The Annual Report on the Fishing Fleet of Estonia 2015

Summary on the balance between fishing opportunities and fishing capacity

The annual report evaluates the balance between fishing opportunities and fishing capacity of Estonia's fishing fleet in year 2015. For the evaluation, altogether 6 indicators have been calculated – SHI, SAR, ROI, CR/BR, inactive fleet indicator and vessel utilisation indicator. All indicators except SHI and SAR observe changes over 5-year period. Inactive fleet indicator is calculated for all fleet segments except coastal segments (VL0010 and VL1012). Due to the lack of data under STECF JRC the SHI and SAR are presented only for the Baltic Sea fleet segments and the latest data is only for 2014. The economic indicators for fleet segment VL40XX will not be presented due to the confidentiality restrictions.

Compared to 2014, the number of vessels and gross tonnage increased slightly in 2015 while the main engine power decreased.

The evaluation of balance indicators shows that an overall assessment of the situation in Estonia's fleet is rather positive – the balance has been more or less achieved and there is some room left for adapting with the changes in stocks. Negative values for single years should not be overemphasized as they may not accurately reflect general trends in fleet segments.

Biological sustainability indicators

As in 2013, in year 2014 the SHI was above 1 in 3 fleet segments (VL1218TM, VL1824TM, VL2440TM). Overall, there are 4 fleet segments which have had SHI values above 1 on a period of 2010-2014, all belonging to the Baltic Sea trawling fleet. There has been no clear trend in three out of these four fleet segments - TM VL1218, TM VL1824, TM VL2440 - to indicate of relying on a stock of which fishing opportunity is set above MSY. Also, as was stated in the STECF JRC report (STECF-15-15), an SHI indicator above 1 may reflect political decisions to reach F_{MSY} not immediately, but by 2020, as long as the target to reach F_{MSY} in 2020 can be achieved.

The only fleet segment in which SHI indicates relying on a stock fished above MSY for 3 consecutive years was DTS VL2440 from 2010 to 2012. It is important to note that there were only two vessels in that fleet segment from 2010-2012 and only one vessel from 2013-2014. Last vessel remaining in that segment exited the fleet register in mid-2014, thus there are no vessels in that fleet segment anymore.

Due to limited data availability for 2014, no specific conclusions could be done concerning the SAR indicator.

Economic indicators

Out of four fleet segments active in the Baltic Sea (VL1824 and VL2440 are clustered together), two (VL0010 and VL1012) showed significant profitability both in long-term (ROI) and in short-term (CR/BER) during recent years (2012-2014). ROI continued to decrease in segments VL1218 and VL2440, and while for segment VL1218 also the CR/BER indicator has further fallen, then short-term profitability in segment VL2440 increased compared to 2013. As three vessels were removed from VL2440 with public aid in 2014 then further improvements in ratio may not be seen before 2015. It is also important to note that

most of the fish landed by vessels in segments VL1218 and VL2440 is owned by producer organisations in charge of the whole chain from catches to processing to exports, therefore their profits are generated at the export stage and not at the moment of landing.

Vessel use indicators

The number of inactive vessels in fleet length classes VL1218, VL1824, VL2440 and VL40XX is very low – 3 vessels out of 41, but as individual fleet segments consist of a relatively small number of vessels, then few vessels with very low number of fishing days affect the indicator value of a whole segment. The highest vessel use indicator is in the distant water fishing fleet (VL40XX). The lowest is in coastal fleet PG VL0010, which can be expected due to various socio-economic, fishery-specific and weather-related vessel use factors.

Section A

Description of fleets

On EU level, the Estonian marine fishing vessels belong into the MFL segment. On national level, the Government Regulation of 12.11.2015 No 117 determines the criteria for grouping fishing vessels into segments based on overall length (LOA), fishing gear, main target species and fishing grounds. The national segments for marine fishing vessels are: the Baltic Sea trawling segment (4S1, vessels with overall length 12 metres and above), high seas fishery segment (4S3, overall length 24 metres and above) and coastal fishing segment (4S2, less than 12 metres in length). The number of fishing vessels in Estonian marine fishing fleet in year 2015, together with their main characteristics, is given in the table below.

Table 1. Estonian marine fishing fleet in year 2015.

National segment	DCF fleet segment	Length class (m)	No of vessels	kW	GT	Average age	Average kW	Average GT	Average length (m)
4S2	PG VL0010	VL0010	1 415	17 518	1632	22	12	1	5.6
	PG VL1012	VL1012	83	4 656	576	25	54	7	11.6
4S1	DTS VL1218*	VL1218	1	110	28.65	34	110	28.65	17.56
	TM VL1218*		7	811	109	27	116	16	15.6
	INACTIVE VL1218*		2	184	22	26	92	11	12.97
	DTS VL1824*	VL2440	1	309	121	28	309	121	20.07
	TM VL1824*		5	1 546	633	23	309	127	22.6
	TM VL2440*		20	6 757	2 773	31	338	139	26.5
4S3		VL40XX	5	12 726	7 697	28	2635	1539	60
Total			**1 539**	**44 617**	**13 592**				

* Following fleet segments are clustered together as the number of vessels in a segment is less than 10: DTS VL1218 with TM VL1218; TM VL1824 and DTS VL1824 with TM VL2440. The clustering is made according to the Chapter III.A.4 of 18 December 2009 Commission Decision (2010/93/EU), which states that in cases where a fleet segment has less than 10 vessels a clustering may be necessary.

Length classes VL0010 and VL1012

The Baltic Sea coastal fishing segment is divided between two distinctive length classes: VL0010 and VL1012, which correspond to the DCF fleet segments PG VL0010 and PG VL1012. These vessels are used in the Baltic Sea coastal waters up to 12 nautical miles or up to the 20-metre isobaths.

Length class VL0010 has the largest number of vessels, 92 % of the whole Estonian marine fishing fleet and their total engine power and gross tonnage make up 39 % and 12 % of the fleet respectively. As can be seen from the Table 2 below, the total landings by vessels in

length class VL0010 is relatively small considering the number of vessels, making only 4.5 % of the total landings. These boats are used for fishing for different species (European perch, smelt, Baltic herring, flounder, pike-perch, roach, northern pike, etc.) with various passive gears.

Length class VL1012 comprises of vessels used for fishing for Baltic herring in the Baltic Sea with stationary uncovered pound nets, mostly in a short spring season from April to June. The total number of vessels in length class VL1012 is relatively small, 5 % of the whole fleet, and their total engine power and gross tonnage make up only 10 % and 4 % of the fleet respectively, but the quantity of fish (Baltic herring) landed by these vessels makes 12.6 % of the total landings and 27 % of all Baltic herring landings.

