

2022 ANNUAL REPORT LITHUANIA

On sustainable balance between fishing capacity and fishing opportunities May 2024

Introduction

This Report is prepared in accordance with Regulation (EU) No 1380/2013 of the Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy (hereinafter – Regulation (EC) No 1380/2013) and with 2014 Guidelines for the analysis of the balance between fishing capacity and fishing opportunities according to Art 22 of Regulation (EU) No 1380/2013 of the European Parliament and the Council on the Common Fisheries Policy.

The report presents the current state of Lithuanian national fisheries fleet management measures and actions to achieve sustainable balance between fishing capacity and fishing opportunities.

1. General information

1.1 Description of fishing fleet

Lithuanian fisheries fleet is divided in three basic groups based on fishing grounds.

The first group of Lithuanian fishing fleet operates in the coastal area of the Baltic Sea (Coastal fleet). Coastal fleet is composed of fishing boats in length less than 12 meters and the main engine power of 110 kW or less.

The second group of Lithuanian fishing fleet operates outside the Baltic Sea coastal area with vessels of 12 meters in length and more (Baltic fleet) which dominant main engine power is 165 – 800 kW.

The third fishing fleet group operates mainly in waters of Eastern Arctic, North-Western waters, West African waters, CECAF, SPRFMO, NAFO and NEAFC (Distant fleet). This group is composed of fishing vessels with length more than 40 meters.

1.2 Development of fishing capacity

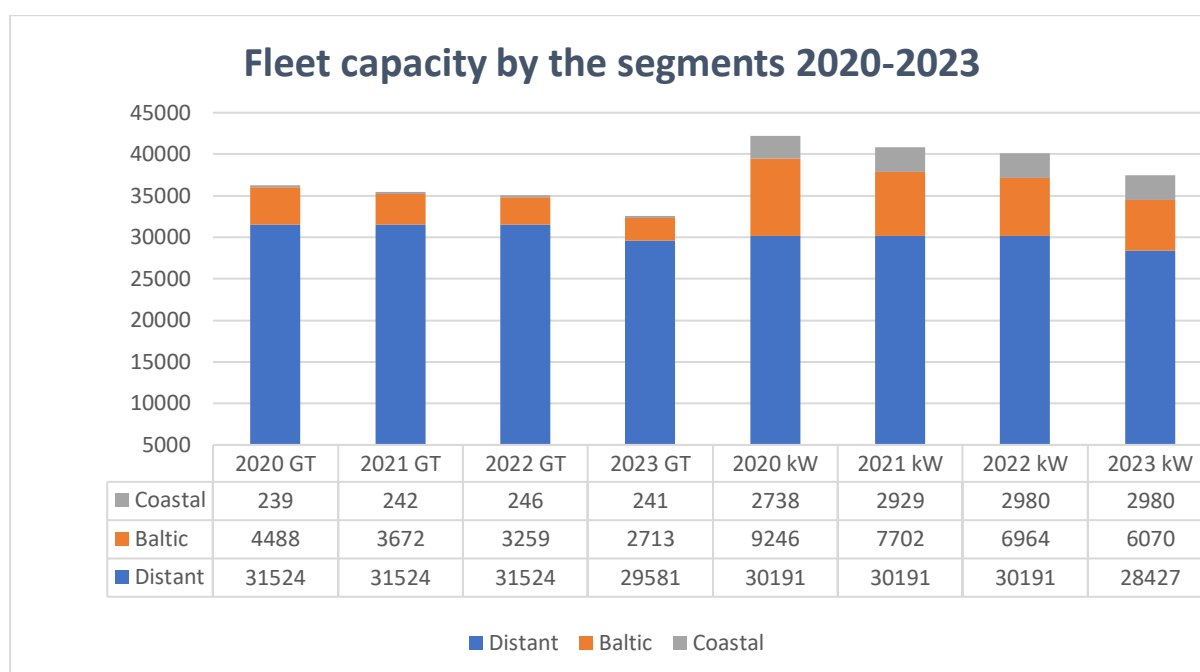
By the end of 2023 Lithuanian fishing fleet consisted of 117 (5 vessels – Distant fleet, 13 – Baltic fleet and 99 – Coastal fleet) vessels with total capacity of 32535 GT and 37477 kW.

During the reporting period Lithuanian fishing fleet has decreased in total by 8 vessels with accumulative capacity of 2494 GT and 2658 kW.

Statistics of specific group of the fishing fleet shows that:

- One (1) fishing vessel with the capacity of 1943 GT and 1764 kW left the Distant fleet;
- four (5) fishing vessels belonging to the Baltic fleet has been registered out with the total capacity of 546 GT and 1047 kW, and one vessel increased its fishing capacity by 153 kW;
- although the Coastal fleet lost in total 2 vessels (4 vessels have been registered out and 2 vessels have been registered in), however the fishing capacity has slightly decreased only by 5 GT.

The distribution of total fleet capacity by the three basic segments is shown in Figure 1.1.



1.3 Impact of fishing effort reduction schemes

During the year of 2023 there were no fishing effort reduction schemes introduced either for Lithuanian fisheries fleet or in the waters of jurisdiction of Republic of Lithuania.

1.4 Compliance with entry/exit scheme and with level of reference

Lithuania applies entry/exit scheme as defined in Regulation (EC) No 1380/2013 Article 23.

The ceiling set out in Annex II of the said Regulation has not been exceeded.

Last year no public aid was granted neither for entry of new fishing capacity into nor for the withdrawal from the Lithuanian fishing fleet.

In the reporting period no engines of fishing vessels of a length of 12 meters or more have been modified or replaced with public aid.

2. Biological Indicators

2.2. Sustainable harvest indicator (SHI)

The SHI (sustainable harvest indicator) was used to assess whether fishing vessels are relying on overfished stocks.

The SHI indicator, $F_{\text{estimated}}/F_{\text{target}}$, is a measure of whether the economic activity of a fleet segment on average is less or more dependent on overfished stocks. A value less than one is usually considered as indicating a sustainable exploitation of the stock and a value higher than one is usually considered as a sign of overfishing of the stock.

Eastern Baltic Cod - The age-based Eastern Baltic (subdivisions 24-32) cod stock assessment could no longer be accepted by ICES WGBFAS since 2014 mainly because of age reading problems as well as changes in growth rates leading to unknown changes in catchability. From 2014 onwards the stock has been assessed as a category 3 stock and an FMSY value has no longer been provided by ICES. Therefore, the last F and FMSY value available is the one from the 2014 assessment. As a consequence, the EWG 17-08 prep. meeting decided to withdraw Eastern Baltic cod completely from the SHI index calculations as there is currently no basis to determine the status of the stock.

