessel register of the Community
- Commission Regulation (EC) No 2090/98 of 30 September 1998 concerning the fishing vessel register of the Community
- Commission Regulation (EC) No 2091/98 of 30 September 1998 concerning the segmentation of the Community fishing fleet and fishing effort in relation to the multiannual guidance programmes.

The fleet register provides information on all vessels along with the description of changes that have occurred in their lifetimes since the creation of the Fleet Register. All this information is kept even after the vessel stops fishing.

In view of this, the data contained in the Fleet Register consists of:

- Administrative identifications: such as name, port, external marking and International Radio Call Signs (IRCS).
- Technical characteristics: such as length, tonnage, power and fishing gear.
- Historical events: entry into and exit from the fleet, modifications of characteristics.
- Information about the owner: agent and owner's name and address.

### ***A.10. Information on changes of the administrative procedures relevant to fleet management***

In the last five years the Maltese authorities have embarked on a very important plan involving the development of an Electronic and Reporting System. The main aim has been to improve on the existing components that were operating in isolation, by creating a single integrated structure that caters for all the fisheries control operations. Essentially, the system as being projected signifies greatly to fleet management as it has been custom built around the rules of the Common Fisheries Policy. In fact, it will include data validation systems, including systems of cross-checks of vessel monitoring systems, catch, effort and market data and data related to the Community fishing fleet register as well as the accurate issuing of licences and fishing authorisations. Other than this it has also permitted the expansion on certain fleet management items which could not be built in the previous limited system. These include a new format of the fishing licence which now includes more details on the vessel and the fishing gears that can be used. Of comparable importance is the generation and issuing of special authorisations which was not possible under the previous system. Furthermore, the present system can be easily expanded or modified by the developer on request of the authority, in order to take into account new needs and requirements. In fact, now that the system has been set up, users are identifying improvements and additions, so that the system incorporates the entire business process.

## A.11. Vessel use indicator(s)

The vessel use indicators were calculated based on the guidelines supplied by the European Commission (COM (2014) 545 Final).

### A.11.1. Inactive Fleet Indicator

The inactive fleet indicator is a measurement of the proportion of vessels that did not show any activity in 2017. Table 9 shows the proportion of inactive vessels of the total fleet with respect to number of vessels, GT and kW, for the Maltese fleet in 2017.

**Table 9 Inactive fleet indicator by number of vessels, GT and kW in 2017.**

Length Class	% of inactive vessels	% of inactive GT	% inactive kW
VL0006	14.55	2.25	5.77
VL0612	10.70	5.71	13.54
VL1218	0.32	0.71	0.59
VL1824	0.53	6.09	2.49
VL2440	0.53	9.87	3.31
	<b>26.63</b>	<b>24.61</b>	<b>25.69</b>

In 2017, five vessel length segments had inactive vessels (VL0006, VL0612, VL1218, VL1824, and VL2440). The total inactive Maltese vessels account for 27% of the total number of vessels, 25% of the total GT and 26% of the total kW.

The fleet segments with the highest levels of inactivity are the VL0006 group at around 15% in vessel numbers (6% kW) and the VL0612 group at 11% in vessel numbers (14% in kW). Maltese fishers frequently own more than a single vessel, and in several cases one boat may be used during a given year whilst the other is kept inactive.

Table 10, Table 11 and Table 12 show the inactive fleet indicator computed by STECF-17-18, based on the data submitted by Malta under the 2017 DCF Economic data call from 2009-2016.

**Table 10 Analysis of the inactive fleet indicator (% no. of vessels) as per STECF-17-18.**

Length Class	% of inactive vessels									Trend (5%)	Status 2015 according to guidelines
	2009	2010	2011	2012	2013	2014	2015	2016			
VL0612	11.25	9.08	15.36	10	9.13	13.21	9.91	11.54	decreasing	in balance	
VL1218	1.44	1.53	1.01	1.04	0.38	0.96	0.96	0.49	decreasing	in balance	
VL0006	16.74	12.86	24.66	14.43	15.19	16.65	12.7	14.99	decreasing	in balance	
VL2440	0.36	0.36	0.28	0.47	0.29	0.57	0.58	0.49	no trend	in balance	
VL1824	0.72	0.36	0.28	0.28	0.58	0.77	0.67	0.39	increasing	in balance	
VL40XX		0.09	0.09						-		
	30.51	24.28	41.68	26.22	25.57	32.16	24.82	27.9	decreasing	out of balance	

**Table 11 Analysis of the inactive fleet indicator (% GT) as per STECF-17-18.**

Length Class	% of inactive GT									Status 2015 according to guidelines
	2009	2010	2011	2012	2013	2014	2015	2016	Trend (5%)	
VL0612	5.38	2.9	4.61	5.21	4.84	6.65	5.29	5.71	increasing	in balance
VL1218	4.07	2.63	1.82	3.25	0.97	2.68	2.54	1.31	decreasing	in balance
VL0006	2.25	1.17	2.21	1.98	1.86	2.3	1.84	2.18	no trend	in balance
VL2440	10.24	6.17	3.99	11.16	5.89	12.03	13.49	12.45	increasing	in balance
VL1824	9.22	2.82	2.26	3.2	6.14	9.83	8.56	5.63	increasing	in balance
VL40XX		31.39	31.9						-	
	31.16	47.08	46.79	24.8	19.7	33.49	31.72	27.28	decreasing	out of balance

**Table 12 Analysis of the inactive fleet indicator (% kW) as per STECF-17-18.**

Length Class	% of inactive kW									Status 2015 according to guidelines
	2009	2010	2011	2012	2013	2014	2015	2016	Trend (5%)	
VL0612	13.23	9.17	16.07	11.38	10.13	15.21	10.92	13.19	decreasing	in balance
VL1218	2.82	3.07	2.01	2.05	1.18	2.25	2.27	1.18	decreasing	in balance
VL0006	5.95	3.89	9.08	4.54	5.36	5.96	4.19	4.96	decreasing	in balance
VL2440	1.98	2.88	1.6	2.56	1.45	3.11	3.9	3.73	increasing	in balance
VL1824	4.58	1.76	1.18	1.53	2.88	3.4	2.9	1.92	increasing	in balance
VL40XX		3.8	3.89						-	
	28.56	24.57	33.83	22.06	21	29.93	24.18	24.98	decreasing	out of balance

STECF-17-18 considers the status 2015 as specified in the EC Guidelines (COM 2014, 545 Final) to be out of balance.