Length classes VL1218 and VL2440

By DCF classification, the Baltic Sea trawling segment consists of five fleet segments: DTS VL1218, TM VL1218, DTS VL1824, TM VL1824 and TM VL2440. All segments except the TM VL2440 have below 10 vessels each. Therefore, these segments have been clustered into two – DTS VL1218 and TM VL1218 have been clustered together into VL1218, and vessels of length classes VL1824 and VL2440 have been clustered together to form a segment VL2440.

Vessels belonging to the clustered length classes VL1824 and VL2440 are mostly used for fishing sprat and Baltic herring in the Baltic Sea. Some of the vessels of the length classes VL1824 and VL2440 target cod as well. Combined, vessels of these two clustered length classes make up only 2 % of the total number of vessels, but their total engine power and gross tonnage make up 22 % and 27 % of the fleet respectively. Total landings by the Baltic Sea trawling fleet was 47 288.41 tonnes, which is 67.2 % of all landings by Estonian fishing vessels in 2015.

Length class VL40XX

Length class VL40XX comprises of distant water trawling vessels used for fishing various regulated and non-regulated species in the Atlantic. Five vessels in length class VL40XX make up to 29 % of the total engine power and 57 % of the total gross tonnage of the whole fleet. Total landings by these vessels were 11 083.64 tonnes, which is 15.7 % of all landings by Estonian fishing vessels in 2015.

Table 2. Main fisheries and total landings in year 2015 (main species and gear are sorted by relevance, in decreasing order).

Length class (m)	National segment	Main fishing area(s)	Target species	Main gear	Total landings (t)
VL0010	4S2	Baltic Sea, coastal	European perch, Baltic herring, smelt, European flounder, roach	FYK, GNS, FPN	3150.57
VL1012			Baltic herring	FPN	8886.9
VL1218	4S1	Baltic Sea	Baltic herring, sprat	OTM, OTB, PTM	997.92
VL1824			sprat, Baltic herring, cod	OTM, OTB	11806.61
VL2440				OTM	34483.88
VL40XX	4S3	NAFO, NEAFC, SVA, GRL	Northern prawn, redfish, cod, Greenland halibut, American plaice	OTB	11 083.64
Total					**70409.52**

Link with fisheries

Commercial fishery in Estonia is based on the system of individual transferrable quotas (ITQ) and individual transferrable effort (ITE), allocated to companies, i.e. fishing rights owners, based on their 3-year historical fishing rights. In case of ITE, national limits on gears in order to limit fishing effort are set by national scientific advice, and the total number is divided

between fishing rights owners based on their 3-year historical fishing rights. It is allowed to swap given year's fishing quotas with other companies or with other countries. A company has the right to waive or sell its historical fishing rights. If the fishing rights owner has not paid for its current year allocation then the owner will not be granted a fishing permit and the allocated quantity is divided between other applicants. If a fishing permit has not been issued or catches have not been reported under the fishing permit for a three consecutive years, the fishing rights owner loses its historical fishing rights allocation.

Fishing is allowed only if a relevant fishing permit is issued, irrespective whether fishing for regulated or non-regulated species. There are two types of fishing permits: fisherman's fishing permit and fishing vessel's fishing permit. Fishing vessel's fishing permit is issued for a specific fishing vessel and that vessel must have a valid fishing licence.

Fisherman's fishing permit is in use in coastal fisheries, where ITE system is in use and allowed fishing effort - the type and number of fishing gears – is marked on a fishing permit. Fishing permits are issued to a fishing rights owner and permit is not directly linked with a specific vessel, because not all fishing is conducted with fishing vessels (for example ice-fishing in winter). Since coastal fishing uses mostly passive gears, regulating effort through vessel kW and GT is not relevant in this kind of fisheries. However, vessels that are used must have a valid fishing licence.

Estonia has fishing opportunities in the Baltic Sea, in the NAFO and NEAFC Regulatory Areas, and shrimp fishing days in Svalbard. In addition, Estonia's distant water fishing vessels fish for non-regulated species in the Barents Sea and NAFO, and Northern prawn in Greenland waters under the EU-Greenland FPA. In coastal fishery, most of the target species are non-regulated on EU-level, but regulated by national effort limitation scheme (ITE).

Baltic Sea fisheries

The evolution of Estonia's initial fishing opportunities (as adopted with TAC regulation) in the Baltic Sea is shown below in chart 1. As can be seen from chart 1, Atlantic salmon in areas 22-31 has made the sharpest decline, while both cod fishing opportunities have been rather stable over the five-year period. Fishing opportunity of sprat has continued decreasing compared to that of 2011, while both Baltic herring quotas are showing signs of improvement. In the Baltic Sea trawling segment (VL1218 and VL2440), changes in the fishing opportunities of sprat and Baltic herring have an impact on the volume of total catches, since all vessels (except one vessel, which was targeting cod) fish for both at some time during the year. As can be seen from table 3, Atlantic salmon and cod are not important target species for trawling fisheries. Only one vessel targeted cod in 2015 and no vessel reported catches of Atlantic salmon.

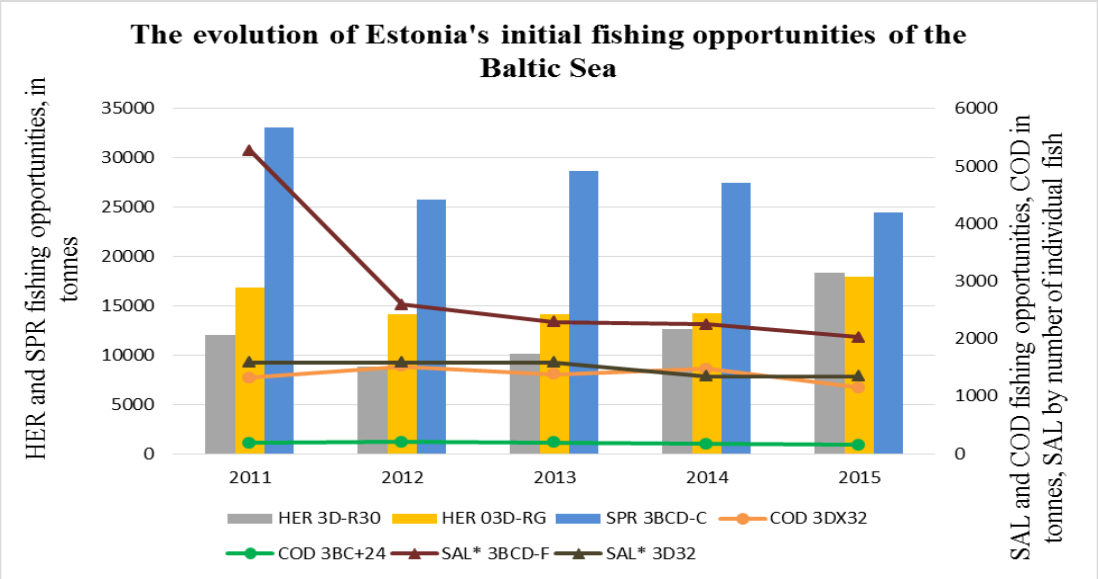

Chart 1. Estonia's initial fishing opportunities in the Baltic Sea in years 2011-2015.

