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Swedish Fleet Capacity Report 2019

According to Article 22 of EC Regulation 1380/2013[1], the EU Member States should annually submit a report on the balance between the fishing capacity of their fleets and their fishing opportunities. Article 22 indicates what type of information and indicators that should be included in the report and the supplementary guidelines (COM(2014)545) provides details on the technical, biological and economic indicators. The guideline states that an assessment of whether imbalance exists in a fleet segment should be based on an overall assessment of the individual indicators. The data presented in this report is segmented in accordance with the Data Collection Regulation (EC) No 1004/2017.

Section A. Description of the Swedish fishing fleet

Table 1 provides a general description of the Swedish fishing fleet for the period 2011-19. During this period, the number of vessels declined by 20%. In 2019, there were 1131 vessels, of which 856 were used for active fishing. Inactive vessels are defined as vessels that did not fish at any time in the year. The overall tonnage declined by 7 thousand tonnes (corresponding to 20% compared to 2011) during the period, and engine power declined by 34,4 thousand kW (corresponding to 18,5 % compared to 2011).

Table 1. The Swedish fishing fleet

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of vessels (units)	1408	1358	1354	1328	1298	1254	1209	1177	1131
of which inactive (units)	343	310	336	308	296	280	298	290	275
Share of inactive vessels	0,24	0,23	0,25	0,23	0,23	0,22	0,25	0,25	0,24
Average age (years), active vessels	31,1	32,0	32,6	33,5	34,1	35,0	35,3	35,8	36,5
Average length (m), active vessels	11,0	10,9	10,8	10,7	10,6	10,4	10,4	10,3	10,4
Tonnage of vessel (1000 GT)	34,6	31,3	30,7	31,4	30,8	31,9	28,2	28,0	27,6
Engine power (1000 kW)	186,4	177,1	174,5	171,1	167,9	170,6	159,3	153,6	152,0

Table 2 gives an overview of the development of the fleet (number of vessels, gross tonnage and kilowatts) between the years 2011 and 2019 for active as well as inactive vessels. The compiled figures show that capacity has generally decreased over the past eight years in terms of the number of vessels, gross tonnage and kilowatts. The decrease has been more marked in some segments.

1 Amending Council Regulation (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulation (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC.

Table 2. Development of the fleet (active and inactive vessels) in the period 2011-2019.

		2011	2012	2013	2014	2015	2016	2017	2018	2019
Vessels per segment, active fleet	Passive gear < 10 m	637	624	612	633	624	609	565	555	528
	Passive gear 10 - <12 m	145	153	148	137	134	128	115	105	104
	Passive gear ≥ 12 m	23	21	17	16	14	13	9	9	11
	Active gear < 12 m	82	79	77	81	78	75	80	78	76
	Active gear 12 – < 18 m	82	78	72	69	71	73	71	69	68
	Active gear 18 – < 24 m	45	46	47	41	41	39	38	39	39
	Active gear ≥ 24 m	51	47	45	43	40	37	33	32	30
Vessels per segment, inactive fleet	< 10 m	291	278	296	263	250	236	252	245	229
	10 - < 12 m	36	25	30	31	33	30	33	33	33
	≥ 12 m	16	7	10	14	13	14	13	12	13
Gross tonnage per segment, active fleet	Passive gear < 10 m	1 996	1 991	1 899	1 875	1 837	1 789	1 666	1 630	1 550
	Passive gear 10 - <12 m	1 634	1 703	1 653	1 528	1 505	1 440	1 287	1 151	1 130
	Passive gear ≥ 12 m	662	518	450	419	362	340	243	244	242
	Active gear < 12 m	906	922	916	958	946	916	1 030	983	959
	Active gear 12 – < 18 m	2 955	2 753	2 599	2 469	2 515	2 565	2 568	2 589	2 547
	Active gear 18 – < 24 m	5 303	5 465	5 573	4 880	4 860	4 591	4 469	4 597	4 628
	Active gear ≥ 24 m	18 020	16 550	15 995	15 940	16 068	15 390	14 787	14 661	14 969
Gross tonnage per segment, inactive fleet	< 10 m	666	607	652	574	536	495	557	524	514
	10 - < 12 m	326	229	271	320	307	295	324	347	359
	≥ 12 m	2 149	602	695	2 478	1 890	4 038	1 235	1 288	701
kW per segment, active fleet	Passive gear < 10 m	34 532	34 465	34 365	33 956	33 821	33 456	31 615	31 186	30 482
	Passive gear 10 - <12 m	19 182	21 033	20 442	19 191	18 566	18 455	17 194	15 766	15 980
	Passive gear ≥ 12 m	4 313	4 034	3 214	2 745	2 426	2 296	1 556	1 575	2 166
	Active gear < 12 m	12 788	12 682	12 288	13 140	12 629	12 032	13 366	12 957	12 622
	Active gear 12 – < 18 m	20 044	18 953	17 475	17 083	17 471	17 705	17 451	17 200	16 398
	Active gear 18 – < 24 m	17 400	17 930	17 938	16 007	16 025	15 236	14 922	15 143	15 367
	Active gear ≥ 24 m	53 627	49 550	47 769	45 798	46 239	44 883	43 684	40 475	40 562
kW per segment, inactive fleet	< 10 m	12 668	12 290	13 243	11 910	11 010	10 177	11 028	11 121	10 489
	10 - < 12 m	5 025	3 573	4 501	4 087	4 745	4 370	4 176	3 993	4 026
	≥ 12 m	6 856	2 543	3 279	7 221	4 983	12 020	4 278	4 183	3 654