## A.11.2. Vessel Utilisation Indicator

Table 13 shows the technical indicator per fleet segment for 2014-2017; the unit kWdays at sea was used for vessels using active/towed gears, whilst the unit GTdays at sea was used for vessels using passive gears.

**Table 13 Summary of the observed technical indicator for the Maltese fishing fleet for 2014-2017.**

GearType	Fishing Technique	Length Class	2014	2015	2016	2017
<b>Active Gears (kWdays)</b>	DTS	VL1824	0.4	0.5	0.6	1.0
	DTS	VL2440	0.7	0.7	0.6	1.0
	MGO	VL0612	0.5	0.4	0.3	1.0
	MGO	VL1218	0.7	0.8	0.7	1.0
	MGO	VL1824	1	0.6	1	1.0
	PS	VL0612		1		
	PS	VL1218	1	0.9	0.4	1.0
	PS	VL1824	1	1	1	1.0
	PS	VL2440	0.7	0.6	0.6	1.0
	TM	VL2440	1			
<b>Passive Gears (GTdays)</b>	DFN	VL0006	0.4	0.65	0.6	1.0
	DFN	VL0612	0.75	1	1	1.0
	FPO	VL0006	1	1	1	
	FPO	VL0612	1			
	HOK	VL0006	0.5	0.5	0.4	0.2
	HOK	VL0612	0.3	0.35	0.35	0.5
	HOK	VL1218	0.8	0.6	0.6	1.0
	HOK	VL1824	0.4	0.6	0.5	1.0
	PGP	VL0006	0.2	0.1	0.05	0.2
	PGP	VL0612	0.2	0.1	0.1	0.2
	PMP	VL0006	0.3	0.3	0.2	0.2
	PMP	VL0612	0.3	0.15	0.1	0.1
	PMP	VL1824			1	

In 2017, the results show that there is a possibility that the professional Maltese fleet is overall in balance. Nonetheless, there are 6 segments out of 18 which may be operating in a technically inefficient manner. This can be explained however that for most segments, the value of the observed theoretical effort was relatively high (compared to the actual effort of most vessels within the segment) due to the high numbers of fishing days carried out by one or two vessels within that segment. Moreover, vessels within the same segments show a large degree of variety in construction material and age – vessels on the smaller end of a segment are less capable of dealing with inclement weather than vessels on the larger end of the same segment. Furthermore, Maltese fishers regularly own more than a single vessel, which are not used simultaneously. Most of the times, the Maltese fisher and his crew are all on one vessel whilst the other vessel is in port, unused.

Table 14 shows the vessel utilisation ratio calculated by STECF-17-18. The results indicate that the status 2015 according to the guidelines (COM (2014) 545 Final) are in balance.

**Table 14 Summary of the Vessel Utilisation Ratio as per STECF-17-18.**

Fishing Technique	Length Class	Vessel Utilisation Ratio				Trend (5%)	Status 2015 according to guidelines
		2013	2014	2015	2016		
DFN	VL0006	1.00	1.00	1.00		flat/null	in balance
DFN	VL0612	1.00	1.00	1.00		flat/null	in balance
FPO	VL0006	1.00	1.00	1.00		flat/null	in balance
FPO	VL0612	1.00	1.00			-	
HOK	VL0006	1.00	1.00	1.00		flat/null	in balance
HOK	VL0612	1.00	1.00	1.00		flat/null	in balance
HOK	VL1218	1.05	0.97	1.00		no trend	in balance
HOK	VL1824	0.93	0.90	1.00		no trend	in balance
MGO	VL0006					-	
MGO	VL0612	1.00	1.00	1.00		flat/null	in balance
DFN	VL1218					-	
DTS	VL1824	0.80	0.98	1.00		increasing	in balance
DTS	VL2440	1.00	0.86	1.33		increasing	in balance
HOK	VL2440					-	
MGO	VL1218		1.17	1.00		decreasing	in balance
MGO	VL1824		0.18	1.00		increasing	in balance
PGP	VL0006	1.00	1.00	1.00		flat/null	in balance
PMP	VL0006	1.00	1.00	1.00		flat/null	in balance
PGP	VL0612	1.00	1.00	1.01		no trend	in balance
PMP	VL1218					-	
PMP	VL1824	0.67				-	
PS	VL0612			1.00		-	in balance
PGP	VL1218					-	
PGP	VL1824					-	
PS	VL1218		1.67	1.00		decreasing	in balance
PS	VL1824		1.34	1.00		decreasing	in balance
PMP	VL0612	1.00	1.00	1.02		no trend	in balance
PS	VL2440	1.00	1.22	1.00		flat/null	in balance
PMP	VL2440					-	
TM	VL2440	1.00				-	



## A.12. Biological indicators

### A.12.3. Sustainable Harvest Indicator

Malta referred to stock assessments carried out by ICCAT, STECF and GFCM based on data from 2012-2016 for the calculation of percentage of catches for which stock assessments are available. Out of the 21 active fleet segments in 2016, the SHI was available for four fleet segments. According to the criteria in the 2014 balance indicator guidelines, the SHI indicator values for 17 fleet segments cannot be used meaningfully to assess the balance or imbalance because the indicator values are based on stocks for which available values of  $F$  and  $F_{MSY}$  or  $F_{0.1}$  comprise less than 40% of the value of catch (vide Table 15 below).