SHI values that were calculated and observed for all stocks with assessment data, even if the proportion of landings value of the assessed stocks made up less than 40% of the total landings value of the fleet segment. In such cases, the indicator is considered as unrepresentative/unreliable and SHI indicator values cannot be used meaningfully to assess the balance or imbalance.

SHI values calculated only for those fleet segments where the coverage ratio of the assessed stocks targeted by Lithuanian fleet was greater than 40%.

The Lithuanian Baltic Sea fishing fleet in 2022 consisted of 5 segments as defined in the Fleet economic data call as follows: PG VL0008, DFN VL0812, TM VL1824, TM VL2440, TM VL40XX. Since 2021 based on request of economic fleet report the two segments PG VL0010 and DFN VL1012 have been reorganised to different segmentation as PG VL0010 and DFN VL1012 which are exclusively operating in the coastal area. The most recent ICES stocks assessment parameters for fleet segment operating in the Baltic Sea and other ICES areas were used as data sources. Cod has been removed from the SHI calculations and only SHI values were computed for TM VL1824, TM VL2440 and TM VL40XX in 2022 (Table 2.1.). SHI

values for segments PG VL0008 and DFN VL0812 were not assessed as the indicator values are based on stocks that comprise less than 40% of the total value of landings by those fleet segments. Due to eastern cod values removing from SHI indicator calculation, SHI values have been unlike since 2013. Dynamics of SHI values provided in Figure 2.1.

Table 2.2.1. Calculated SHI values for Baltic sea (NAO) segments in 2022.

Fleet segment	SHI value
TM VL1824	1.02
TM VL2440	1.04
TM VL40XX	1.05

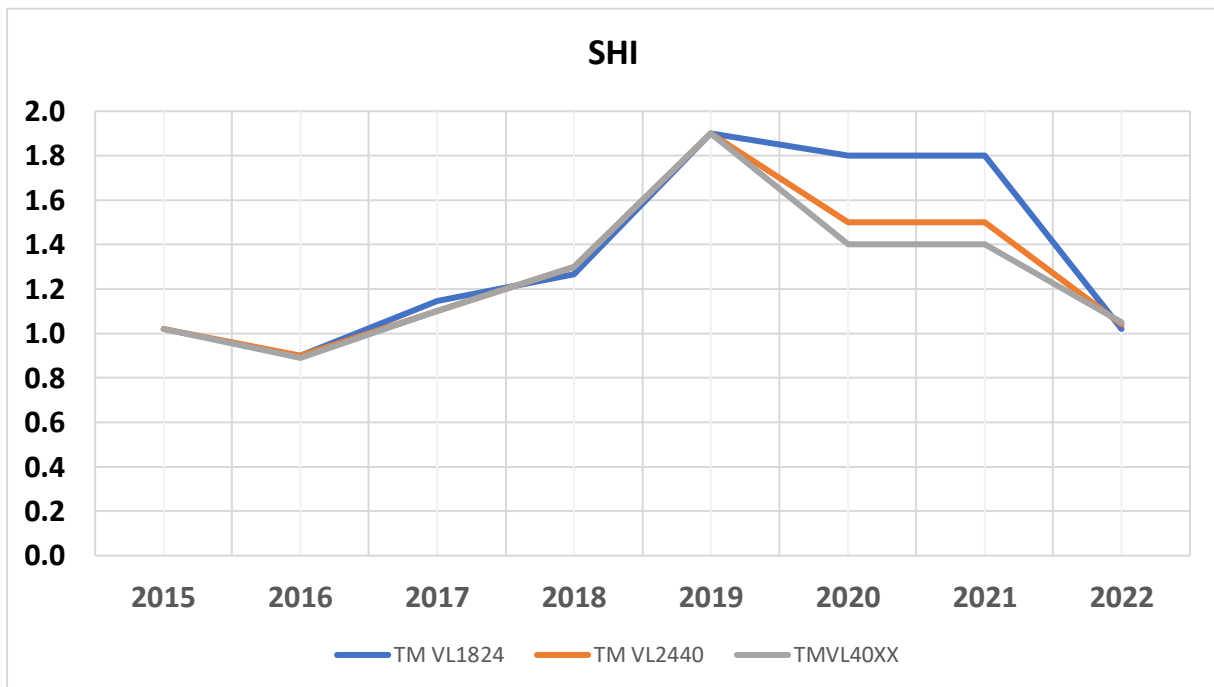


Figure 2.2.1. Dynamics of SHI values for fleet segments operated in the Baltic Sea for 2015-2022.

Dynamics of SHI values show decreasing trend for segments TM VL1824, TM VL2440 and TM VL40XX in the Baltic Sea since 2019. All fleet segments take less than 10% of its catches from a pelagic fish stock. The important non-quota fish stocks exploited by the Lithuania fishing fleet include gobies nei, smell, turbot and flounder. ICES has not provided analysed data for these fish stocks.

It should be highlighted that Baltic eastern cod stock is in a critical state. Lithuanian fishing quota for the Baltic eastern cod decreased from 3710 tonnes to 33 tonnes respectively from 2014 to 2022. For 2022 the Commission proposed and the Council adopted a TAC

corresponding to a 71 % reduction compared 2021 and 2022 to the 2020 Baltic eastern cod stock TAC, which was exclusively for by-catches. No directed fisheries are permitted under this quota. Lithuanian fleet segments strongly (more than 50 percent of income was gaining from the cod fisheries) depended on cod landings DFN VL0812 (before 2021 DFN VL1012). Since 2022 segment DTS VL2440 has been withdrawn from the fishing vessel register with public aid. ICES reported on the cod fishing opportunities that the concept of FMSY, assuming long-term equilibrium, is not considered appropriate for this stock, due to a large decline in productivity in later years. At the current low productivity, the stock is estimated to remain below Blim in the medium term, even with no fishing. Furthermore, fishing at any level will target the remaining few commercial-sized (≥ 35 cm) cod; this will deteriorate the stock structure further and reduce its reproductive potential.

The Long distance fishing fleet (OFR supra region) in 2022 consisted of 2 segments as defined in the Fleet economic data call as DTS VL40XX and TM VL40XX. The most recent NEAFC, CECAF and other Regional fisheries management organisations stocks assessment parameters for fleet segment operating in those areas were used as data sources. Dynamics of SHI values provided in Figure 2.2.

Table 2.2.2. Calculated SHI values for Long distance fisheries (FAO) segments in 2022.