The development of landed weight and landed value for the segments over the period 2011-19 are displayed in Table 3. The total weight landed by the Swedish fleet in 2019 was 178 014 thousand tonnes of seafood, with a landed value of 102.566 € million. The total weight and the value of landings vary over the period analysed due to for example variation in quotas, especially the pelagic species since they are the major part of the landings. It can further be observed that vessels with active gears account for the main part of the landed value and the landed weight. During the time period 2011-19, the vessels with active gears annually accounted for 96-98% of the total catch measured in weight, and 86-90% of the total catch value. Thus, the vessels with passive gears only accounts for 2-4% of the total catch measured in weight, and 10-14% of the total catch value. The share of passive vessels production shows a downward trend in both value and weight.

Table 3. Landed weight and value per segment for the years 2011-19.

	Year	Passive gear < 10 m	Passive gear 10 - <12 m	Passive gear ≥ 12 m	Active gear < 12 m	Active gear 12 – <18 m	Active gear 18 – < 24 m	Active gear ≥ 24 m	Total
Landed weight (thousand tons)	2011	2 348	2 797	1 032	1 458	6 704	15 471	147 756	177 565
	2012	2 335	3 043	851	1 509	6 325	15 369	120 414	149 846
	2013	2 246	2 334	816	1 701	6 446	15 420	148 786	177 749
	2014	2 513	2 266	457	2 248	6 446	14 366	143 805	172 100
	2015	2 442	1 992	426	3 288	6 737	15 570	172 240	202 695
	2016	2 321	2 296	386	2 894	7 109	14 437	168 403	197 846
	2017	1 849	1 675	241	3 074	5 139	14 755	194 930	221 663
	2018	1 703	1 867	125	2 864	6 367	13 606	188 151	214 682
	2019	1 492	1 737	290	2 619	3 604	12 335	155 938	178 014
Landed value (thousand €)	2011	9 085	5 820	2 264	5 621	14 863	20 842	69 314	127 808
	2012	9 356	6 947	1 702	6 074	16 217	22 083	66 728	129 106
	2013	9 470	5 663	1 686	6 442	14 939	19 184	69 469	126 854
	2014	9 218	5 466	841	5 960	13 900	16 734	57 015	109 135
	2015	9 072	5 930	770	7 246	15 071	17 968	59 941	115 996
	2016	9 175	6 333	786	6 534	16 091	18 484	68 313	125 716
	2017	7 485	5 001	344	6 585	16 343	18 430	72 964	127 152
	2018	7 526	4 908	233	5 903	15 216	16 235	61 251	111 273
	2019	6 817	5 410	1 072	5 858	13 938	15 999	53 474	102 566

Section B. Effort reduction schemes

B.1 Permits for fishing cod in the Baltic Sea

A special permit is required for vessels longer than 8 meters equipped with cod-catching gears (trawl or passive gears) in the Baltic Sea. Separate fishing permits were introduced for fishing with cod-catching gear in the subareas for the western and eastern Baltic Sea in 2018 (prior to 2018 there was one common permit for the whole Baltic Sea).

On July 23, 2019, the European Commission decided to ban commercial fishing for cod in ICES sub-areas 24-26 as an emergency measure to protect the eastern stock of cod in the Baltic Sea. The decision to stop cod fishing applied during the period 24 July to 31 December 2019.

License holders who during the year only had a fishing permit for cod trawling equipment in the Baltic Sea were given the opportunity to apply to fish for sea lobster with bottom trawl equipped with a sorting grid in the North Sea, because of the emergency measure to ban commercial fishing for cod in ICES sub-areas 24-26.

B2. Permits for cod catching gears in Skagerrak, Kattegatt and the North Sea

A special permit is required for cod-catching gears (including passive gears with vessels 10 meters and longer) in Skagerrak, Kattegatt and the North Sea. Within the system of annual individually allocated demersal fishing opportunities applied since 2017, applications for new permits are tested each year.

As mentioned above license holders who during the year 2019 only had a fishing permit for cod trawling equipment in the Baltic Sea were given the opportunity to apply to fish for sea lobster with bottom trawl provided with sorting grid in the North Sea, because of the emergency measure to ban commercial fishing for cod in ICES sub-areas 24-26. Three license holders who had a trawl fishing permit for cod catching gear in the Baltic Sea were granted a fishing permit for sea lobster with a bottom trawl with a sorting grid in 2019. They did however not use their permits and did not thus not fish in the Skagerrak, Kattegatt and the North Sea in 2019.