**Table 15 Percentage (%) of the fleet segment catch for which stock assessments were unavailable.**

Fishing Technique	Length Class	Percentage (%) of the catch for which stock assessments were unavailable				
		2012	2013	2014	2015	2016
DFN	VL0006	99.2			~100	100
	VL0612	95.4	84.5		99.8	98.7
DTS	VL1824	40	80.7	76.1	86.1	82.8
	VL2440	48.4	89.6	86	68.7	76.5
FPO	VL0006					99.6
HOK	VL0006			93.4	~100	100
	VL0612	98.6	47.7	99.9	99.9	26
	VL1218	99.9	44.3	99.4	99.7	32.2
	VL1824	99.8	30.3	99.5	99.5	41.3
MGO	VL0612	99.9	78.9	99.9	99.9	83
	VL1218	99.9	97.2	99.9	~100	71.8
	VL1824					100
PGP	VL0006	93.1	96.6	99	97.6	96.8
	VL0612	94.1	82.5	99.6	99.7	82.6
PMP	VL0006	97.8	99.4	-	~100	99.4
	VL0612	97.2	73.6	99.5	99.3	79.1
	VL1218		58.1			32.4
	VL1824		84.1			73.6
PS	VL1218					99.9
	VL1824					100
	VL2440		85.4			100
TM	VL2440		99.8			

STECF-17-18 notes that the four fleet segments for which the 2016 SHI indicator may be considered meaningful to assess balance or imbalance indicate that three fleet segments appear to be out of balance with their fishing opportunities (HOK VL0612, VL1218, and VL1824); whilst one fleet segment appears to be in balance with their opportunities (PMP VL1218), as shown in Table 16.

**Table 16 The results of the SHI biological indicator as per STECF-17-18.**

Fishing Technique	Length Class	SHI									Status 2015 according to guidelines
		2009	2010	2011	2012	2013	2014	2015	2016	Trend (5%)	
HOK	VL0612	1.1	1.5	1.7	1.5	1.6	1.5	1.6	1.5	no trend	out of balance
HOK	VL1218	1.1	1.3	1.3	1.2	1.5	1.3	1.6	1.4	increasing	out of balance
HOK	VL1824	1.4	1.4	1.6	1.5	1.8	1.7	1.7	1.8	no trend	out of balance
PS	VL2440	0.4				0.4	0.4	0.4		no trend	in balance

In 2017 the joint stock assessments for European hake (*Merluccius merluccius*), deep-water rose shrimp (*Parapenaeus longirostris*) in GSAs 12-16, and red mullet (*Mullus barbatus*) in GSAs 15-16 were updated by Maltese, Tunisian and Sicilian scientists, combining data collected by these countries (Table 17). The stock assessments were conducted under the auspices of the MedSudMed project, and finalised at the 2017 GFCM Working Group on Stock Assessment of Demersal Species (WGSAD). The biological reference points used were  $F_{current}/F_{0.1}$ .

**Table 17 The overfishing index ( $F_{current}/F_{0.1}$ ) of hake and deep water rose shrimp in the Strait of Sicily, including data from Malta, Sicily and Tunisia for the period 2011-2016.**

Species	Area	2011	2012	2013	2014	2015	2016
Hake	12-16	Overfishing (3.6)	Overfishing (5.8)	Overfishing (4.5)	Overfishing (4.9)	Overfishing (1.66)	Overfishing (3.7)
Red mullet	15-16	N/A	N/A	N/A	N/A	Overfishing (1.22)	Overfishing (1.22)
Deep-water rose shrimp	12-16	Overfishing (1.3)	Overfishing (1.8)	Overfishing (1.3)	Overfishing (1.3)	Overfishing (1.44)	Overfishing (1.63)

The assessments showed that hake was in high overfishing with relative low biomass. Deep-water rose shrimp was considered to be in intermediate overfishing status with relative low biomass. Red mullet was considered to be in low overexploitation with relative intermediate biomass.

In 2017, the GFCM Workshop on the Assessment of Management Measures (WKMSE), using the same data used for the stock assessments, carried out Management Strategy Evaluation (MSE) taking into consideration hake and deep water rose shrimp. Commercial data included annual catches and size frequency distribution of Italian, Maltese and Tunisian trawlers for the period 2002-2014. Survey data (MEDITS International Bottom Trawl Survey in the Mediterranean) also covered the period 2002-2014. Firstly, this showed that when fisheries were managed using  $F_{MSY}$  for shrimps as the target (implying a reduction of 30% of the fishing mortality in relation to current fishing mortality), then the biomass of rose shrimp will increase by 2020 while the hake biomass recovers under the Extended Survivor Analysis (XSA) model (11% increase), but continue to decrease (around 30%) for the single species GADGET (Globally Applicable Area Disaggregated General Ecosystem Toolbox) model. When on the other hand, fisheries were managed using  $F_{MSY}$  for hake as the target (implying a reduction of 80% of the fishing mortality in relation to current fishing mortality) both the hake and shrimps showed a strong increase in SSB, but the overall catches of the trawl fishery showed a large reduction.

The GFCM SAC 2017 therefore recommended a reduction of the current fishing mortality for all three assessed stocks.

Using the annual catches data from countries exploiting the assessed shared stocks in the MedSudMed area, the contribution of the different operational units to the total catches are as follows (based on GFCM SAC Stock Assessment Form 2016):

*P. longirostris*: 66.2% Italy; 33.6% Tunisia; 0.3% Malta

*M. merluccius*: 34.1% Italy; 65.4% Tunisia; 0.4% Malta

It is important to note that Malta's contributions to the catches of these stocks is insignificant and even if trawling by the Maltese fleet had to be banned, this would be to no benefit to the stock.