Fleet segment	SHI value
TM VL40XX*	0.87

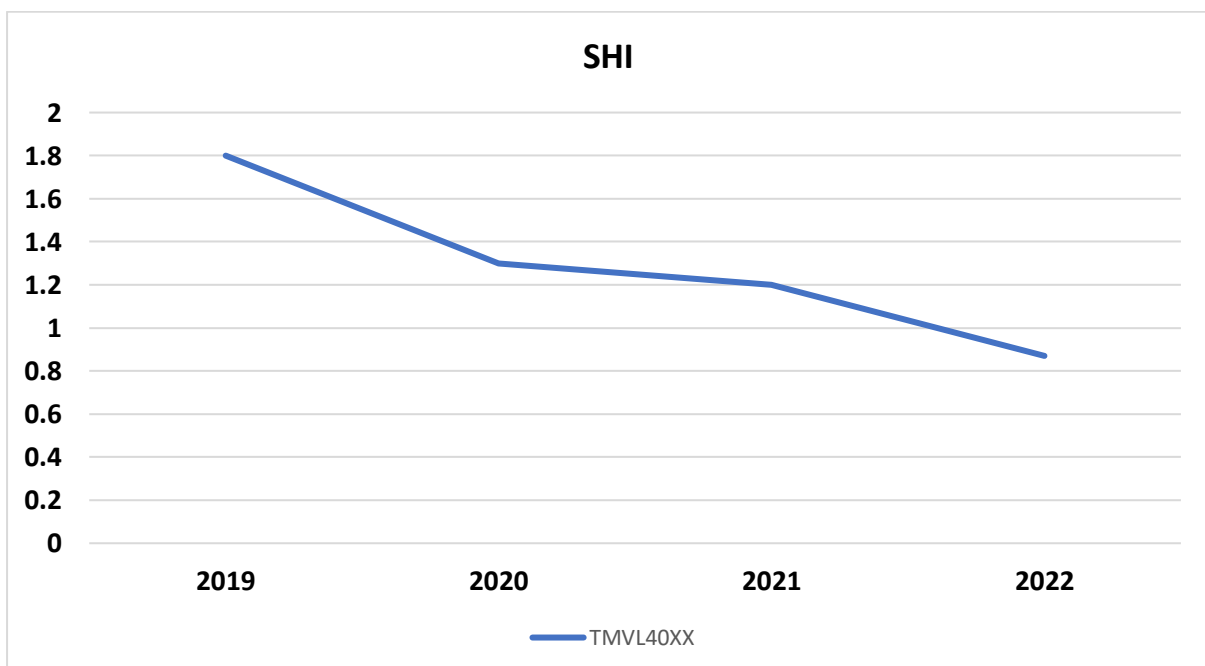


Figure 2.2.2. Dynamics of SHI values for Long distance fisheries fleet for 2019-2022 period. SHI indicator was calculated for clustered TM VL40XX* segment (Table 2.2.). Dynamics of SHI values show decreasing trend for segment TM VL40XX since 2019 until 2022. In 2022 SHI calculation was based on 4 stocks. Stocks catch constitute only 30 percents of segment catch.

When the biological indicator is unavailable due to the lack of values of F and $FMSY$ for more than 60% of the stocks which constitute the catch, the sustainable harvest indicator cannot be used meaningfully to assess the balance or imbalance of a fleet segment. The Lithuanian fishing fleet's catch of fish species subject to a quota which set by the Council of the European Union.

2.3 Stocks-at-risk indicator

According to scientific advice from the International Council for the Exploration of the Sea (ICES), the eastern Baltic cod (*Gadus morhua*) stock suffers from an unsustainably low biomass due to a combination of declining recruitment, environmental factors and changes in the ecosystem leading to a high natural mortality and an excessive fishing mortality given the status of the stock. The low growth, poor condition, and high natural mortality of cod are related to changes in the ecosystem that include: i) poor oxygen conditions that can affect cod both directly through altering their metabolism and indirectly through a shortage of benthic prey, as well as the survival of offspring; ii) reduced availability of fish prey in the main distribution area of cod. Sprat and herring have had a more northerly distribution in recent years, and there is less overlap with the distribution of the cod stock. It is, however, unclear whether the small remaining cod stock would be impacted by this shift of distribution. iii) high levels of parasite infestations; these coincide with an increased abundance of grey seals. It is unknown whether the parasite infection is the cause or an effect of the poor condition of cod.

The stocks at risk indicator (SAR) aims to determine the catch taken by a given fleet segment from stocks with heavily reduced biomass and in a condition such that recruitment may be greatly diminished. In accordance with the Commission's guidelines and based by ICES advice reports a cod stock in the Baltic Sea subdivisions 24–32 and Beaked redfish in subareas 5, 12, and 14 (Iceland and Faroe grounds, North of Azores, East of Greenland) and in NAFO subareas 1 and 2 (deep pelagic stock > 500 m) at risk was indicated as assessed as being below the B_{lim} biological level. However, in 2022 no catches of Beaked redfish in subareas 5, 12, and 14 were obtained by Lithuanian fleet. The SAR indicator for pelagic species under the jurisdiction of Committee for the Eastern Central Atlantic (CECAF) was obtained from the CECAF-FAO reports.

The indicator is calculated as the number of stocks exploited by a given segment which meet the following conditions: catch from the stocks considered at risk makes up more than 10% of the fleet segment's catch. The calculation formula is as follows:

(1 where $(C_i > 0.1 C_t)$ or $(C_i > 0.1 T_i)$; otherwise 0),

where C_i – catch from stock i , C_t – total catch of all stocks taken by the fleet segment, T_i – total catch of stock i taken by all segments.

The SRI values calculated for the segments of the Lithuanian fleet which were analysed are presented in Table 2.3.1. below.

Fleet segments	SAR indicator by years for her.27.25-2932		
	2020	2021	2022
VL0008(VL0010) PG NAO	1	1	1
VL0812(VL1012) DFN NAO	1	1	1
VL1824 TM NAO	1	1	1
VL2440 TM NAO	1	1	1
VL40XX TM NAO	1	1	1
	SAR indicator by years for reb.2127dp stock		
VL40XX DTS OFR	0	0	0
VL40XX TM OFR	1	0	0

Table 2.3.1. The SAR values

Since 2018, Western and Eastern Baltic cod became a stock at risk. Since 2020 the Eastern Baltic cod stock was fished exclusively for by-catches. Also, since 2022 the Baltic Sea salmon became exclusively for by-catches. No directed fisheries were permitted under those quotas. As such, catch from the cod and salmon considered at risk was less than 10% of the fleet segment's catch since 2020. Moreover, segments VL1824 DTS NAO and VL2440 DTS NAO

were no longer existed since 2020 as fisheries were reduced and partly switched on pelagic species. Regarding salmon in ICES subdivisions 22-31, ICES had stated for several years previously that the status of the river stocks was very heterogeneous. According to ICES advice, all commercial and recreational catches in the main basin, which are inherently mixed fisheries catching salmon from healthy and weak river stocks, should be stopped in order to protect the weak river stocks. ICES cannot assess the stock Beaked redfish (reb.2127dp). ICES advises that when the MSY approach is applied, there should be zero catch in each of the years 2022, 2023, and 2024. Based on FAO Working group on the assessment of small pelagic fish of Northwest Africa 2023, the status of the two stocks of horse mackerel (*T. trecae* and *T. trachurus*), chub mackerel (*Scomber colias*) have improved, and these stocks are now considered fully exploited. This is due to an improvement in biomass and recruitment indices in 2022, observed by the recruitment surveys. One fleet segment is targeting Atlantic horse mackerel and chub mackerel, with catches that exceeded 10% of the segment's total catches.