Other than that, no new permits were accepted for cod catching gears in Skagerrak, Kattegatt and the North Sea in 2019 due to the scientific catch estimations (considering mixed-fisheries) and the level of the Swedish fish quotas.

B.3 Permits for fishing for northern prawn

Due to the stock situation for northern prawn, no new fishing permits for northern prawn were issued for 2019. The number of permit holders in this fishery has been constant at 62 for many years.

Section C. Entry/exit schemes

In order to counteract an increase in capacity in the fleet, entry and exit schemes are applied in accordance with EU requirements. These rules specify that the entry of new capacity is only possible if at least the same capacity is offset. Thus, the vessel capacity entered in the Swedish fishing fleet during the year is offset by the exit of at least the equivalent amount of vessel capacity. Withdrawal is a condition for fishermen to be granted a fishing licence, and vessels may only be used for commercial sea fishing if they have a licence.

The capacity limits for Sweden laid down in Annex II of Regulation (EU) No 1380/2013 is 43 386 GT and 210 829 kW. As can be seen in table 1, Sweden is well below this limit.

Section D. General fleet management: strengths and weaknesses

New system with annual individual fishing opportunities in the demersal fisheries from 2017

With background of the needs created by the landing obligation, the Swedish Agency for Marine and Water Management (SwAM) in 2017 introduced a system with individual annual fishing opportunities that can be temporarily transferred between fishermen during the year. The individual allocations are, with some exceptions and adjustments, based on reported catches during the reference period 2011-14. The design of the system pays particular attention to small-scale coastal fisheries fishing with passive gears for which unallocated quotas are reserved. The new system means increased flexibility and better possibilities for individual fishermen to adjust their fishing opportunities during the year, which probably gives them better possibilities to comply with the landing obligation. The first year with the new system was by SwAM in 2018. The evaluation showed, among other things, that the number of quota transfers was high already the first year. At the same time trade frictions existed (e.g. difficulties to find someone who could transfer fishing opportunities). There are also other challenges connected with the system. Although the system allows for increased flexibility, quotas may still be limiting at the individual level.

Given economic incentives to maximize the value of the own fishing opportunities, this may affect compliance as it creates incentives for high-grading and discard of unwanted by-catches. Another concern is that since the fishing opportunities are only annual, fishermen face uncertainty about what fishing opportunities and income they will have the coming years. A further challenge is that various “lock-in” effects can be observed in the present system. In case the system would be adjusted to allow for longer-term fishing rights, the design of such system is of critical importance in order to avoid unwanted effects. During 2019, the SwAM started to investigate whether a system of fishing rights (i.e. fishing opportunities with a longer duration than one year) should be implemented also in the demersal fisheries. This investigation continues in 2020 the SwAM is to evaluate the current annual system and to suggest improvements.

The pelagic system was extended for 10 years

During 2019, the SwAM has decided to renew the transferable fishing rights for pelagic fishing for another 10 years. The pelagic quotas have been allocated since 2009 between fishing rights, annual pelagic fishing opportunities, regional fishing opportunities and coastal quotas in accordance with a Transferable Fishing Rights Law (2009: 866). In July 2019, SwAM submitted a proposal for adjustments. SwAM has decided on changes in the regulations from November 1, 2019. The changes in the pelagic system decided mainly concern the size of the coastal quotas, transferable fishing rights for herring and sharp herring in ICES sub-areas 30-31 (the Bothnian Sea and the Gulf of Bothnia) and the introduction of regional allocation in ICES subareas 30-31.

Section E. General administrative procedures

New system to allocate demersal fishing opportunities and related administrative adjustments

As mentioned above, a new system to allocate fishing opportunities was introduced on January 1 2017 for the Swedish demersal fisheries. As the new system is based on annual individual fishing opportunities that may be transferred between fishermen during the year, its introduction required substantial adjustments in the administrative procedures. These adjustments include for example adjustments in the quota deduction system and the introduction of an e-service (Fiskerätt) where the fishermen can administrate their applications for transfers of fishing opportunities. During 2019, SwAM has worked on automatisation of the calculation procedure of the individual fishing allocations.

Maximum allowed levels of fishing opportunities

In the system of annual individually allocated fishing opportunities introduced in 2017 in the demersal fisheries, some limitations to the possibility to transfer fishing opportunities among fishermen was introduced as a part of the system. For example, it is not possible for an individual licence/permit holder to have a quantity of a certain species/quota that exceeds a certain maximum level. The purpose of this regulation is to avoid that fishing opportunities get concentrated on too few actors. For example, no license holder may have fishing opportunities of nephrops in Skagerrak/Kattegatt corresponding to more than 6% of the total individually allocated quantity of the nephrops quota.

Section F. Balance Indicators

F1. Biological indicators

The current guidelines (COM(2014) 545) states that two biological indicators should be considered: *the sustainable harvest indicator (SHI)* and *the stock at risk indicator (SAR)*. The Commission arranges the calculation of these indicator values which are based on DCF data and assessments by ICAs and STECF. The calculated values (which are not updated every year) are then provided to the member states to be included in their national fleet reports. The calculated values are accessible at http://stecf.jrc.ec.europa.eu/reports/balance. Values of the indicators are now available until 2018 and are summarized in Table A1 in the Appendix. STECF has raised several issues with the current indicators that we shortly mentioned below.