Furthermore, the Maltese fleet in terms of number of vessels has been reduced since 2011 as indicated in Table 18.

**Table 18 The reduction in capacity of the Maltese bottom otter trawling fleet from 2011 to 2016.**

	Number of vessels	kW	GT
Fleet at 2011	23	9501	3351
Permanent reduction	7	2518	779
Temporary reduction	2	779	292
Fleet at 2016	14	6203	2281
Reduction from 2011	39%	35%	32%

Since a reduction of 20% in fishing mortality to approach  $F_{MSY}$  for shrimps, when the overfishing index was 1.3 in 2014, the same reduction would have been suggested with regards to earlier years (e.g. 2011 and 2013), since the overfishing index remained constant. This reduction applied earlier, would not have only the same effects, but should have better results as it would have been applied during earlier years. Thus, Malta's reduction in fleet capacity since 2014 should be taken into consideration.

#### **A.12.4. Stocks-At-Risk Indicator**

The Maltese fleet, in the period 2012-2017, did not exploit any stocks at high biological risk as defined by the guidelines (COM (2014) 545 Final). This is because:

- For the limited number of assessed stocks harvested by the Maltese fleet,  $B_{lim}$  is not available;
- No stocks harvested by the Maltese fleet are subject to an advice to close the fishery, to prohibit directed fisheries, to reduce the fishery to the lowest possible level, or similar advice from an international advisory body, even where such advice is given on a data-limited basis;
- No stock is subject to fishing opportunities regulation which stipulates that the fish should be returned to the sea unharmed or that landings are prohibited; and
- The Maltese fleet does not harvest stocks which are on the IUCN “red list” or is listed by ICES.

STECF-17-18 also concluded that SAR is unavailable for Malta for the period 2009-2015.

## A.13. Economic indicators

### A.13.1. Return on Investment (ROI) vs Next Best Alternative

For the purpose of evaluating whether the fleet segments are economically sustainable in the long term and in the short term, two indicators are evaluated. To calculate these two indicators, the fleet was segmented by fishing technique. This is due to the fact that the same data which was made available for the EU Data Collection Multi Annual Programme (Commission Implementing Decision (EU) 2016/1251 and Regulation (EU) 2017/1004) was used for the purpose of this exercise.

The first indicator (Return on Investment [ROI]) was selected over the Return on Fixed Tangible Assets (ROFTA) since data on intangible assets and tangible assets are both available (Table 19). Data on direct income subsidies was excluded in order to be in line with the latest guidelines (2014 Indicator Guidelines (COM (2014) 545 Final)). ROI was compared to the low risk long term investment. For the purpose of the calculation of this indicator, net profit is considered to be equal to the sum of income from landings and other income; less crew costs, unpaid labour, energy costs, repair and maintenance costs, other variable costs, non-variable costs, and depreciation. Capital asset value is equal to the sum of the vessel replacement value, which was obtained using the Perpetual Inventory Method (PIM), and estimated value of fishing rights. Digressive depreciation was used for the purpose of the calculation of this indicator in order to be in line with the recent advice from PGECON (Planning Group on Economic Issues, 16-19 April 2012, Salerno, Italy). The ROI for the previous years was also calculated in line with the latest guidelines (2014 Indicator Guidelines (COM (2014) 545 Final)).

**Table 19 Return on Investment (ROI) vs next best alternative**

*Low risk long term interest rate of 4.57% was used for the year 2008*

*Low risk long term interest rate of 4.62% was used for the year 2009*

*Low risk long term interest rate of 4.59% was used for the year 2010*

*Low risk long term interest rate of 4.52% was used for the year 2011*

*Low risk long term interest rate of 4.55% was used for the year 2012*

*Low risk long term interest rate of 4.43% was used for the year 2013*

*Low risk long term interest rate of 4.14% was used for the year 2014*

*Low risk long term interest rate of 3.76% was used for the year 2015*

*Low risk long term interest rate of 3.22% was used for the year 2016*

Fishing Technique	Length Class	2008	2009	2010	2011	2012	2013	2014	2015	2016
DFN	VL0006	-23.85%	-66.72%	-	43.04%	103.38%	-21.26%	-65.37%	-42.55%	-19.25%
DFN	VL0612	-8.26%	-33.23%	-5.25%	-	-40.18%	8.28%	-24.56%	-23.51%	-11.80%
DFN	VL1218	-	-	-	-23.31%	-16.93%	-	-	-	-
DTS	VL1824	-16.28%	-9.21%	-	-1.48%	-6.40%	-6.59%	-3.90%	-2.76%	-5.73%
DTS	VL2440	-23.94%	-9.00%	-	-10.68%	-11.53%	-16.23%	-15.00%	-9.69%	-16.55%
FPO	VL0006	-	-132.34%	-	-86.86%	-	-10.72%	-71.28%	60.02%	-4.57%
FPO	VL0612	-16.80%	-71.15%	-	-	-	-28.26%	-47.55%	-	-
HOK	VL0006	-49.76%	-90.82%	-	-56.92%	-	-4.92%	-24.89%	-13.66%	-25.20%
HOK	VL0612	-25.58%	-42.89%	-	-33.83%	3.65%	9.14%	-30.34%	-4.13%	-21.32%
HOK	VL1218	-2.55%	-8.17%	-	-17.85%	-0.57%	8.01%	4.35%	4.87%	14.87%