Baltic Sea fishing opportunities allocated to Estonia are divided between coastal and trawling segment. Baltic herring is an important species both for the coastal and trawling segment. Catches of sprat and cod by coastal fishery have been marginal. Atlantic salmon was received only by coastal fleet segment PG VL0010.

Landings of regulated species and total landings in 2015 by the Baltic Sea coastal and trawling fleets are shown in the table 3 below. Overall, 83.6 % of HER 3D-R30, 91.3 % of HER 03D.RG, 89.3 % of SPR, 13.1 % of COD 3DX32, 0 % of COD 3BC+24, 31.6 % of SAL 3BCD-F and 66.7 % of SAL 3D32 Estonia's year 2015 quota (final quota after quota swaps with other Member States) were exhausted.

Table 3. Total landings of regulated species in the Baltic Sea coastal and trawling fisheries in year 2015 (in tonnes).

Length class (m)	HER	SPR	COD	SAL	Total landings
VL0010	501.98	0.18	3.92	5.58	3150.57
VL1012	8788.69	0	0	0.002	8886.9
VL1218	705.45	292.28	0	0	997.92
VL1824	5366.29	6219.92	178.67	0	11806.61
VL2440	16955.08	17441.2	0.02	0	34483.88
Total	**32317.48**	**23953.57**	**182.61**	**5.59**	**59325.87**

Concerning species targeted by coastal fleet, which are not regulated at the EU-level, according to the 2015 report from the University of Tartu Estonian Marine Institute, there haven't been considerable changes in the state of main targeted fish stocks compared to previous years and a general recommendation is not to increase fishing effort. Therefore, the number and type of fishing gear allowed to use in coastal fishery in the year 2015 was mostly the same as in year 2014. Catches of some of the main non-regulated (at EU-level) species compared to catches of HER and total catches by coastal fleet (VL0010 and VL1012) together with HER quota allocated for coastal fleet in years 2011 - 2015 is shown in chart 2 below. As can be seen from the chart 2 below, total catches are substantially impacted by the quota of Baltic herring. The proportion of other main species has remained the same on a given period.

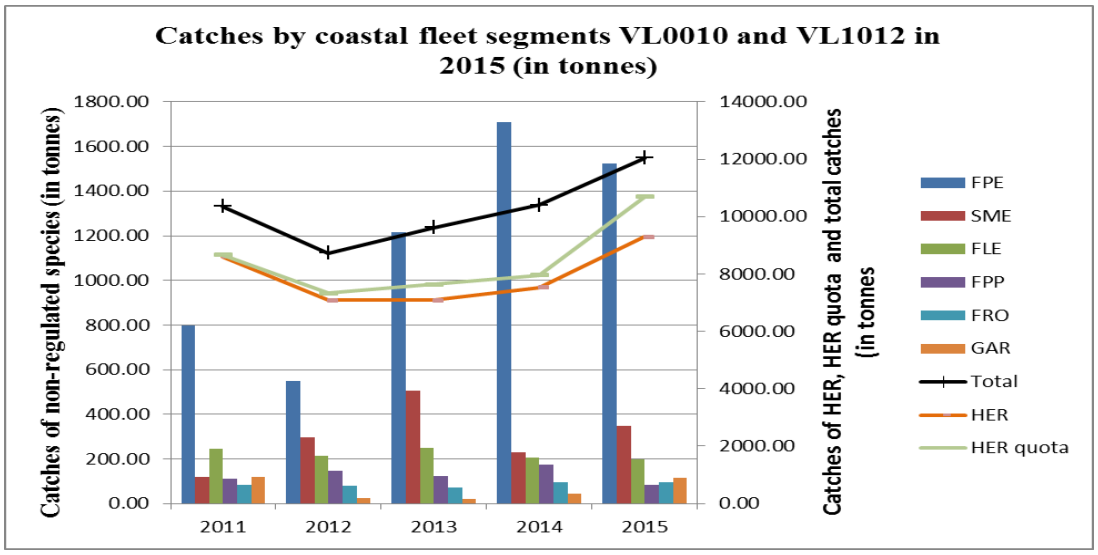

Chart 2. Catches of main non-regulated (at EU-level) species and HER and total catches by coastal fleet (VL0010 and VL1012) together with HER quota allocated for coastal fleet in years 2011 – 2015.

Distant water fisheries

After several years of reductions in NAFO 3L Northern prawn quota the quota was finally put under moratoria in 2015. That together with the continuing moratoria on NAFO 3M Northern prawn means that there were no shrimp fishing in NAFO RA by Estonian fishing vessels in 2015. Thus, fishing for non-regulated species (mostly Northern prawn in the Barents Sea), cooperation for quota swaps, charter agreements and fishing under the EU-Greenland FPA have become more important for Estonia's distant water fishing fleet. Estonia's redfish fishing opportunity in NAFO 3LN increased in 2015 by 49 % compared to that of 2014. In addition, fishing opportunity of Greenland halibut in NAFO 3LMNO increased slightly. Other fishing opportunities, RED 3M, SKA 3LNO and SQI 3 and 4 remained the same, while COD 3M decreased by 5 %. After years of moratoria, witch flounder fishery in NAFO 3NO was reopened in 2015, of which Estonia's distant water fleet also benefits. Concerning the most important non-regulated target species in catch volume, Northern prawn in ICES Subareas I and II, the estimates of stock biomass have been far above MSY $B_{trigger}$ and fishing mortality far below F_{MSY} according to the ICES advice issued on October 2014.

The proportion between Estonia's own fishing opportunities and total landings in 2015 is shown in the table 4 below.

Table 4. The comparison between total landed quantities (both regulated and non-regulated species) and the amount of Estonia's own initial fishing opportunities in distant water fleet segment in year 2015 (Svalbard shrimp fishing days are excluded from the comparison).