Sustainable harvest indicator (SHI)

The SHI indicator reflects "the extent to which a fleet segment is dependent on overfished stocks". "Overfished" means in this context that a stock is fished above F_{msy} (the fishing mortality rate corresponding to maximum sustainable yield). As noted by STECF (STECF-18-14, p 221), values greater than 1 thus may reflect that the MSY-goal (which according to the CFP shoud be achieved by 2020) is not yet achieved and that some quotas are still set at a higher level than F_{msy} as a result of political decisions.

The indicator is a weighted average of the ratio F/F_{msy}, where F is the fishing mortality and F_{msy} is the fishing mortality corresponding to MSY (maximum sustainable yield). This ratio calculated for the different stocks that the segment makes catches from, which are then weighted together to one single indicator using the value of landings as weight. A value less than one is considered as an indication of a sustainable exploitation of the stock and a value higher than one is as a sign of overfishing of the stock. The indicator covers only stocks for which fisheries management is based on target levels expressed as fish mortality (other targets are used for other species), which is a shortfall of this indicator.

Among the Swedish fleet segments using active gears, the SHI indicator for 2018 is above one for pelagic trawlers (TM), but generally not for demersal trawler (DTS). High values of the SHI in 2018 are also found among some segments with passive gears. In order to relate the SHI-indicator to the segments share of total catches, it should be noted that the passive gears accounted for 2-4% of the total catch measured in weight during the time period 2011-19. In addition to these factors, there are several uncertainties and shortcomings connected with the SHI-indicator which are discussed in various STECF reports, for example in STECF-15-02[2] and STECF-18-14.

Stock at risk indicator (SAR)

A further, complementary, biological indicator is the *stock at risk indicator*. This indicator is a measure of how many stocks affected by the fleet segment's activities are biologically vulnerable. According to the guidelines, there is a potential capacity

[2] Scientific, Technical and Economic Committee for Fisheries (STECF) – 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 (STECF-15-02). 2015.
Publications Office of the European Union, Luxembourg, EUR 27134 EN, JRC 94933, 147 pp.

imbalance if a fleet segment takes more than 10% of its catches from high-risk stock or if the fleet segment takes more than 10% of its total catch from the stock. According to the calculation method presented in the guidelines, the stock at risk indicator has a value higher than 1 if a fleet segment takes more than 10% of its catches from a high-risk stock or if the fleet segment takes more than 10% of its total catch from the stock. A comparison of this indicator for the various segments in the Swedish fleet is presented in Table A1. It can be noted the indicator has a value of 1 or higher for 10 segments (both active and passive gears).

F2. Economic indicators

Return on Investment / Return On Fixed Tangible Assets' (ROFTA)

The indicator for return on investment, or *Return On Fixed Tangible Assets (ROFTA)*, is presented in Table 4. This indicator shows the return on fixed tangible assets and should be greater than zero. It should also be compared with (and be greater than) long-term risk-free interest. It should be noted that labour costs do not include owners' withdrawals from sole proprietorships, implying an undervaluation. At the same time, it should be recalled that the total revenue includes not only the total landed value, but also revenue from trading fishing rights as well as other revenues, contributing to overvaluation.

Table 4. Return on fixed tangible assets (ROFTA) 2011-2018

Value for one calendar year (%)	2011	2012	2013	2014	2015	2016	2017	2018
Passive gear < 10 m	-50,2	-43,2	-48,8	-53,1	-49,0	-51,9	-61,1	-51,0
Passive gear 10 - < 12 m	-14,2	-7,6	-14,2	-6,5	7,9	0,3	-6,8	-1,3
Passive gear ≥ 12 m	-7,6	7,1	-4,9	-24,0	-20,5	-18,7	-30,4	-33,3
Active gear < 12 m	23,1	6,1	17,7	6,0	17,5	42,1	7,5	23,7
Active gear 12 – < 18 m	38,3	26,5	23,8	40,0	54,7	72,9	81,5	77,1
Active gear 18 – < 24 m	5,6	6,4	9,0	4,4	6,1	10,7	11,9	19,2
Active gear ≥ 24 m	25,3	35,6	39,8	20,3	21,9	56,1	45,9	9,2
Long-term risk-free interest (%)	1.0	1.0	1.0					

1) Labour costs do not include owners' withdrawals from sole proprietorships

All segments using active gears achieve a positive return on invested capital for 2018 and for the years before. However, it should again be noted that total revenue includes all revenue and not just landed value. As a complement to Table 4, Table 5 provides an overview of total revenue in the various segments over the period 2011-2018.