Fishing Technique	Length Class	2008	2009	2010	2011	2012	2013	2014	2015	2016
HOK	VL1824	-8.79%	-21.36%	-13.84%	-15.05%	-2.20%	-4.58%	2.51%	-4.19%	-11.09%
HOK	VL2440	-8.27%	-4.29%	38.39%	-23.12%	-10.13%				
MGO	VL0006		-67.61%		-64.89%					
MGO	VL0612	-4.44%	-42.89%	30.80%	-34.17%	-9.07%	-2.24%	-18.50%	-12.77%	0.36%
MGO	VL1218	-8.39%	-1.95%	-9.30%	-14.44%	-1.05%	10.54%	-19.54%	-1.07%	12.31%
MGO	VL1824			10.99%	17.57%	-51.79%		-22.10%	3.01%	28.01%
PGP	VL0006	-44.38%	-103.47%	57.15%	-18.65%	-11.32%	-5.14%	-31.67%	-13.27%	-21.47%
PGP	VL0612	-34.77%	-53.84%	29.51%	-30.74%	-12.00%	10.46%	-13.19%	-17.11%	-26.50%
PMP	VL0006	610.18%	1128.84%	32.47%		-55.42%	-1.07%	-54.76%	-19.28%	-49.24%
PMP	VL0612	39.28%	-35.62%	31.26%	-61.00%	-10.87%	-10.02%	-43.31%	-19.72%	-24.22%
PMP	VL1218	-11.83%			-22.12%		31.68%			-52.04%
PMP	VL1824	-10.85%	-8.70%				8.04%			-10.90%
PMP	VL2440									
PS	VL0612		-47.06%						118.19%	
PS	VL1218		-9.28%	12.05%	16.17%		31.08%	17.67%	6.15%	11.98%
PS	VL1824					0.66%		-5.20%	-5.40%	54.18%
PS	VL2440	-162.02%	-57.79%			11.11%	46.84%	10.79%	122.66%	-2.57%
TM	VL2440						-23.93%			

In 2016, the fleet segments, gears using hooks (HOK) VL1218, other active gears (MGO) VL0612, VL1218 and VL1824, purse seiners (PS) VL1218 and VL1824 had a positive ROI greater than the low risk long term interest rate. This indicator is showing that for these six fleet segments, extra ordinary profits are being generated and it could also be a possibility of under-capitalisation.

On the other hand, the fleet segment purse seiners VL2440 had a positive ROI smaller than the low risk interest rate which yields negative value for the indicator. It is important to note that this gear had enough income to cover all the variable and non variable costs including the full capital costs (depreciation) and hence generated a positive net profit. However, the latter shows that in the long-term it would be more beneficial for this segment to invest elsewhere.

The other segments had a negative ROI which indicate an economic over-capitalisation. However, it is important to note that the segments fixed netters (DFN) VL0612, demersal trawlers (DTS) VL1824 and pots and traps (FPO) VL0006 had enough income to cover all the operating costs since they generated a gross profit but did not generate enough income to cover the non operating costs and hence they reported a net loss. The other fleet segments had a negative gross profit and net profit during the reference year in subject.

During 2016, the best performing fleet segments were vessels classified as purse seiners (PS) VL1824 and other active gears (MGO) VL1824, followed by vessels using hooks (HOK) VL1218, other active gears (MGO) VL1218, and purse seiners (PS) VL1218. The worst performing segment were vessels using combined mobile and passive gears (PMP) VL1218.

In 2016, the ROI trend continued improving from the improvements recorded in 2015 for fixed netters (DFN) VL0006 and VL0612; gears using hooks (HOK) VL1218; other active gears (MGO) VL0612, VL1218, and VL1824. Conversely, demersal trawlers (DTS) VL1824 and VL2440; pots and traps (FPO) VL0006; gears using hooks (HOK) VL0006 and VL0612; polyvalent passive gears only (PGP) VL0006; combined mobile and passive gears (PMP) VL0006 and VL0612; and purse seiners (PS) VL2440 have recorded declines in ROI when compared to the improvements recorded in 2015.

Purse seiners (PS) VL0612 and VL1824 have shown an improving ROI trend in 2016, when compared to the previous year. On the other hand, ROI trends for gears using hooks VL1824 and polyvalent passive gears only (PGP) VL0612 have continued to deteriorate from 2015.

### A.13.2. Current Revenue against Break-even Revenue Economic Indicator

For the second indicator, the Current Revenue against Break-Even Revenue Economic Indicator was calculated for the years 2008-2016 (Table 20). For the purpose of the calculation of this indicator, fixed costs is considered to be equal to depreciation, non variable costs and opportunity cost of capital while current revenue is equal to the income from landings, income from the lease of fishing right and other income. Direct income subsidies were excluded from this calculation. Variable costs included crew wages, unpaid labour, energy costs, repair and maintenance costs, expenditure from the leasing of fishing rights and other variable costs. The calculation of the ratio that indicates the long term view of financial viability was selected over the calculation that gives the short term view of financial viability. This is because all data for this calculation is available under the Data Collection Framework while the opportunity cost is calculated in the previous indicator. Income and expenditure from lease of fishing rights, is included in the calculation as stated above.