3. Economic indicators

3.1. Fleet segment description

Lithuanian fishing fleet is subdivided by fleet segments based on Commission Delegated Decision (EU) 2019/110 establishing the multiannual Union program for the collection and management of biological, environmental, technical and socioeconomic data in the fisheries and aquaculture sectors. Segmentation is used to specify distinct types of fisheries as well as to avoid reporting of confidential data when insufficient number of enterprises represents segment.

Fleet segments:

OFR TM-40XX – segment consists of distant fleet vessels operating predominantly in CECAF. Depending on allocated fishing opportunities, segment has also effort in SPRFMO, NAFO and NEAFC. Landings are composed mainly of small pelagic species, such as HMZ, MAS, JAX and PIL, as well as PRA and PCR. Due to confidentiality reasons, economic data are not detailed by fishing techniques. This clustered segment contains vessels using TM, DTS and FPO techniques. Almost all vessels are larger than 40m.

NAO TM 24-40 – clustered segment includes pelagic trawlers 18-24 m, 24-40 m and over 40 m, which are operating in Baltic Sea and targeting HER and SPR. Segment may also contain vessels using demersal trawler as second gear, but dominant effort is with pelagic trawlers. *In 2019 due to confidentiality reasons (economic data from two companies, four vessels) segment includes demersal trawler vessels from NAO DTS 24-40.*

NAO DTS 24-40 – Till 2019 segment consisted of 18-24 m and 24-40 m demersal trawlers, fishing in Baltic Sea. Fleet is mainly targeting COD and FLE with demersal trawler as the main gear. Segment has included vessels using pelagic trawler as second gear but having dominant effort with demersal gear. In 2019 after cessation of cod fisheries in Baltic Sea, due to confidentiality reasons (data from two fishing companies from demersal segment) is clustered with NAO TM 24-40. From 2020 NAO DTS 24-40 is not operating.

NAO DFN 8-12 (10-12 till 2020) – Due to confidentiality reasons this segment is clustered from passive gear coastal vessels 8-12 m length and 24-40 m length vessels fishing in Baltic Sea with netters.

NAO PG 0-8 (0-10 till 2020) – small scale fleet segment under 8 m in length which operates only in coastal area of Baltic Sea.

3.2 Return on Fixed Tangible Assets (ROFTA) and Return on Investments (ROI)

Return on capital was evaluated by two indicators - Return on Fixed Tangible Assets (ROFTA) and Return on Investments (ROI). ROFTA was estimated not considering intangibles assets, income and costs from fishing rights, whereas ROI was calculated including estimated value of fishing rights and associated income and costs. The system of transferable fishing rights was introduced in 2017.

Capital productivity could also be assessed comparing ROFTA and ROI with the long-term interest rate. Comparison is provided in each table of capital productivity. If ROFTA and ROI are smaller than the low-risk long term interest rates available elsewhere, then this suggests that the fleet segment may be overcapitalized and if less than zero and less than the best available long-term risk-free interest rate, this is an indication of long-term economic inefficiency that could indicate the existence of an imbalance. For 2022 capital productivity assessment, average of 5 year long-term interest rate of 0.32% was used.

OFR TM-40XX segment. Since 2018 the net profit of the distant fleet experienced a significant turnaround, shifting from negative margins in 2018 to EUR 5.7 million in 2022. However, when compared to 2021, the net profit declined by 58%. Consequently, in 2022 returns on fixed tangible assets (ROFTA) in comparison with 2021, decreased to 7.6% , whereas ROI declined to 4.5%.

The decline in net profit, which directly impacts capital productivity, can be attributed primarily to a sharp increase in fuel costs and other variable expenses related to fishing efforts. The economic performance of the distant fleet depends on agreements with third countries for fishing opportunities in the CECAF area. However, after a break in 2019-2020 period, long

distance fleet resumed fishing in the SPRFMO area and landed 32 thousand tones of seafood production in 2022.

Furthermore, due to uncertainties surrounding fishing opportunities in Moroccan territories (as a bilateral agreement is set to terminate in 2023), part of the pelagic trawlers' capacity shifted to South Pacific waters. Notably, income from landings has exhibited consistent growth since 2018, reaching €99.8 million in 2022—a 24% increase compared to the previous year.

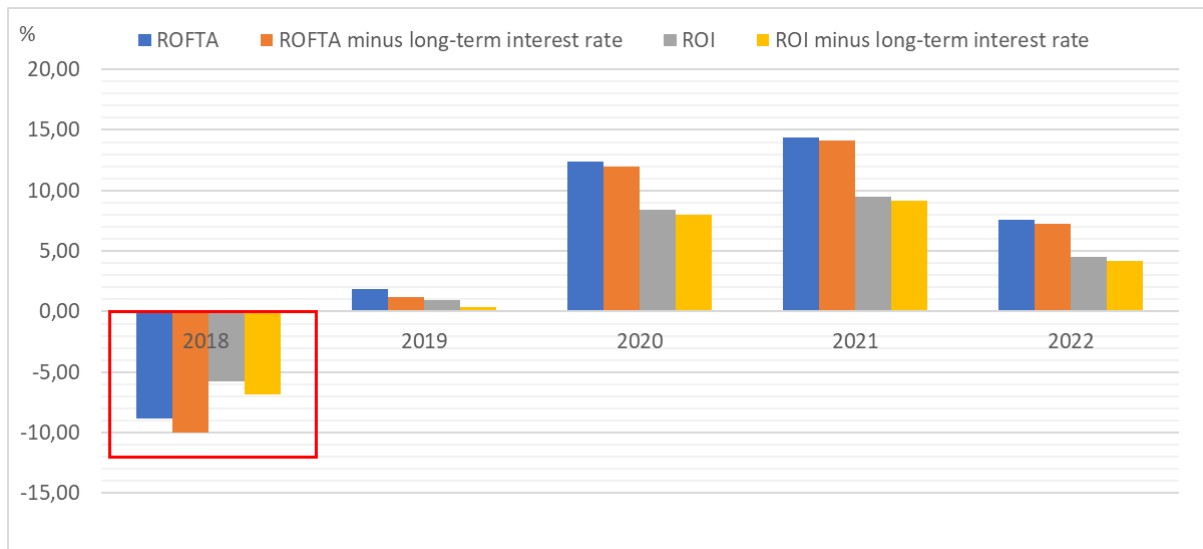
In summary, the distant fleet's economic performance in 2022 demonstrates balanced capitalization, aligning with long-term trends (as indicated in Table 3.2.1). Additionally, capital productivity remains sufficiently higher than the 0.32% 5-year long-term interest rate, making it an attractive alternative investment.