Area	Estonia's fishing opportunities (t)	Total landings (t)
NAFO	3 006	3 586
NEAFC	375	6 302
East-Greenland	0	248

Overall, 100 % of RED 3LN, 53.6 % of RED 3M, 99.1 % of COD 3M, 100 % of GHL 3LMNO, 10.7 % of SKA 3LNO, 42 % of WIT 3NO and 0 % of SQI 3 and 4 Estonia's year 2015 quotas in NAFO RA (final quota after quota swaps with other Member States) were exhausted. As Estonia's fishing opportunities in NEAFC are too small to fish by Estonia's own fleet, they are usually swapped against fishing opportunities in NAFO RA.

Developments in fleet

By the end of 2015, there were 1 538 vessels in the Estonian marine fishing fleet. The total number of vessels has increased compared to 2014 because of entries of new vessels into length class VL0010. In all other length classes the number of vessels remained the same.

The development of the fleet in last 12 years since the joining with the EU in May 1, 2004, is given below in charts 3 to 5. Although the number of vessels has increased over the period of 2004-2015, the total gross tonnage and engine power have decreased considerably due to the exit of larger trawling vessels from the fleet and replacing them with small coastal fishing vessels with length under 12 m and using passive gears. By vessel length classes, the number of vessels has decreased in all vessel length classes and stabilised in recent years, except in length class VL0010. As can be seen from the charts 3 to 5 below, the most stable vessel length class over the 12 year period has been VL1012 (corresponding to DCF fleet segment PG VL1012), where only minor changes have occurred by all three characteristics. Sharpest decline in the number of vessels, engine power and gross tonnage have taken place in the Baltic Sea trawling fleet length classes VL1218 and VL2440 and also in the distant water fleet VL40XX. The main drivers behind the decline in those length classes have been both economic and environmental as to better adjust with smaller fishing opportunities and to ensure profitability.

During 2015, 15 vessels (3406 kW, 1660 GT) were deleted from the fleet, 2 from segment 4S1, 12 from segment 4S2 and 1 from segment 4S3. Total of 38 vessels (3396 kW, 1792 GT) entered the fleet in 2015, most of them (35 vessels) into segment 4S2.

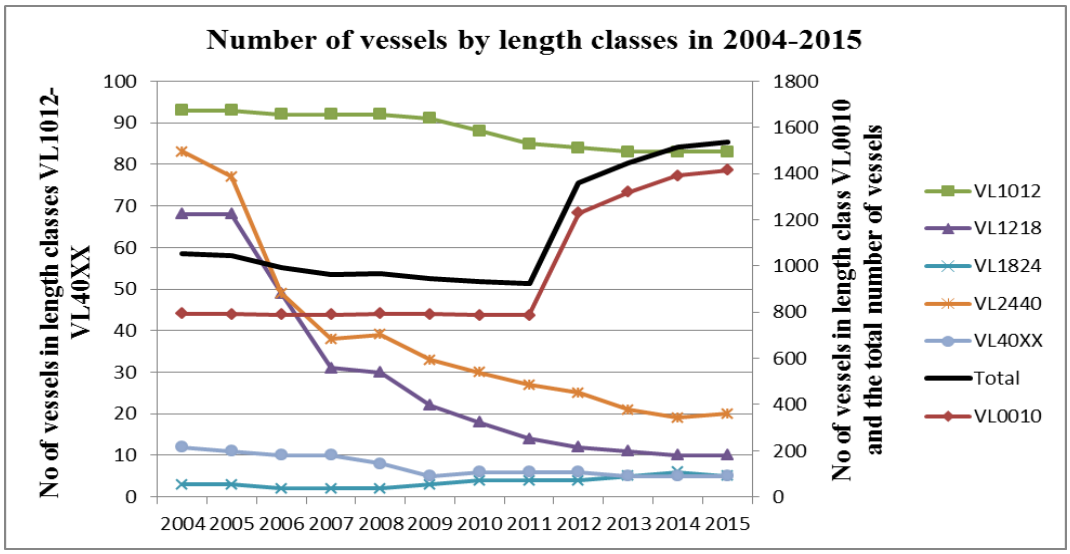

Chart 3. Developments in the number of vessels in Estonian marine fishing fleet by vessel length classes in 2004-2015.

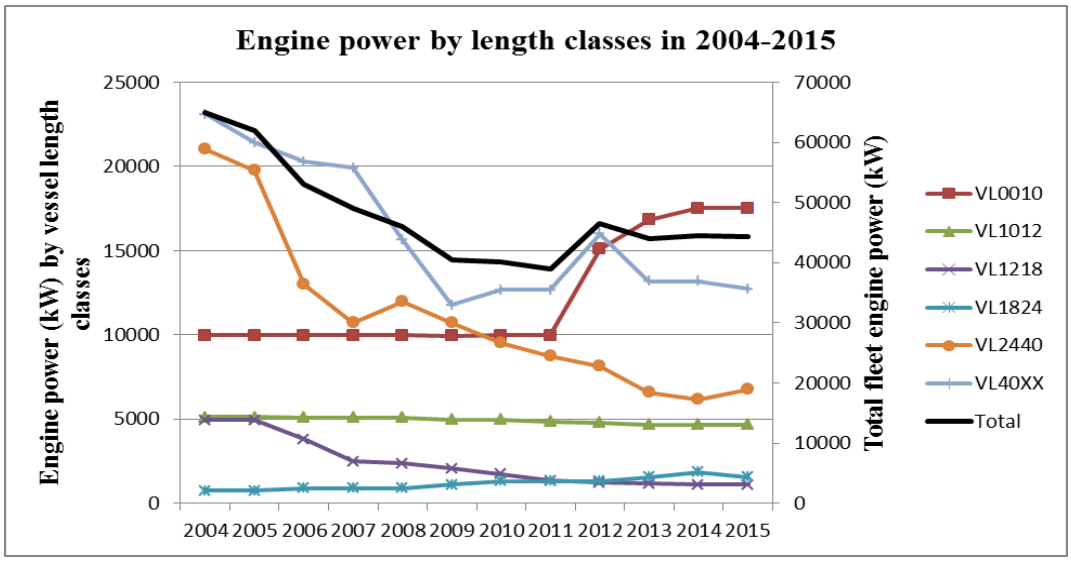

Chart 4. Developments in the main engine power of vessels in Estonian marine fishing fleet by vessel length classes in 2004-2015.