**Table 20 Current Revenue against Break-even Revenue Economic Indicator for 2008-2016.**

Fishing Technique	Length Class	2008	2009	2010	2011	2012	2013	2014	2015	2016
DFN	VL0006	-0.6	-4.1	-2.0		-9.0	-0.9	-3.4	-1.8	-1.0
DFN	VL0612	0.3	-1.7	0.6		-2.0	1.4	-1.2	-1.7	0.0
DFN	VL1218				-1.4	-0.3				
DTS	VL1824	-0.5	0.3	-0.6	0.9	0.4	0.4	0.6	0.7	0.5
DTS	VL2440	-1.7	0.1	-0.1	0.1	-0.1	-0.7	-0.4	0.1	-0.4
FPO	VL0006		-10.1		-7.0		0.0	-5.5	8.3	0.6
FPO	VL0612	-0.5	-5.0				-1.4	-3.4		
HOK	VL0006	-2.9	-6.6	-3.5	-3.8	-74.5	0.6	-1.3	-1.4	-1.1
HOK	VL0612	-1.2	-2.8	-1.6	-2.2	-0.6	1.8	-1.8	0.9	-0.9
HOK	VL1218	0.8	0.2	-0.6	-0.7	0.9	1.9	1.6	2.3	2.6
HOK	VL1824	0.2	-0.9	-0.3	-0.4	0.7	0.9	1.5	1.0	-0.1
HOK	VL2440	0.1	0.6	-2.2	-1.3	0.1				
MGO	VL0006		-5.0		-6.2					
MGO	VL0612	0.7	-2.6	-1.8	-2.1	0.2	1.0	-0.8	0.2	1.0
MGO	VL1218	0.2	0.9	0.2	-0.5	0.9	2.5	-0.8	2.2	2.1
MGO	VL1824			2.1	3.0	-4.3		-1.8	1.7	3.9
PGP	VL0006	-2.7	-8.1	-3.9	-0.6	0.1	0.6	-1.8	-0.1	-0.9
PGP	VL0612	-2.0	-3.8	-1.5	-1.7	0.0	2.0	-0.1	-0.5	-1.5
PMP	VL0006	54.6	94.7	-1.7		-3.8	1.0	-4.2	-0.6	-3.7
PMP	VL0612	4.6	-2.1	-1.7	-4.1	0.1	0.1	-2.8	-0.6	-1.3
PMP	VL1218	0.0			-1.3		4.1			-3.6

Fishing Technique	Length Class	2008	2009	2010	2011	2012	2013	2014	2015	2016
PMP	VL1824	0.2	0.3				1.7			0.0
PMP	VL2440				1.9					
PS	VL0612		-4.0						-12.5	
PS	VL1218		0.2	2.7	2.5		5.3	3.8	2.3	2.1
PS	VL1824					1.2		0.6	0.6	7.1
PS	VL2440	-2.9	-3.0			2.0	5.3	0.4	1.6	0.8
TM	VL2440						-1.5			

For the year 2016, the fleet segments gears using hooks (HOK) VL1218; other active gears (MGO) VL1218 and VL1824, purse seiners (PS) VL1218 and VL1824 had a ratio greater than 1. This result shows that these fleet segments generated enough income to cover the variable, fixed and capital costs and hence these fleet segments are profitable, with potential under-capitalisation.

For year 2016, the fleet segments fixed netters (DFN) VL0612; demersal trawlers (DTS) VL1824; pots and traps (FPO) VL0006; other active gears (MGO) VL0612; combined mobile and passive gears (PMP) VL1824; and purse seiners (PS) VL2440 had a ratio less than 1. This means that these fleet segments generated insufficient income to cover variable, fixed and capital costs. Hence these fleet segments are unprofitable, with a potential over-capitalisation. The other segments had a negative CR/BER result, which means that variable costs alone exceed current revenue and hence they are unprofitable.

For the year 2016, the best performing fleet segment was purse seiners VL1824, amounting to 7.1. The worst performing fleet segment for 2016 is vessels using combined mobile and passive gears (PMP) VL0006, amounting to -3.7.

Between 2008 and 2016, the least economically sustainable year was 2012 with 18 unprofitable segments out of the 20 segments in the fleet. Conversely, the best economically sustainable year was that of 2013, with 11 profitable segments out of the 21 segments in the fleet.

Although the year 2016 has shown an economically insufficient fleet, as the majority of the segments have shown an indicator less than one, it is important to mention that a number of unprofitable segments have made improvements in this indicator from the previous year. In 2016, 6 segments were balanced CR/BER indicator, whereas the remaining 15 had an imbalanced indicator.



## ***A.14. Action Plan***

### **A.14.1. Background**

The Maltese authorities have made an analysis of the biological, technical and economical parameters for 2016 using data collected through a census of the entire fleet and information collected through landing declarations and sales notes. The results lead the Maltese authorities to the conclusion that the only meaningful indicator for the Maltese fleet is that for the ROI and Current Revenue vs Break Even Revenue (BER) given the absence of reliable information on the biological situations of stocks. In the current report the only segment which shows a negative trend and is considered as imbalanced is the PGP segment. Most of the small scale vessels (< 12m LOA) are not being monitored.

Based on this report, the Maltese authorities acknowledge that the segments which show a trend of being imbalanced over time may benefit from the application of an Action Plan as explained below.

Malta acknowledges that no vessel in the imbalanced fleet segments is eligible for replacement or modernization of main or ancillary engines with support from the EMFF.

### **A.14.2. Analysis of Trends**

Since Article 22 of the Common Fisheries Policy refers to balance (and imbalance) over time, it is appropriate to consider several years rather than a single year (COM (2014) 545 Final). It should be noted that in previous years, the same report did not include such an in depth analysis of trends and, therefore, may have not been portraying the actual situation of the fisheries involved. Thus, an analysis of trends in economic indicators is being presented in this report to have a meaningful picture of the fleet.

Despite that the majority of the fleet segments in 2016 are showing negative economic indicators, 4 out of the 16 imbalanced segments suggest an improvement in the trend of these two indicators when compared to previous years (2008-2016; Annex I Figure 1 and Figure 2). These trends are summarised in Table 21 below. Conversely when looking into the economic development trends of the fleet segments, only one segments out of twenty-one has deteriorated during the years analyzed. This deterioration was recorded for PMP VL0006. Out of the remaining segments, five segments were balanced with an improving economic performance trend, while the other 15 fleet segments showed an improving trend in their economic performance.

The 2016 Annual Economic Report on the EU Fishing Fleet (STECF-18-03, in process of publication) also shows an overall improved economic performance in the Maltese fishing fleet.

The same analysis indicated above could not be followed for the technical indicator. The technical vessel utilization indicator is not available by fleet segment for a time series long enough to enable trend analysis over a significant number of years. Furthermore, the technical indicators are not directly applicable to Malta since most fishers have more than one vessel, all operated by one crew.