3.2.1. ROFTA and ROI for the fleet segment OFR TM- 40XX (Distant fleet)

Values	2018	2019	2020	2021	2022
Fleet tangible asset value	81	108	99	97	76
(replacement) (thousand €)	033,63	156,43	344,42	255,01	042,88
Estimated value of fishing	46	46	47	51	51
rights (thousand €)	670,34	407,37	229,85	002,91	266,46
ROFTA= Net profit / Vessel	-8,85	1,85	12,39	14,41	7,56
replacement value (%)					
ROFTA minus risk free	-9,99	1,21	11,98	14,15	7,24
long-term interest rate* (%)					
ROI = Net profit / Capital	-5,73	0,98	8,39	9,45	4,52
asset value (%)					
ROI minus risk free long-	-6,87	0,34	7,98	9,19	4,20
term interest rate* (%)					

Data source: ADC, ECB

* - arithmetic average of long-term interest rate for the previous 5 years in relation to reference year.



Capital productivity for the fleet segment OFR TM- 40XX (Distant fleet)

NAO TM 24-40 segment. Capital productivity, as measured by ROFTA and ROI, showed a consistent decline in the Baltic Sea pelagic trawler segment from 2018 to 2022. During the 2018-2019 period, this decline was primarily linked to the transformation of the fleet in the Baltic Sea following the closure of Eastern cod fisheries. Notably, a portion of the capacity from the demersal trawler fleet segment was reallocated to pelagic fisheries, where fishing opportunities for pelagic species were at maximum level.

The subsequent years, 2020-2021, saw negative returns from the Baltic pelagic trawler segment further impacted by COVID-19 measures. These pandemic-related disruptions affected various aspects of the fishery business, from lockdowns and employee availability to production sales. From 2019 to 2022, the primary driver behind the continued decline in profitability and related capital productivity was the deterioration of pelagic species stock status. Consequently, quotas for Baltic herring and sprat declined, and cod fisheries remained closed. While significant reductions in bycatch and landing obligations could potentially lead to a choke effect for commercial fisheries, this scenario was not observed in 2022. On the cost side, fuel costs played a pivotal role in the profitability decline during 2022. The average marine fuel price skyrocketed by 144%, pushing the LSF fleet to reach short-term break-even prices for fuel, resulting in economic losses.

The persistently negative ROFTA and ROI in the NAO TM 24-40 segment operating in the Baltic Sea signal an evident overcapacity of capital (as indicated in Table 3.2.2). Notably, the ROI during the 2020-2022 period remained below the average of the long-term interest rate for

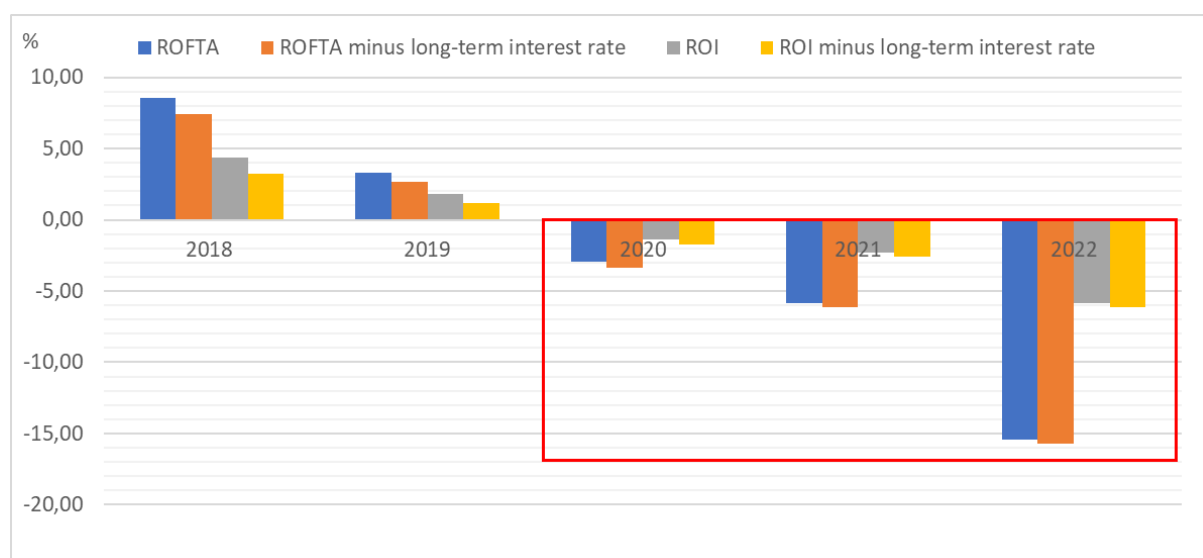
the previous 5 years relative to the reference year. In 2022, both ROFTA and ROI decreased to their lowest levels since 2018: -15.4% and -5.8%, respectively.

3.2.2 ROFTA and ROI for the fleet segment NAO TM 24-40 (Baltic Sea)

Values	2018	2019	2020	2021	2022
Fleet tangible asset value (replacement) (thousand €)	4 578,16	4 731,71	3 391,93	5 166,38	6 883,05
Estimated value of fishing rights (thousand €)	3 392,78	4 038,95	3 936,14	3 770,94	3 212,93
ROFTA= Net profit / Vessel replacement value (%)	8,54	3,30	-2,94	-5,85	-15,43
ROFTA minus risk free long-term interest rate* (%)	7,40	2,66	-3,35	-6,12	-15,75
ROI = Net profit / Capital asset value (%)	4,40	1,78	-1,36	-2,29	-5,82
ROI minus risk free long-term interest rate* (%)	3,26	1,14	-1,77	-2,56	-6,14

Data source: ADC, ECB

* - arithmetic average of long-term interest rate for the previous 5 years in relation to reference year.



Capital productivity for the fleet segment NAO TM 24-40 (Baltic Sea)

NAO DFN 8-12 segment. The NAO DFN 8-12 (10-12 until 2020) segment has consistently exhibited negative capital productivity since 2015, hitting its lowest values in 2020 with an ROFTA of -66.7% and an ROI of -47.0%. Until 2021, this segment was closely tied to the performance of 24-meter netters, which boasted significantly higher landings and fishing effort compared to the 10-12 meter length coastal vessels.

This fleet segment is dependent on the cod stocks, which fisheries are closed due to poor stock status. As a result, the segment struggled with an unbalanced capital structure, resulting in negative returns on capital. To address this, fleet management implemented measures and a capacity reduction program, leading to a 65% reduction in capacity from 106 GT in 2021 to 37 GT in 2022.