Table 5. Total revenue over time 2011-2018 (thousand €)

	2011	2012	2013	2014	2015	2016	2017	2018
Passive gear < 10 m	9 903	10 443	10 263	10 191	9 844	9 899	7 953	7 245
Passive gear 10 - < 12 m	6 308	7 625	6 244	6 085	6 592	6 838	5 462	5 835
Passive gear ≥ 12 m	2 285	2 024	1 719	860	779	795	351	1 078
Active gear < 12 m	6 413	6 585	7 320	6 604	8 124	7 668	7 342	6 557
Active gear 12 – < 18 m	16 693	17 411	16 088	15 071	16 435	17 753	18 021	15 541
Active gear 18 – < 24 m	21 968	23 493	20 486	18 027	18 870	19 027	19 316	16 916
Active gear ≥ 24 m	73 653	76 597	75 211	64 019	63 456	69 606	76 278	56 807
Total	137 222	144 179	137 330	120 858	124 099	131 585	134 722	109 979

Ratio of current revenue to break-even revenue

The other economic indicator, *current revenue against break-even revenue,* points to economic overcapacity if its value is below 1 since this means that current revenue does not cover costs (i.e. fishing is not economically viable). As can be seen in Table 6, all segments using active gears display a break-even revenue greater than 1 for 2018. The pattern is similar in previous years.

Table 6. Current revenue against break-even revenue 2011-2018.

Value for one calendar year (%)	2011	2012	2013	2014	2015	2016	2017	2018
Passive gear < 10 m	-0,6	-0,3	-0,4	-0,4	-0,3	-0,3	-0,7	-0,4
Passive gear 10 - < 12 m	0,5	0,7	0,5	0,8	1,2	1,0	0,8	1,0
Passive gear ≥ 12 m	0,7	1,2	0,8	0,3	0,4	0,4	0,1	-0,1
Active gear < 12 m	1,7	1,2	1,5	1,1	1,6	2,4	1,3	1,8
Active gear 12 – < 18 m	2,1	1,7	1,6	2,0	2,4	2,7	3,1	3,1
Active gear 18 – < 24 m	1,1	1,2	1,2	1,1	1,2	1,3	1,4	1,5
Active gear ≥ 24 m	1,9	2,3	2,3	1,7	1,9	3,0	2,8	1,4

The economic indicators reported in Tables 4 and 6 therefore seem to, at a first sight, indicate a degree of overestablishment in the segments with passive gears. However, it should be recalled from Table 3 that these segments account for a very small share of the total Swedish catches and therefore does not use the accessible fish resources to a major extent. Moreover, the operators within these segments are often engaged in part-time fishing, whereby fishing is not sole source of income of the operator. It should also be noted that there are considerable differences within the segments.

F3. Vessel use indicators

Share of inactive vessels

The share of inactive vessels may be regarded as unutilised capacity and is therefore considered as an indicator of vessel use. The share of inactive vessels was 24% in 2019 (see Table 1). The guideline states that the critical threshold level is 20%. Thus, the overall share of inactive vessels exceeds the critical value. However, to be able to make a meaningful assessment of this indicator it is necessary to consider how the inactive vessels are distributed among different segments. Therefore, Table 7 displays the number of inactive vessels stratified by length (<10 meters, 10-12 meters, and >12 meters) and Table 8 shows the share of inactive vessels for vessels below and over 12m. As can be seen in Table 7, the majority of the inactive vessels are vessels shorter than 12 meters. In Table 3, it can be noted that this part of the fleet account for a very small share of the total catches. When considering only vessels longer than 12 meters, the share of inactive vessels was only 5% in 2019, which is well below the critical level of 20%.

Table 7. Number of inactive vessels by length group.

	Number of inactive vessels per year								
Segment	2011	2012	2013	2014	2015	2016	2017	2018	2019
<10m	291	278	296	263	250	236	252	245	229
10-<12m	36	25	30	31	33	30	33	33	33
≥12m	16	7	10	14	13	14	13	12	13
Total sum	343	310	336	308	296	280	298	290	275

Table 8. Share of inactive vessels for vessels shorter and longer than 12 meter.

	Share of inactive vessels per year								
Segment	2011	2012	2013	2014	2015	2016	2017	2018	2019
<12m	0,27	0,26	0,28	0,26	0,25	0,25	0,27	0,27	0,29
≥12m	0,08	0,04	0,06	0,08	0,08	0,09	0,09	0,08	0,05

Average days at sea to maximum days

A further indicator of vessel use is the ratio of average days at sea to maximum days at sea. According to the guidelines, a value continually below 0.7 indicates structural overcapacity.

In previous years, the values of this indicator lied above the critical threshold for the segments of vessels greater than 18 m, whereas values below the critical value have been observed for the segments of vessels shorter than 18 meters (for the estimates based on the 90% percentile). In 2019, values slightly below (but very close to) the critical level are observed also for segment of vessels using active gears between 18 and 24 m.

One likely explanation for the slightly lower values in 2019 is the emergency measures decided by the Commission on July 23 2019 to ban commercial fishing for

cod in most of the Baltic Sea until 31 December 2019, in order to save the ailing eastern Baltic cod stock from impending collapse.