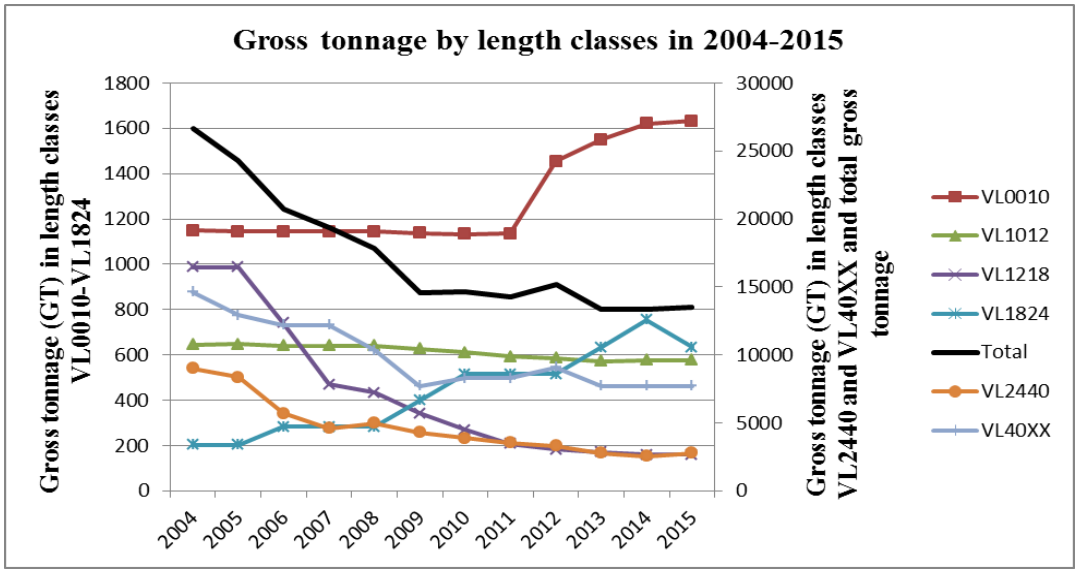

Chart 5. Developments in the gross tonnage of vessels in Estonian marine fishing fleet by vessel length classes in 2004-2015.

Section B

<u>Effort reduction schemes and impact on fishing capacity of effort reduction schemes</u>

Estonia adheres to numerous different effort control and reduction schemes established by legal acts of national, EU or RFMO level, for example different seasonal/regional temporary fishing restrictions, establishing yearly list of vessels allowed to fish for cod in the Baltic Sea and vessels allowed to fish in the Gulf of Riga.

National fishing capacity reduction schemes have been used for reducing fishing capacity and consequently fishing effort. Between 2006 and 2014, a total of 62 (16998 kW and 7312 GT) vessels were removed with public aid from Estonia's fishing fleet. Most of them, 60 vessels, were removed from the Baltic Sea trawling fleet, out of which 16 belonged into length class VL1218 and 44 into length class VL2440. No vessels were removed with public aid from the length class VL1824. Other two vessels out of the total of 62 vessels were removed from the distant water fleet. Effort reduction schemes did not include coastal fleet segments, length classes VL0010 and VL1012, as fishing in coastal fishery is regulated by ITE system. Taking into account the long-term dynamics of the relevant fish stocks, no further decommissioning

schemes are foreseen as fishing capacity has generally reached the targets set by National Fishing Effort Adjustment Plans and there is no structural overcapacity.

Section C

Compliance with entry/exit scheme and with level of reference

As in previous years, Estonia followed in 2015 the entry-exit scheme as foreseen under the common fisheries policy. Every entry into the fleet register or increase in tonnage and/or engine power is covered by the removal of at least equal quantity of capacity from the fleet. The fishing capacity of a vessel deleted from the register with public aid cannot be replaced. All entries of a new vessel into the fleet and all capacity increases have been compensated by the removal of an equivalent or larger capacity from the fleet. Estonia has always been in compliance with reference levels.

Table 5. Compliance with the entry/exit scheme and with level of reference in year 2015.

	Management of the entry/exit scheme in 2015	**GT**	**kW**
1	**Fleet ceiling on 01/01/2014 according to Annex II of the European Parliament and the Council Regulation (EU) No 1380/2013**	**21 677**	**52 566**
2	Capacity of the fleet on 01/01/2015	13 339	44 489
3	Entries of vessels of more than 100 GT financed with public aid	0	0
4	Other entries or capacity increases (not included in 3 & 5)	1792	3396
5	Increases in tonnage GT for reasons of safety	0	
6	**Total entries (3 + 4 + 5)**	1792	3396
7	Exits financed with public aid*	348	716
8	Other exits (not included in 7)	1660	3577
9	**Total exits (8)**	1660	3577
10	Power of engines replaced with public aid conditional to power reduction		0
11	**Capacity of the fleet on 31/12/2015 (2+6 - 9)**	13 471	44 308
12	**Fleet ceiling on 31/12/2015**	**21 329**	**51 850**

* All exits with public aid were finalised on 2014, thus they do not reflect in total exits of 2015 (line 9).

Section D

Summary of weaknesses and strengths of fleet management system and plans for improvements

The main strength of the Estonian fleet management system is the system of transferable fishing concessions in the form of both ITQ and ITE, which allows owner of the fishing rights to decide when to fish or give the right to someone else, thus helping to optimize the use of fishing opportunities and to help to balance fishing opportunities with the fishing capacity. Allocation of quotas based on historical fishing rights give a certain stability regarding long-term investments. This is also an initiative for the companies to use the optimal number of vessels in order to utilize their fishing possibilities in economically reasonable way. Some technical and administrational issues that complicate data checks between different national registers can be seen as weakness of the fleet management system and different solutions for this are being analysed.

General level of compliance with fleet policy instruments

Entry/exit scheme is fully applied and the fleet ceiling set for the Estonian fishing fleet has not been exceeded.

Section E

Changes of the administrative procedures relevant to fleet management

There were no major changes in the administrative procedures concerning Estonia's fleet management in year 2015.

Section F

Application of the balance indicators

For the calculation of the balance indicators the Guidelines presented with the 02.09.2014 document COM(2014) 545 final are used. Where appropriate, a traffic light system for visualising the results is used. Under the DCF, the data on expenditure, income and capital value for distant water fleet segment (length class VL40XX) is not included as the number of active vessels in this length class is too small and it is not possible to cluster the segment with other fleet segments. Thus, the calculations of economic indicator for the length class VL40XX will not be presented.

As was referred in Section A, there are two clustered fleet segments, VL1824 and VL2440, due to a small number of active vessels. Therefore, for the calculation of economic and vessel use indicators, clustered fleet segments are used, while DCF fleet segments are used for biological indicators. Clustering is possible as vessels in both of these length classes fish in the same area, for the same species and they use the same gear. One vessel in length class VL1218 is excluded from the calculations as this vessel is harvesting only agar-agar (*Furcellaria lumbricalis*). In case the data is available, a time period of 5 years is used for calculating the indicators.