Despite the negative ROI in 2022, there was a notable improvement in capital productivity. Compared to 2020, capital productivity increased by 29.7 percentage points to -17.3%, and compared to 2021, it rose by 3.33 percentage points. However, the challenges persist. The closed cod fisheries and decreased fishing opportunities for European smelt and Baltic herring continue to generate negative returns, leaving the segment with an unbalanced capitalization. Moreover, the long-term ROI remains below the average of the long-term interest rate for the previous 5 years relative to the reference year.

3.2.3. ROFTA and ROI for the fleet segment NAO DFN 8-12 (10-12 till 2020) (Baltic Sea (24-40 m) and coastal area (8-12 m))

Values	2018	2019	2020	2021	2022
Fleet tangible asset value (replacement) (thousand €)	323,76	267,05	170,79	366,32	261,03
Estimated value of fishing rights (thousand €)	191,93	101,64	71,80	50,25	46,05
ROFTA= Net profit / Vessel replacement value (%)	-48,45	-49,50	-66,71	-23,44	-20,33
ROFTA minus risk free long-term interest rate* (%)	-49,58	-50,14	-67,12	-23,70	-20,65
ROI = Net profit / Capital asset value (%)	-30,85	-35,85	-46,97	-20,61	-17,28

ROI minus risk free long-term interest rate* (%)	-31,99	-36,50	-47,38	-20,87	-17,60
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Data source: ADC, ECB

* - arithmetic average of long-term interest rate for the previous 5 years in relation to reference year.



Capital productivity for the fleet segment NAO DFN 8-12 (Baltic Sea (24-40 m) and coastal area (8-12 m))

NAO PG 0-8 segment. Since 2018, the capital productivity of the small-scale fleet segment NAO PG 8-10 (0-10 until 2020) has exhibited a consistent downward trend in terms of both ROFTA and ROI. In 2020, the small-scale fleet faced significant challenges due to the economic impact of COVID-19 lockdowns and other stringent pandemic-related measures. This resulted in negative ROFTA and ROI for the first time since 2011.

However, in 2021, the segment managed to recover its capital productivity, achieving ROI of 17.4%. Despite this improvement, several factors weighed heavily on the segment's performance. Declining stocks of Baltic herring, the closure of Eastern Baltic cod fisheries, and reduced fishing opportunities for European smelt led to a 30% decrease in landing weight and a 15% reduction of income in 2022 compared to 2021.

In 2022, the situation worsened due to the war in Ukraine, which triggered a surge in fuel prices and inflation. As a result, the fleet experienced negative profitability, resulting in another decline in capital productivity relative to 2021 (-18.2% ROFTA and -8.2% ROI). Notably, this was the second instance of capital productivity dropping into negative territory during the 2020-2022 period, signaling potential imbalances in capitalization. However, it's essential to recognize that the negative profitability was influenced by significant force majeure events, including the breakdown caused by the COVID-19 pandemic and the war in Ukraine.

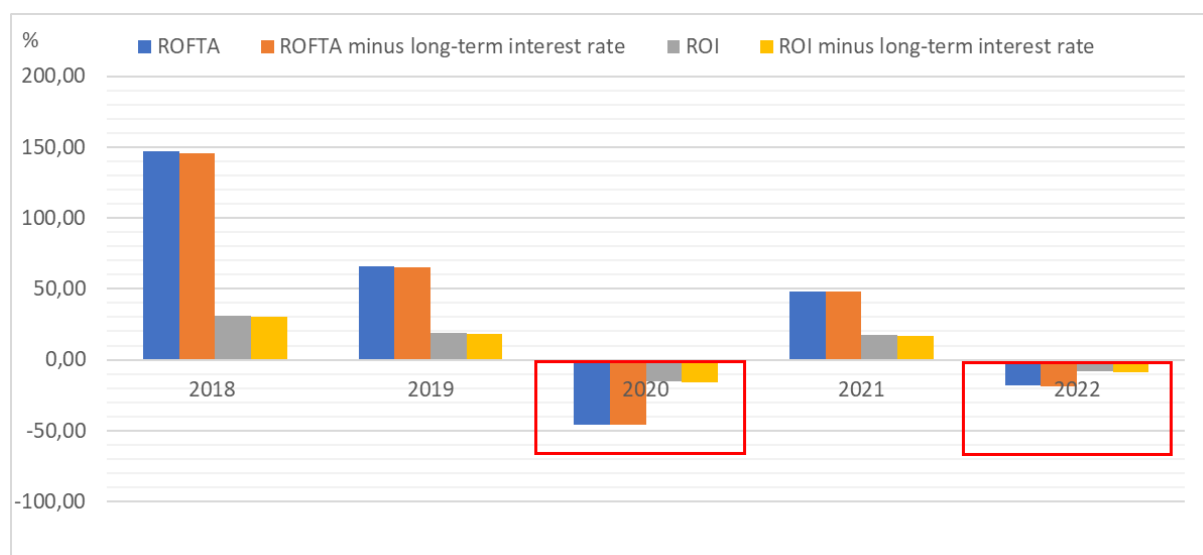
Furthermore, the average ROI from 2018 to 2022 remains higher than the long-term interest rate for the previous 5 years, despite these challenges.

3.2.4. ROFTA and ROI for the fleet segment NAO PG 0-8 (0-10 till 2020) (coastal area)

Values	2018	2019	2020	2021	2022
Fleet tangible asset value (replacement) (thousand €)	141,58	153,30	149,90	137,27	158,84
Estimated value of fishing rights (thousand €)	521,09	382,51	289,76	241,41	193,32
ROFTA= Net profit / Vessel replacement value (%)	146,75	66,13	-45,76	48,04	-18,16
ROFTA minus risk free long-term interest rate* (%)	145,61	65,48	-46,17	47,78	-18,48
ROI = Net profit / Capital asset value (%)	31,35	18,92	-15,38	17,41	-8,19
ROI minus risk free long-term interest rate* (%)	30,21	18,28	-15,79	17,15	-8,51

Data source: ADC, ECB

* - arithmetic average of long-term interest rate for the previous 5 years in relation to reference year.



Capital productivity for the fleet segment NAO PG 0-8 (coastal area)

3.3. The ratio between current revenue (CR) and break-even revenue (BER)

The ratio between CR and BER shows the financial viability of fleet and indicates how close the current revenue is to the income required to break even in the short term. According to the methodology, if the ratio is greater than 1, then enough income is generated to cover variable, fixed and capital costs, indicating that the segment is profitable, with potential undercapitalization. If the ratio is less than 1, means that insufficient income is generated to cover variable, fixed and capital costs, indicating that the segment is unprofitable, with potential overcapitalization. In the case of negative CR/BER values variable costs alone exceed current revenue, indicating that the more revenue is generated, the greater the losses will be achieved.