It should also be noted that the Guidelines for the analysis of the balance between fishing capacity and fishing opportunities[3] states that "*The chosen indicator should be presented and assessed for a period of several years in order to show whether the ratios are stable over time*" (page 16). The lower values for vessels between 18 and 24 meters are only observed in 2019.

It is furthermore important to note that the number of possible fishing days is strongly affected by factors such as available quotas, fishing seasons, geographical conditions, weather and management scheme. The last mentioned factor implies that fishermen with individual quotas are restricted by their allocation of quota. This means that it is necessary to interpret this indicator with caution.

According to the figures presented in Table 3, the passive and active segments under 18 meter together accounted for less than 10% of the total catches in 2019. Thus, these segments account for a small share of the total catches.

It finally be noted that there is sometimes a large spread within each segment.

[3] https://ec.europa.eu/transparency/regdoc/rep/1/2014/EN/1-2014-545-EN-F1-1.Pdf

Table 9. Average days at sea to maximum days at sea ratio (year 2019, 2018 and 2017)

			Maximum Effort		Exploited capacity (share)	
Year	Segment	Number of vessels	Days	Days*	Share	Share*
2019	**Passive gear < 10 m**	528	220	128	0,27	0,46
	Passive gear 10 - < 12 m	104	220	161	0,33	0,46
	Passive gear ≥ 12 m	11	220	101	0,25	0,55
	Active gear < 12 m	76	220	112	0,24	0,47
	Active gear 12 – < 18 m	68	220	159	0,38	0,53
	Active gear 18 – < 24 m	39	220	203	0,64	0,69
	Active gear ≥ 24 m	30	220	245	0,89	0,80
2018	**Passive gear < 10 m**	555	220	126	0,27	0,47
	Passive gear 10 - < 12 m	105	220	158	0,34	0,47
	Passive gear ≥ 12 m	9	220	148	0,39	0,58
	Active gear < 12 m	78	220	132	0,26	0,43
	Active gear 12 – < 18 m	69	220	160	0,43	0,59
	Active gear 18 – < 24 m	39	220	189	0,66	0,77
	Active gear ≥ 24 m	32	220	215	0,84	0,86
2017	**Passive <10m**	565	220	122	0,28	0,51
	Passive 10-12m	115	220	142	0,31	0,48
	Passive >12m	9	220	104	0,42	0,89
	Active 10-12 m	80	220	123	0,26	0,47
	Active 12-18 m	71	220	147	0,41	0,62
	Active 18-24 m	38	220	180	0,69	0,84
	Active >24m	33	220	238	0,93	0,86

* Estimated on the basis of 90% percentile

Executive summary and conclusions

In accordance with the guidelines, this report contains technical, biological and economic indicators in order to assess whether balance between capacity and fishing opportunities exist in the Swedish fishing fleet. Several issues have been raised by STECF regarding these indicators and to what extent the technical and economic indicators are relevant for small scale segments, which we consider in our conclusions (see for example STECF-18-14).

With regard to the ***economic indicators***, *return on investment* and *current revenue to break-even revenue*, values below the according to the guidelines critical threshold can be observed for the segments with vessels fishing with passive gears.

The first ***technical indicator*** (***vessel use indicator),*** *average days at sea to maximum days at sea ratio*, displays values close to or below the critical level for the segments of vessels shorter than 24 m 2019. In the previous years, however, the indicator did not show critical values for vessels longer than 18 m (for the values estimated on the 90% percentile). This may partly be due to the emergency

measures in the Baltic Sea in July 2019. The other vessel use indicator, *share of inactive vessels*, was 24% in 2019 (average whole fleet), which is above the critical threshold of 20%. However, when considering only vessels longer than 12 meters, the share of inactive vessels was 5% in 2019. This is well below the critical level.

The economic and technical indicators thus do generally not display critical values for the segments using active gears, with the exception that the indicator *average days at sea to maximum days at sea ratio* is slightly below (but very close to) the critical level for the segment of vessels between 18 and 24 m in year 2019.

When it comes to the critical levels that can be observed for the economic and technical indicators for the small scale segments fishing with passive gear, it is necessary to keep in mind that these segments account for a very small share of the total catches. They do thus not use the accessible fish resources to any major extent (see figures in Table 3). Moreover, the operators within these segments are often engaged in part-time fishing. The issues have also been raised by STECF in their different reports. In for example STECF-18-14 (p 226), it is recognized that assessment of economic and technical indicators is challenging for the small scale fleet segments. For example, economic indicators presume that fishing activity is the main activity of the fleet segment being assessed which is often not the case for small scale fishing fleets. This means that the critical values observed for the small scale segments using passive gears not necessarily should be interpreted a sign of imbalance.