In general, it is important to stress that vessels belonging to the same fishery (i.e. fishing in the same area, for the same species/stocks, using similar gear) should be analysed together as dividing them into smaller subsets (e.g. based on DCF fleet segments) might distort the results.

Biological sustainability indicators

The calculation of biological sustainability indicators is based on the latest data available on STECF JRC web-page (http://stecf.jrc.ec.europa.eu/reports/balance), therefore, the calculations cover only years up to 2014. There is no data for the year 2015 available on this web-page. When comparing different tables on the STECF JRC web-page (for example 2014-06_STECF 14-09 - Balance indicators_all tables_JRC90403.zip and 2015-10_EWG 15-17 - SHI supplementary data.xlsx), it shows that there are, in some cases drastically, different SHI values in the tables. The cause of differences remains unclear and therefore the quality and reliability of the data is questionable. Nevertheless, the tables containing the latest data have been used for the given analysis.

Sustainable Harvest Indicator, SHI

Sustainable Harvest Indicator is given for each DCF fleet segment. According to the Guidelines, SHI > 1 may indicate that fleet segment is relying on a stock of which fishing opportunity is set above MSY if this has occurred in 3 consecutive years. At the same time, with reference to the report on the assessment of balance indicators for key fleet segments and review of national reports on Member States efforts to achieve balance between fleet capacity and fishing opportunities by the Joint Research Centre (STECF-15-15), this statement based on SHI may be interpreted as not being in line with the CFP, which states that the level of maximum sustainable yield shall be achieved by 2020 at the latest for all stocks. Therefore, according to the report, before 2020, an SHI indicator above 1 may reflect political decisions

to reach F_{MSY} not immediately, but by 2020, as long as the target to reach F_{MSY} in 2020 can be achieved.

Table 6. Sustainable Harvest Indicator for each DCF fleet segment in period of 2010-2014.

DCF fleet segment	2010	2011	2012	2013	2014
PG VL0010	0.95	0.75	0.57	0.53	0.74
PG VL1012	0.95	0.75	0.57	0.54	0.75
TM VL1218	1.15	1.03	0.93	1.2	1.18
DTS VL1218	0.94	0.73	0.55	0.59	0.76
TM VL1824	1.2	1.03	0.94	1.15	1.29
DFN VL2440	-[1]	-[1]	-[1]	-[1]	-[1]
TM VL2440	1.2	1.02	0.92	1.16	1.27
DTS VL2440	3.8	0.77	3.38	-[1]	-[1]
VL40XX	-[2]	-[2]	-[2]	-[2]	-[2]

[1] DCF segment DFN VL2440 is a redundant segment as drift nets are banned in the Baltic Sea according to the Council Regulation (EC) 2187/2005. There was only one vessel in DTS VL2440 during 2013-2014.
[2] Insufficient data.

As can be seen from table 6, there are 4 fleet segments which have had values above 1 on a period of 2010-2014. Vessels of these 4 fleet segments – TM VL1218, TM VL1824, TM VL2440 and DTS VL2440 - belong all to the Baltic Sea trawling fleet. Three main stocks targeted by these 4 fleet segments are sprat, Baltic herring in Subdivisions 25-29 and 32, and Baltic herring in the Gulf of Riga. Only stock, which is considered at risk according to data on JRC web-page (2014-06_STECF_14-09_-_Balance_indicators_all_tables_JRC90403.zip) in 2013 in the Baltic Sea was Baltic herring in the Gulf of Riga. There is no data on JRC web-page concerning stocks at risk in 2014. According to the ICES advice for Baltic herring in Subdivisions 25-29 and 32, F_{MSY} was increased from 0.19 to 0.26 in 2013. Based on the F_{MSY}=0.26, fishing mortality has remained well below the F_{MSY} level on all years under review (2010-2014). F_{MSY} for Baltic herring in the Gulf of Riga is 0.35. According to the latest available data from ICES, the level of F_{MSY} was exceeded in 2011 and 2012, but was below F_{MSY} in 2013. F_{MSY} for sprat is 0.29. According to the latest available data from ICES, the level of F_{MSY} was exceeded in 2010 and 2013.

Based on the latest available ICES advice, two species of concern for the Baltic Sea trawling fleet are Baltic herring in the Gulf of Riga and sprat. As can be seen from table 6, there has been no clear trend in three out of four fleet segments - TM VL1218, TM VL1824, TM VL2440 - to indicate of relying on a stock of which fishing opportunity is set above MSY.

The only fleet segment in which SHI indicates relying on a stock fished above MSY for 3 consecutive years was DTS VL2440 from 2010 to 2012. It is important to note that there were only two vessels in that fleet segment from 2010-2012 and only one vessel from 2013-2014. Last vessel remaining in that segment exited the fleet register in mid-2014, thus there are no vessels in that fleet segment anymore.

According to the guidelines, in case of SHI, if more than 60 % of the value of the catch is made up of stocks for which values of F and Fmsy are unavailable the indicator is deemed to be unavailable. In such case, Member States should use available assessment information about one or more species that for reasons of historical abundance or consistency could be considered as indicators of the impact of fishing on an ecosystem. Primary stock harvested by vessels belonging to segment VL40XX during 2010-2014 was Northern prawn (PRA) in the NEAFC waters (Barents Sea). Other main stocks harvested by distant water fishing fleet were Northern prawn in the NAFO RA 3L from 2010-2012 and redfish (RED) in 3M in 2013 and 2014. Concerning Northern prawn in the ICES Subareas I and II, the stock has always been

exploited far below Fmsy according to the latest advice from the ICES (Source: http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/pand-barn.pdf).

According to the 2011 scientific advice for PRA 3L (Source: http://www.nafo.int/science/nafo-stocks.html), biomass levels peaked in 2007 and then decreased substantially through to spring 2011. In order to reduce the risk of the stock falling below B_{lim} it was advised to exercise caution in setting TACs. Estonia's fishing opportunity for PRA 3L declined from 334 tonnes in 2010 to 48 tonnes in 2014. Moratorium was set on the stock in 2015 as the stock situation did not improve. Overall TAC of RED 3M has not changed during 2010-2014. According to the scientific advice given in 2011 and in 2013 for RED 3M, fishing mortality should be kept at its present low level.