**Table 21 Analysis of trends for all segments. A traffic light approach; green for balanced and improving fleet segments, yellow for fleet segments showing an improving trend and red for fleet segments which showed an overall deteriorating trend.**

Fleet Segment	Vessel Length	Population following fleet segmentation	No of licenses according to the FVR as at 31.12.2017	Economic development trend (2008-2016)	ROI trend analysis - R	BER trend analysis - R	Conclusions
HOK	VL1218	9	11	Improved	Balanced indicator	Balanced indicator	Balanced
MGO	VL1218	6	5	Improved	Balanced indicator	Balanced indicator	Balanced
MGO	VL1824	1	1	Improved	Balanced indicator	Balanced indicator	Balanced
PS	VL1218	3	3	Improved	Balanced indicator	Balanced indicator	Balanced
PS	VL1824	1	2	Improved	Balanced indicator	Balanced indicator	Balanced
DFN	VL0612	1	1	Improved	Improved	Improved	Improved economic development trend, ROI and BER indicators
DFN	VL0006	8	0	Improved	Improved	Weak improvement	Improved economic development trend and ROI indicators, and weak improvements in BER indicator
HOK	VL0006	8	3	Improved	Deteriorated	Weak improvement	Improved economic development trend and weak improvement in BER indicator, and deteriorated ROI indicator
MGO	VL0612	14	11	Improved	Improved	Balanced indicator	Improved in economic development and ROI indicator, and balanced BER indicator

Fleet Segment	Vessel Length	Population following fleet segmentation	No of licenses according to the FVR as at 31.12.2017	Economic development trend (2008-2016)	ROI trend analysis - R	BER trend analysis - R	Conclusions
DTS	VL1824	6	8	Improved	Deteriorated	Slight deterioration	Improved economic development trend, deterioration and slight deterioration in ROI and BER indicators respectively
DTS	VL2440	4	3	Improved	Deteriorated	Deteriorated	Improved economic development trend, and deteriorated ROI and BER indicators
FPO	VL0006	1	0	Improved	Deteriorated	Deteriorated	Improved economic development trend, and deteriorated ROI and BER indicators
HOK	VL0612	37	37	Improved	Deteriorated	Deteriorated	Improved economic development trend, and deteriorated ROI and BER indicators
HOK	VL1824	19	17	Improved	Deteriorated	Deteriorated	Improved economic development trend, and deteriorated ROI and BER indicators

Fleet Segment	Vessel Length	Population following fleet segmentation	No of licenses according to the FVR as at 31.12.2017	Economic development trend (2008-2016)	ROI trend analysis - R	BER trend analysis - R	Conclusions
PGP	VL0006	321	302	Improved	Deteriorated	Slight deterioration	Improved economic development trend, deterioration and slight deterioration in ROI and BER indicators respectively
PGP	VL0612	141	123	Improved	Deteriorated	Deteriorated	Improved economic development trend, and deteriorated ROI and BER indicators
PMP	VL0006	25	21	Deteriorated	Deteriorated	Deteriorated	Deterioration in economic development trend, ROI and BER indicators
PMP	VL1218	1	0	No result	Deteriorated	Deteriorated	Deterioration in ROI and BER indicators
PMP	VL0612	121	129	Improved	Deteriorated	Deteriorated	Improved economic development trend, and deteriorated ROI and BER indicators
PMP	VL1824	2	0	No result	Deteriorated	Deteriorated	Deterioration in ROI and BER indicators
PS	VL2440	2	1	No result	Deteriorated	Deteriorated	Deterioration in ROI and BER indicators

### **A.14.3. Fishing Opportunities**

It is pertinent to note that the only fishing opportunities allocated to Malta in 2016 was for bluefin tuna. These fishing opportunities are fixed through a Council Regulation issued every year in line with the Treaty on the Functioning of the European Union.

### **A.14.4. Context**

In summary, depreciation costs are deemed “normal” whilst the replacement value, even for old hulls, is high. To overcome these values a higher income value needs to be inputted in the formula in order to obtain positive values for the ROI.

A negative ROI vs next best alternative indicator infers that the investment being made in the fishing enterprise would have been more profitable if invested elsewhere. This could be due to low activity of the vessel especially in the case of license holders who work in the fishing sector on a part-time basis and therefore do not depend entirely on their fishing activities to sustain them. Another possibility linked to a negative value is that the marine biological resources available are not able to sustain the fleet. This could either be due to the necessary biomass not being harvested at sustainable levels or that the market is not providing adequate returns requiring some type of intervention. With regard to the available biomass this could be addressed through closed areas and/or closed seasons which would have a positive impact on the stocks exploited especially if targeted to improve their spawning potential. Interventions on the market to improve the returns of the sector could include promotion of the fishery products or to incentivize the better organization of the sector to access more profitable markets.

Management measures under the Mediterranean Regulation, General Fisheries Commission for the Mediterranean (GFCM) and International Commission for the Conservation of Atlantic Tuna (ICCAT) also contribute to achieving sustainable exploitation of stocks. In particular, the bluefin tuna fleet is in balance with the fishing opportunities allocated to it, whilst the fleets targeting swordfish fall within the segments having a positive ROI.

### **A.14.5. Link to Previous Actions and Rationale for a New Action Plan**

The new action plan was compiled by taking into consideration the trend analysis of the economic performance of the Maltese fishing fleet and the trend analysis of the two economic indicators for the years 2008-2016 (Table 22). This consideration is suggested in the 2014 guidelines (COM (2014) 545 Final), whereby it states that the Common Fisheries Policy refers to balance (and imbalance) *over time* rather than one single year. Hence Malta considered several years rather than a single year when compiled the action plan in Annex II of this report.