OFR TM- 40XX segment. The distant fleet in 2022 generated EUR 109.3 million revenue with 23.8% increase from 2021 and was 41.5% higher than 2018-2021 average. CR/BER indicator in 2022 decreased to 1.17 indicating a balanced economic capability and short term viability (table 3.3.1). Decline in CR/BER was related to the increase in energy costs (134% compared to 2021) and inflation driven other variable costs (55.7% higher than 2021). Energy costs were the major cost item in LDF fleet (31% of total operational costs) followed by other non-variable costs including expenditures on quota and other fishing rights.

In 2022, the distant fleet generated EUR 109.3 million—a remarkable 23.8% increase compared to 2021 and a substantial 41.5% surge above the average for the period from 2018 to 2021.

The CR/BER indicator, a crucial measure of economic capability and short-term viability, declined to 1.17 in 2022 (as shown in Table 3.3.1). This decrease was primarily linked to two factors:

1. **Energy Costs:** These costs experienced 134% surge compared to 2021. Notably, energy costs constitute the largest portion (approximately 31%) of the total operational expenses for the LDF fleet, followed by other non-variable costs including expenditures on quota and other fishing rights.

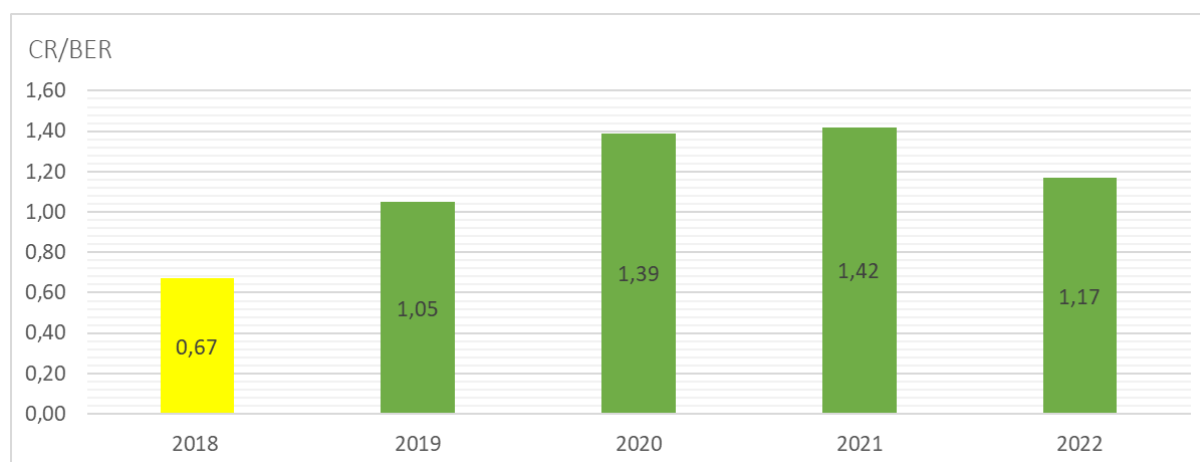
2. **Inflation-Driven Variable Costs:** Other variable costs, influenced by inflation, rose by 55.7% relative to 2021.

Despite these challenges, the distant fleet maintains a balanced economic position, ensuring short-term viability. However, vigilance remains essential as the industry navigates fluctuations in costs and market dynamics.

3.3.1. Ratio between CR and BER for the segment OFR TM- 40XX (Distant fleet)

Values	2018	2019	2020	2021	2022
Current revenue (CR) (thousand €)	58 916,31	79 249,73	82 483,26	88 270,53	109 284,95
Break-even revenue (BER) (thousand €)	87 751,18	75 696,84	59 441,16	62 141,87	93 411,27
CR/BER	0,67	1,05	1,39	1,42	1,17

Data source: ADC



Ratio between CR and BER for the segment OFR TM- 40XX (Distant fleet)

NAO TM 24-40 segment. Pelagic trawlers operating in the Baltic Sea had a declining trend in their CR/BER ratio since 2018, reaching 0.77 in 2022. This decrease signifies insufficient income to break even for profit, highlighting inefficiencies in the fisheries.

Comparing 2022 to 2021, current revenues were 10.4% higher. However, this increase was primarily linked to the rise in income from transferable fishing rights. Excluding this type of income, revenues actually decreased by 9% in 2022.

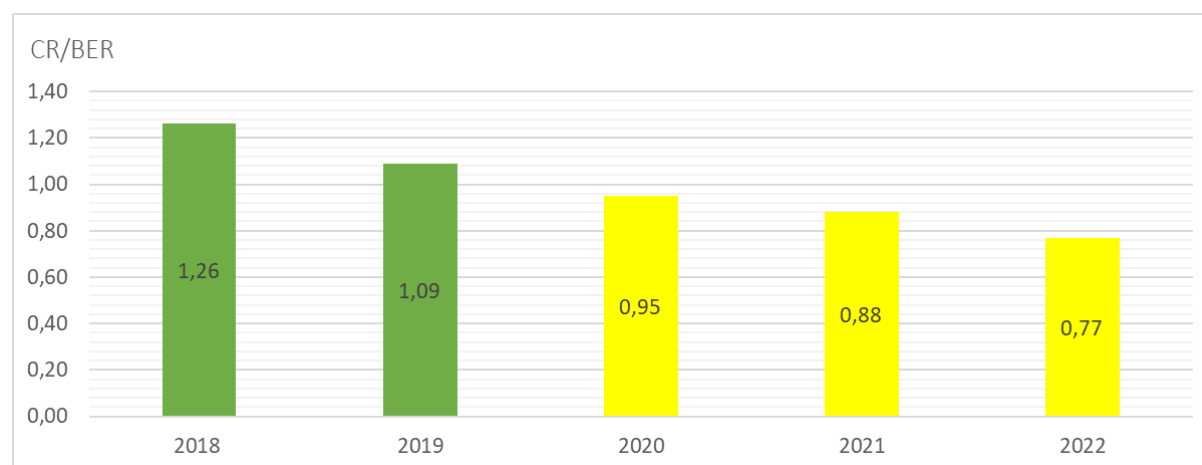
In terms of operational costs, LSF non-variable costs (including fishing right costs) and energy costs dominated the structure. They accounted for 41% and 22%, respectively. The increase in non-variable costs by 22.5% compared to 2021 was mainly due to expenses related to the acquisition of fishing rights and quotas. Meanwhile, energy costs surged by 48.7% in 2022, even as the effort in days at sea declined by 21%.

The consistent decline in CR/BER within the NAO TM 24-40 segment, with an indicator consistently below 1 over the last three years, signals an overcapacity in 2022 (as indicated in Table 3.3.2).