Stocks-at-risk indicator, SAR

The Stocks-at-risk (SAR) indicator should give an indication whether a fleet or a fleet segment catches stocks that are considered to be at risk. In that assessment, only stocks at risk that make up for more than 10% of the segment's landed quantities, or from which the segment takes more than 10%, are taken into account. As can be seen from the table 7 below, throughout the observed three years (2011-2013) the only stock at risk was Baltic herring in the Gulf of Riga (according to the data on JRC web-page, 2014-06_STECF 14-09 - Balance indicators_all tables_JRC90403.zip). Data concerning the year 2014 is missing for all fleet segments except PG VL0010 and PG VL1012, making it difficult to make any further conclusions.

Table 7. Fleet segments with SAR indicator valued at 1 in years 2011-2014.

DCF fleet segment	Stocks-at-risk			
	2011	2012	2013	2014
PG VL0010	1	1	0	0
PG VL1012	1	1	1	0
TM VL1218	0	0	0	NA[3]
DTS VL1218	0	0	0	NA[3]
TM VL1824	1	1	1	NA[3]
DFN VL2440[1]	-	-	-	-
TM VL2440	1	1	1	NA[3]
DTS VL2440	1	0	0	NA[3]
VL 40XX[2]	-	-	-	-

[1] See footnote 1 of the table 6.
[2] See footnote 2 of the table 6.
[3] Missing values are due to the lack of data or insufficient data submitted under the DCF to calculate the indicator, or the lack of stock assessment parameters in the case of biological indicators.

Economic indicators

Economic indicators are calculated for the period of 2010-2014 as the DCF data for 2015 is available from the second half of 2016. Two indicators are calculated: return on investment (ROI) showing long-term viability of the fleet and ratio between current revenue and break-even revenue showing short-term viability. For the calculation of ROI indicator, an interest rate of a low risk long term investment has been calculated based on the arithmetic average of Lithuanian and Latvian low risk long term investment interest rates according to the European Central Bank as no harmonised long-term interest rate is given for Estonia.

Return on investment, ROI

Table 8 shows, using a traffic light system, the values of ROI and the indicator in four Baltic Sea segments. As can be seen from the table, length class VL0010 has shown the most stable and profitable economic results. Also the length class VL1012 has shown positive values over the 5 year period and in 2012-2014 has surpassed the value of an interest rate of a low risk long term investment. While the length class VL1218 has shown positive results in 2010-2012, then in 2013 the indicator was below interest rate, but still positive. The value of ROI and indicator of length class VL1218 have become both negative in 2014, which may indicate some problems, but it is not possible to make any conclusions and make hints of over-capitalisation as previous years have shown considerably more positive results. The most negative results for the five year period are in the length class VL2440. Concerning both Baltic Sea trawling segments – VL1218 and VL2440 - it is important to note that most of the fish landed by trawlers is owned by producer organisations in charge of the whole chain from catches to processing to exports, therefore their profits are generated at the export stage and not at the moment of landing.

Table 8. Values of ROI and indicator in length classes VL0010, VL1012, VL1218 and VL2440 in years 2010-2014. According to the Guidelines, green values indicate that extraordinary profits are being generated, orange values indicate possible lack of long-term viability and red indicate possible economic over-capitalisation.

Segment	Year	2010	2011	2012	2013	2014
PG VL0010	**ROI**	9.44	13.86	18.19	10.49	6.71
PG VL0010	**Indicator**	5.19	8.32	13.49	6.9	4.06
PG VL1012	**ROI**	5.25	8.43	14.18	22.75	7.6
PG VL1012	**Indicator**	1	2.89	9.48	19.16	4.95
VL1218*	**ROI**	11.21	22.47	25.6	4.69	-5.29
VL1218*	**Indicator**	4.94	16.93	20.9	1.1	-7.94
VL2440*	**ROI**	3.3	6.31	0.25	5.12	2.83
VL2440*	**Indicator**	-0.78	0.77	-4.45	1.53	0.18
	Low risk long-term interest rate	**4.25**	**5.54**	**4.7**	**3.59**	**2.65**

* DTS VL1218 and TM VL1218 have been clustered together into VL1218, and vessels of length classes VL1824 and VL2440 have been clustered together to form a segment VL2440.

Ratio between current revenue and break-even revenue

For the calculation of BER, opportunity cost of capital is excluded from the calculation, therefore, the indicator shows only the short-term viability of the Baltic Sea fishing fleets. According to the Guidelines, ratio greater than 1 indicates that in short-term the income is sufficient for covering variable and fixed costs, indicating that the segment is profitable. Ratio below 1 can indicate that insufficient income is generated to cover variable and fixed costs. As can be seen from the chart 6 below, during the period of 2010-2014, only once has the ratio been under 1 – in length class VL1218 in 2014. When comparing ratios of ROI and BER, then some general similarities can be seen in the developments in different length classes. For example in 2013, both in short-term (BER) and in long-term (ROI), the indicators suggest that the length class VL1012 is the most profitable.

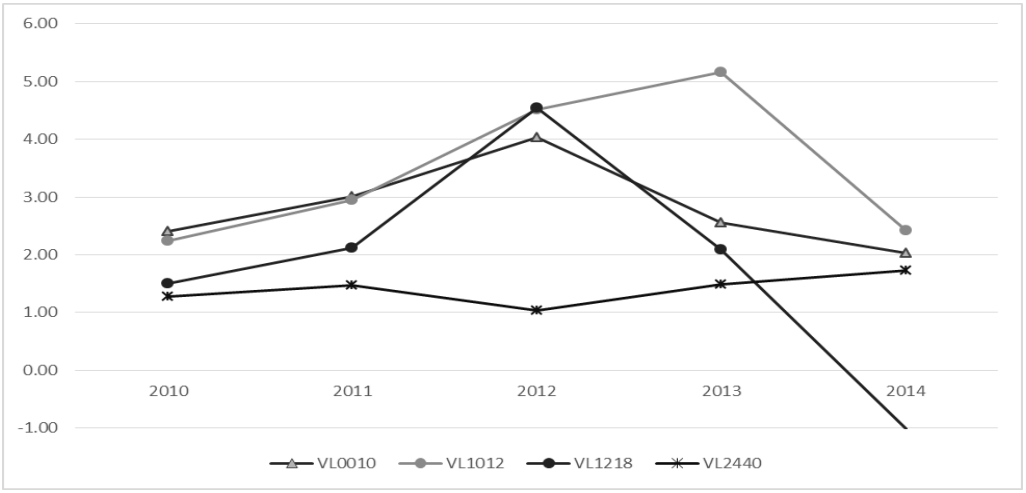

Chart 6. Ratio between current revenue and break-even revenue for years 2010-2014.