**Table 23 Summary table illustrating the difference between the status obtained for fleet segments with regard to reference years 2015 and 2016 as well as well the overall historical trend, based on the two economic indicators. ✓ indicates balance, ✖ indicates imbalance, ↑ shows an improving trend, while ↓ indicates a deteriorating trend. Rows shaded in grey indicate fleet segments showing imbalance during both 2015 and 2016 as well as a deteriorating historical trend**

Fishing Technique	Vessel Length	2015	2016	Historical trend	Requirement for further actions
DFN	VL0006	✖	✖	↑	
DFN	VL0612	✖	✖	↑	
DTS	VL1824	✖	✖	↑	
DTS	VL2440	✖	✖	↑	
FPO	VL0006	✓	✖	↑	
HOK	VL0006	✖	✖	↑	
HOK	VL0612	✖	✖	↑	
HOK	VL1218	✓	✓	↑	
HOK	VL1824	✖	✖	↑	
MGO	VL0612	✖	✓	↑	
MGO	VL1218	✖	✓	↑	
MGO	VL1824	✓	✓	↑	
PGP	VL0006	✖	✖	↑	
PGP	VL0612	✖	✖	↑	
PMP	VL0006	✖	✖	↓	In 2016, this fleet segment is composed of 25 vessels using Combined mobile and passive gears. This will be addressed through actions for other segments as per Action Plan.
PMP	VL0612	✖	✖	↑	
PMP	VL1218	N/A	✖	N/A	
PMP	VL1824	N/A	✖	N/A	
PS	VL1218	✓	✓	↑	
PS	VL1824	✖	✓	↑	
PS	VL2440	✓	✖	N/A	



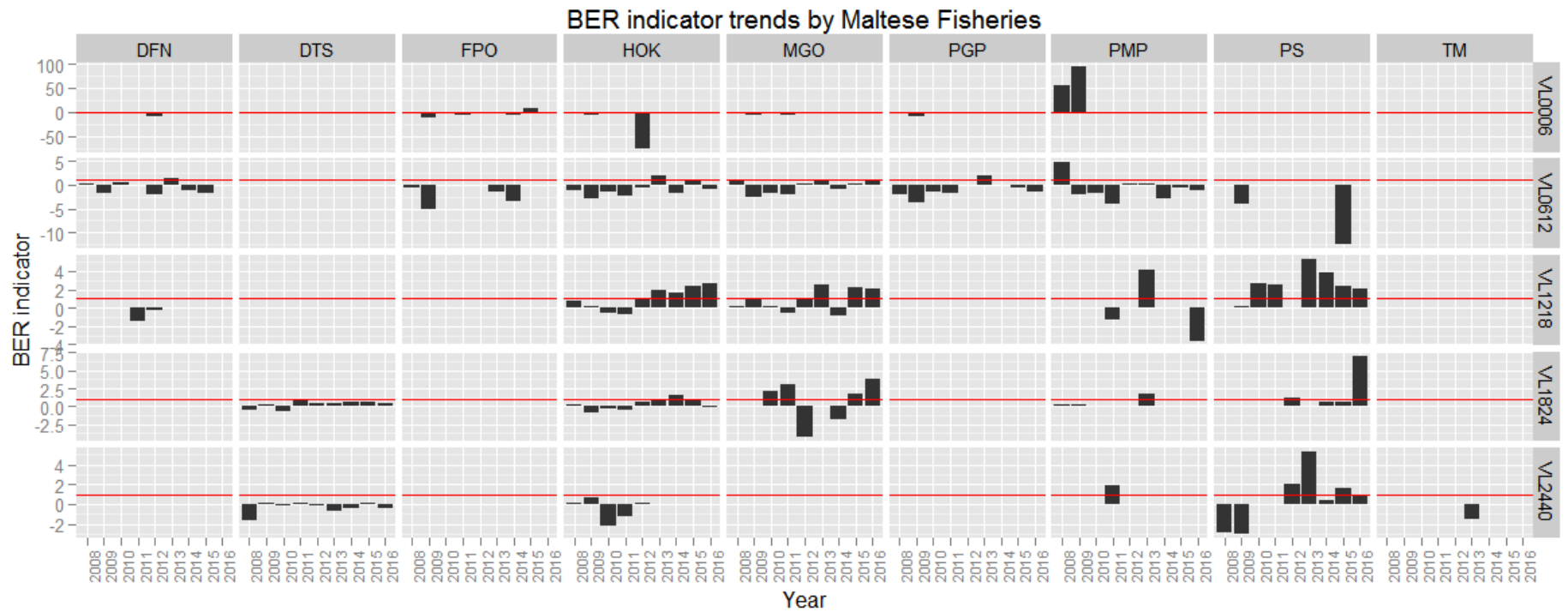


Figure 2 Trend analysis for the economic indicator Current Revenue against Break-even Revenue.



## Annex I – Action Plan

Timeframe	Segments addressed	Measure	Action	Indicator
2017-2020	All vessels <12m	Monitoring of landings	Weighing of fishery products on the Automatic weighing and Labelling machines	All catches recorded
	All vessels <10m	Monitoring of activity	Sampling plan	All landings of vessels <10m monitored through sampling and sales notes
	Vessels ≥ 6m and <12m	Monitoring of activity	The vessels will be equipped with a monitoring system to detect fishing activity leading to better monitoring.	All fishing activity
	DFN	Conservation	Prohibition of fishing in bays and creeks from 15 February to 30 August with all types of nets.	Increase in biomass by 2020
	FPO	Conservation	Closed season for the months of April and May	Increase in biomass by 2020
Ongoing	Entire fleet	Analysis of the market to identify any structural deficiencies or market forces resulting in a low average price at first sale for fishery products	This analysis will be assisted by the implementation of an innovative traceability system being implemented at national level and co-funded by the EU covering primary production up to the first sale as it is expected to yield better information on the fishery products caught and marketed for the first time	Identification of measures to achieve better prices at first sale to help generate more income for the fishers