Catches of cod in the Baltic Sea, both among those fishing with active and passive gear, have significantly decreased in recent years, which is probably due to difficulties in obtaining profitability in the fishery (which in turn is due to the poor condition of the stock). In 2019, an emergency measure was introduced when fishing for cod in the southern Baltic was stopped. During 2020, it is prohibited to have directed fishing of cod in areas 24-32 throughout the year. In addition, it is a closure which means that all fishing in the cod's core areas is prohibited for different periods in 2020. The fishing stop affects the fishermen who fish for cod in the Baltic Sea but also vessels fishing for herring in the affected areas. In the current situation with cod fishing stops in the Baltic Sea, it is probably difficult for most of the cod fishing vessels affected by the stop to replace this fishing with other fishing, although there are some opportunities.

In several different segments, in addition to cod fishing, there is fishing capacity that is not fully utilized due to various reasons. In the shrimp fishery there are so-called quota boats that are retained in the fleet because the system of annual fishing opportunities does not allow transfers of fishing opportunities to another vessel in the long term. Much of the fishing that is done with passive gear is probably conducted to a great extent as part-time fishing, which means that fishing capacity is not fully utilized but at the same time does not entail the risk of overfishing / overfishing.

The average age of fish license holders is high and many are over the retirement age. Of the Swedish fishing licences in 2019, 33% were held by fish license holders over the age of 65 and 47% were held by fish license holders over 60 years. The average age of the Swedish fishing license holder is around 60 years.

The **biological indicators** are now available until 2017. The *biological indicator SHI* (sustainable harvest indicator) is for some Swedish fleet segments above one. The high values of the SHI indicator are mainly found among the segments with passive

gears, but also for some segments with pelagic trawlers. One factor to consider when interpreting the SHI indicator is the segments' share of total catches. During the time period 2011-19, the passive gears annually accounted for 2-4% of the total catch weight. Furthermore, in *STECF-15-02*[4]*,* STECF comment on the uncertainties connected with the interpretation connected with the SHI-indicator: *"…a SHI value greater than one, only indicates a fleets reliance on stocks that are over exploited, not how much they contribute to the overall fishing mortality, which may be of more interest to managers*" (STECF-15-02, p 13). The other biological indicator, *stocks at risk (SAR)* shows that around 10 segments have a value above one, including segments with both active and passive gears.

It should be noted that the biological indicators are connected with shortcomings and uncertainties that has been raised in for example STECF-15-02 and STECF-18-14. In STECF-15-02, it is noted that: *"…if Member States' assessment of whether a fleet segment is out of balance with fishing opportunities was based primarily on the SHI, their assessments may be questionable and any associated action plan may be inappropriate or undesirable."* (STECF 15-02, p 10).

It should finally be noted that the segmentation used (which is in accordance with the Data Collection Framework) affects the conclusions allowed to be drawn. Any conclusion regarding whether inbalance exist in various segments depends not only on what indicators are used but also on how the segmentation is done. Moreover, the indicators and methods of calculation used allow for further interpretations and discussion, which limits the possibility to make comparisons with other Member States.

[4] Scientific, Technical and Economic Committee for Fisheries (STECF) – 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 (STECF-15-02). 2015.
Publications Office of the European Union, Luxembourg, EUR 27134 EN, JRC 94933, 147 pp.

Appendix A1: Biological indicators (available at https://stecf.jrc.ec.europa.eu/reports/balance, STECF 2019-13 - Balance Indicators Table 2019)

		Total number of vessels											SAR										Status 2017*	SHI											Status 2017*
Fishing tech	Vessel length	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend (5%)	
DFN	VL0010	267	267	239	239	239	238	252	253	258	224	216		2	2		4			2	2	2	out of balance	3,2	2,97	3,12	2,62	2,4	2,41	2,28	2,44	2,58	1,77	1,33	decreasing	
DRB	VL0010	2	2	2	1				1																										-	
DTS	VL0010	10	12	18	22	22	20	21	22	22	23	20				2		2	2	2	2	2	out of balance	0,52	0,53	0,55	0,58	1,1	0,86	0,55	0,46	0,58	0,53	0,58	decreasing	in balance
FPO	VL0010	364	372	367	346	326	321	328	312	298	305	291	1	1	2	2	2	1	1	1	1	1	out of balance	0,53	0,53	0,53	0,52	1,09	0,75	0,41	0,27	0,4	0,32	0,46	decreasing	
HOK	VL0010	31	26	16	20	23	21	17	17	19	13	26					2					2		2	1,83	3,84	0,63	1,27	2,73	1,23	0,9	0,98	0,97	1,26	decreasing	
PGO	VL0010	1	2	1		1		2	1	2	2	3		1											0,41	0,4							0,32		-	
PGP	VL0010	30	25	33	32	35	32	34	41	32	21	19			1			2						1,26	0,64	0,58	1,17	0,68	0,76	0,68	0,48	0,52	0,6	0,6	no trend	
PMP	VL0010	8	3	3	5	2	4	3						1										0,71	0,61	1,01	0,82	0,57	0,86	0,46					-	
PS	VL0010	2	2	1	2	1		1	1																		0,49								-	
DFN	VL1012	108	109	98	91	94	99	93	89	84	72	64		4	4	2	6	2	2	4	4	4	out of balance	3,04	2,91	3,19	2,86	2,57	3,3	2,86	2,89	2,56	1,78	1,37	decreasing	out of balance
DRB	VL1012			1																															-	