Vessel use indicators

The proportion of inactive vessels has been calculated for length classes VL1218-VL40XX only as in coastal fisheries (VL0010 and VL1012) different vessels are used depending on the directed species and fishing gear used. For example, Baltic herring is targeted by coastal fisheries during a relatively short spring season and some of those vessels are not used in other fisheries throughout the year. In addition, fishing in coastal fisheries is an important way to diversify economic activities in peripheral areas and is not always the main economic activity for fishers. Therefore, it is not reasonable to calculate the proportion of inactive vessels in coastal fleet segments PG VL0010 and PG VL1012. For the same reasons the results of the calculation of vessel use indicator in fleet segments PG VL0010 and PG VL1012 should be taken with caution.

Inactive Fleet Indicator

The number of active fishing vessels in length classes VL1218-VL2440 has decreased from 42 in 2011 to 34 in 2015, the number of active vessels in length class VL40XX has decreased from 5 vessels in 2011 to 4 in 2015. There were only 3 inactive vessels in the whole fleet (length classes VL1218-VL40XX) in 2015, two were in length class VL1218 and one in VL40XX. Compared to 2013 the number of inactive vessels has decreased. For example, in 2013 there were total of 6 inactive vessels, all in length class VL1218.

Vessel Utilisation Indicator

For calculation of vessel utilisation indicator, only active vessels, which have had at least one day at sea during a year, are included. For data comparability reasons an observed maximum activity level was chosen for calculations instead of theoretical. The ratio between the average effort per vessel in a fleet segment and the observed maximum effort actually exerted by a vessel in kWdays was found in length classes VL1218, VL1824, VL2440 and VL40XX.

Table 9 shows that the number of average fishing days has fluctuated in all fleet segments. Minimum fishing days has decreased substantially in segment VL1218. This is because of a few underused vessels, which have not been used much because of economic reasons, changes in the ownership or because of major repairs. According to the Guidelines, it is considered normal that 10 % or less of the vessels in a fleet segment are inactive. In 2015, 3 vessels were inactive and three vessels had only 1, 4 and 5 fishing days, respectively. Two of those vessels belonged to segment TM VL1218 and one into TM VL2440. As the number of vessels in a segment VL1218 is low, these two vessels with low fishing activity affect the whole segment. Average fishing days in segment VL1218 are considerably lower than that in VL1824 and VL2440 because these vessels are smaller and the usage of those vessels is more dependent on the weather conditions (e.g. ice, storms). Taking into consideration that the

whole Baltic Sea trawling fleet (VL1218, VL1824 and VL2440) is homogenous, i.e. using the same gear, targeting the same species and fishing in the same areas, then the percentage of inactive (2 vessels) vessels for the whole fleet was 6 % in 2015. The situation has stabilised and become more homogenous concerning active vessels in length class VL40XX in recent years.

Table 9. Minimum, maximum and average fishing days (FD) in length classes VL1218, VL1824, VL2440 and VL40XX in years 2011-2015.

	VL1218			VL1824			VL2440			VL40XX		
Year	Min FD	Max FD	Av FD	Min FD	Max FD	Av FD	Min FD	Max FD	Av FD	Min FD	Max FD	Av FD
2011	8	90	50	68	156	128	16	166	111	175	322	266
2012	9	80	56	103	199	141	7	187	129	4	284	204
2013	42	87	60	70	140	105	8	151	80	162	265	230
2014	1	56	28	83	149	119	15	147	108	283	326	306
2015	1	103	47.5	35	151	123.5	5	179	129.6	292	348	323

The calculation of ratio between the average effort and the observed maximum effort in kWdays for different fleet segments in the period of 2011-2015 is shown in chart 7 below. The Guidelines suggest that ratio below 0.7 should be considered as showing structural overcapacity. The ratios of two length classes – VL40XX and VL1824 have been over 0.7 the whole period of 2011-2015. Ratios of length classes VL1218 and VL2440 have fluctuated more over the period. The ratio of VL1218 in 2014 and 2015 is highly affected by few vessels with a small number of fishing days.

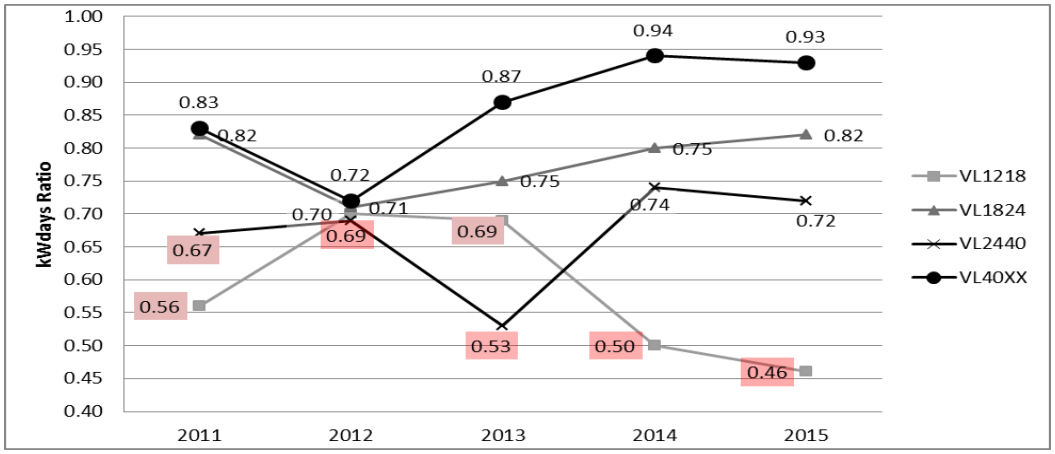

Chart 7. Vessel Utilisation Indicator (ratio in kWdays) for years 2011-2015. Red box around the number may indicate a substantial under-utilisation according to the Guidelines.

For fleet segments PG VL0010 and PG VL1012, the vessel use indicator is given in GTdays. The indicator is low in those segments as fishing is often not the only economic activity and, in case of segment PG VL1012, the main target species is Baltic herring, which is harvested mostly on a relatively short period in spring. Also, fishing in shallow waters can be done without a vessel and fishing in the winter time is generally made without a vessel due to the ice coverage. Large heterogeneity of the vessel use in the segment has a considerable impact on the vessel use ratio especially in PG VL0010. This has been stressed also by STECF (STECF-13-28) that a low vessel utilisation rate for smaller vessels would be expected.

Table 10. Vessel use indicator in GTdays for segments PG VL0010 and PG VL1012 in 2012-2015.

DCF fleet segment	2012	2013	2014	2015
PG VL0010	0.2	0.27	0.19	0.19
PG VL1012	0.3	0.27	0.34	0.57