DTS	VL1012	51	53	48	49	51	51	54	49	49	52	54												0,55	0,55	0,54	0,57	1,09	0,83	0,53	0,43	0,52	0,56	0,69	decreasing	in balance
FPO	VL1012	30	28	29	29	34	32	28	34	32	35	32			2	2	2	2	2		2	2	out of balance	0,5	0,5	0,49	0,5	1,08	0,74	0,4	0,28	0,41	0,33	0,47	decreasing	in balance
HOK	VL1012	19	18	15	23	17	13	11	9	11	7	8			2		4			2	2	2	out of balance	3,71	3,98	2,75	2,59	3,06	4,18	0,86	1,51	1,73	1,87	1,43	decreasing	
MGP	VL1012										1																								-	
PGO	VL1012	1				1																													-	
PGP	VL1012	1	4	3	2	7	4	5	2	1	1	1				2	2		2						1,57	0,4	0,45	1,09	0,74		0,78				-	
PMP	VL1012	1	2	1	2	2	1		1					2	2	2								0,49	0,49	0,48	0,49	0,91	0,76		0,52				-	
PS	VL1012		1	1	1	1	1	1	1	1	1	1													0,86	1,01	0,79	0,57	0,51	0,74	1,02	1,21	1,12	1,3	increasing	out of balance
TM	VL1012							1	3	3	3	3																		0,8	1,05	1,2	1,12	1,28	increasing	out of balance
DFN	VL1218	19	15	15	13	13	14	12	12	11	7	8		4	4	2	6			2	2	2	out of balance	3	2,28	2,31	2,1	1,99	2,41	2,97	2,98	2,68	2,16	1,44	no trend	out of balance
DTS	VL1218	106	102	89	80	76	71	67	68	71	70	67					2							0,8	0,77	0,72	0,89	1,19	1,03	0,89	0,67	0,72	0,67	0,72	decreasing	in balance
FPO	VL1218	4	3	3	4	3	1	2	1	1	1	1												0,64	0,56	0,49	0,49	1,08	0,73	0,39	0,26	0,39	0,32	0,51	decreasing	in balance
HOK	VL1218	3	3	3	5	4	2	2	1	1	1		2	4	5	2	4							2,08	2,18	1,97	2,1	2,2	4,34	3,61	3,39				-	
PGO	VL1218					1																													-	

PMP	VL1218	1				1			1																0,5				3,35							-	
PS	VL1218	2	2	3	2	1	1	1	1	1	1	1													0,97	0,87	0,96	0,79	0,57	0,51	0,74	1,02	1,21	1,12	1,3	increasing	out of balance
TM	VL1218	1						1	1	1		1													1,02						2,9	3,16	2,95		1,39	-	
DTS	VL1824	62	61	51	44	46	44	37	37	36	35	36					4	2	2	2	2	4	out of balance	1,21	1,06	0,98	1,3	1,26	1,15	1,13	1,04	0,98	0,98	0,98	decreasing	in balance
HOK	VL1824	1	1		1										1																				-	
PMP	VL1824	1																						3,73											-	
PS	VL1824	1																						0,59											-	
TM	VL1824	1	1		1		3	4	4	3	3	3												1,42	1,38		1,17		1,42	1,18	1,17	1,2	1,14	1,28	decreasing	out of balance
DFN	VL2440	1																																	-	
DTS	VL2440	33	31	31	32	28	26	24	21	17	16	14			2		8							1,16	0,99	0,9	1,18	1,24	1,14	1,22	1	1,09	1,19	1,26	no trend	out of balance
HOK	VL2440	1																																	-	
MGP	VL2440			1			1	1						8			2									0,75			0,89						-	
PS	VL2440	1			1	1									4	2								1,02			0,93	0,8							-	
TM	VL2440	18	15	12	9	9	9	9	8	9	7	9		8	4	2	10	7	8	2	5	4	out of balance	1,17	1,14	1,11	1	0,88	1,03	1,16	1,18	1,08	1,09	1,19	no trend	out of balance
MGP	VL40XX			1	1		1							8	4		2									0,83	0,92		0,98						-	

PS	VL40XX	1						1	1	2		1						2	8	2		2		1,01						0,83	0,77	0,86		1,01	-	
TM	VL40XX	13	13	11	8	9	8	8	10	9	10	8		8	2	2	10	7	8	8	5	4	out of balance	1,09	1,15	1,16	1,02	0,91	1,07	1,07	1,1	1,02	1,05	1,17	no trend	out of balance

1) TBB=Beam trawl, DTS=Demersal trawl and demersal seiner, PTS=Pelagic trawls and seiners, DRB=Dredges, MGP=Polyvalent mobile gears, MGO=Other mobile gears, PG=Passive gears, HOK=Gears using hooks, DFN=Drift nets and fixed nets, FPO=Pots and traps, PGP=Polyvalent passive gears, PMP=Combining mobile and passive gears, PS=purse seines, TM=pelagic trawlers.