3.3.2. Ratio between CR and BER for the segment NAO TM 24-40 (Baltic Sea)

Values	2018	2019	2020	2021	2022
Current revenue (CR) (thousand €)	4 973,45	5 243,16	4 896,62	4 473,15	4 939,08
Break-even revenue (BER) (thousand €)	3 937,24	4 828,71	5 157,61	5 088,33	6 379,94
CR/BER	1,26	1,09	0,95	0,88	0,77

Data source: ADC



Ratio between CR and BER for the segment NAO TM 24-40 (Baltic Sea)

* - in 2019 includes economic data from two fishing companies from NAO DTS 24-40 segment

NAO DFN 8-12 segment. In 2022, the CR/BER value for the fleet segment NAO DFN 8-12 (10-12 until 2020) achieved a significant milestone: it crossed from negative territory to a positive level, reaching 1, the first time since 2018.

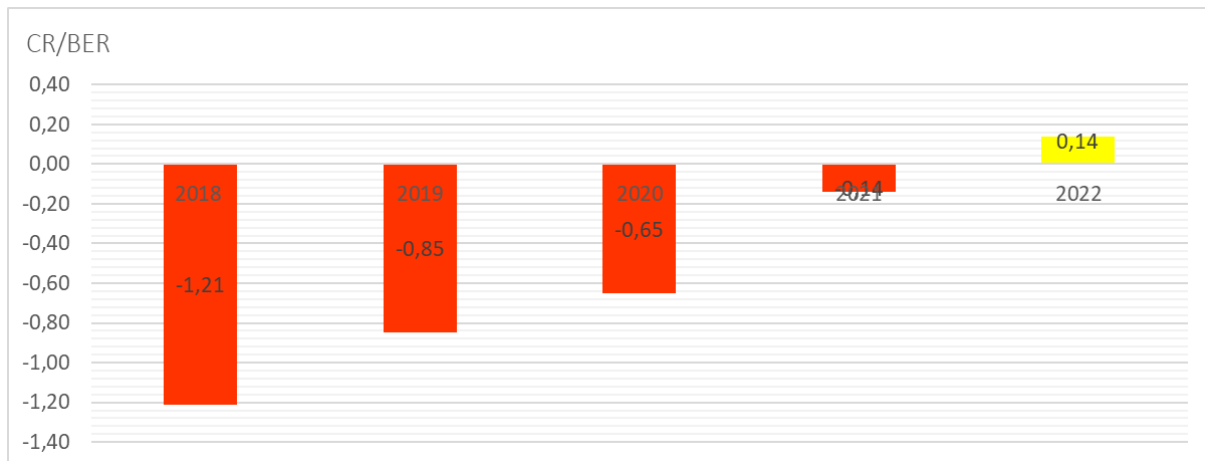
However, it's essential to note that in 2022, the segment excluded 24-meter Baltic Sea netters. These vessels, utilizing compensation for permanent cessation, ceased fishing operations. Consequently, the NAO DFN 8-12 segment now comprises only coastal vessels. The NAO DFN 8-12 segment targets a diverse range of coastal species, including European smelt. These species have the potential to generate income and offer higher profit margins. Importantly, they are less reliant on closed cod fisheries compared to the 24-meter netters.

Despite the improved CR/BER ratio in 2022, the small-scale DFN segment does not yet exhibit signs of balanced economic capability (as indicated in Table 3.3.3).

3.3.3. Ratio between CR and BER for the segment NAO DFN 8-12 (10-12 till 2020) (Baltic Sea and coastal area)

Values	2018	2019	2020	2021	2022
Current revenue (CR) (thousand €)	149,58	39,79	34,90	29,56	24,66
Break-even revenue (BER) (thousand €)	-123,36	-46,75	-53,75	-208,78	177,90
CR/BER	-1,21	-0,85	-0,65	-0,14	0,14

Data source: ADC



Ratio between CR and BER for the segment NAO DFN 8-12 (10-12 till 2020) (Baltic Sea (24-40 m) and coastal area (8-12 m)

NAO PG 0-8 segment. In 2022, the small-scale fleet segment NAO PG 0-8 (0-10 until 2020), operating in coastal areas, generated EUR 476.2 thousand in current revenues. However, this figure was 13.6% lower compared to 2021. The decline in revenues can be attributed to two factors:

Reduced Fishing Effort: The segment experienced a 14.8% decrease in fishing effort measured in days at sea. This reduction impacted the overall catch and subsequently affected revenue. Decline in fishing effort was related to the unfavorable weather conditions for fishing during European smelt season and decreased stock availability for key species.

Increased in operating costs: Coastal fleets, which operate with passive gear, are less dependent on energy costs compared to large-scale trawlers. Despite the increase in fuel prices, which did not significantly impact the coastal fleet, other variable costs surged:

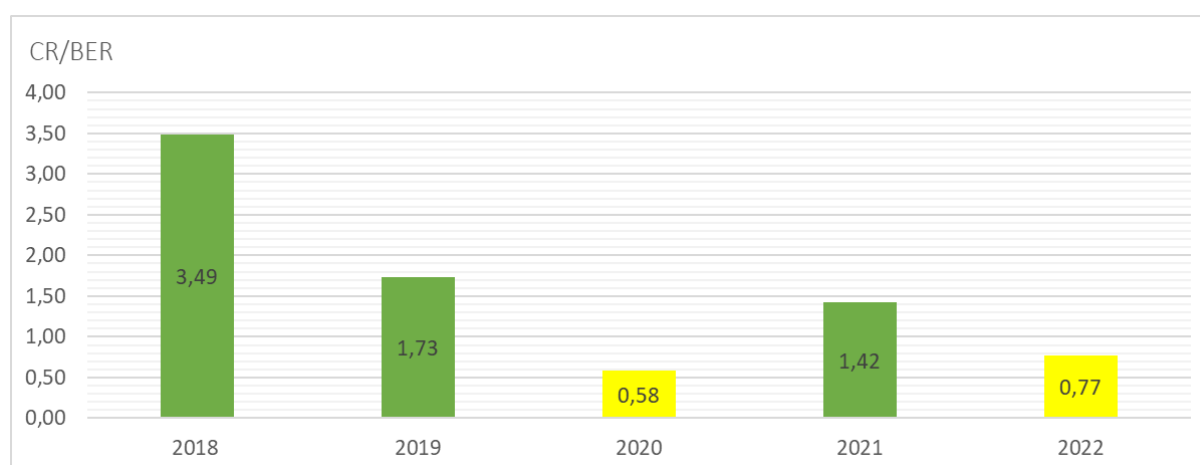
- Energy costs increased by 40.3%.
- The primary cost item—crew costs—rose by 9%.

Overall, these factors led to negative earnings and reduced the CR/BER to 0.77. The decline of the CR/BER indicator from 1.42 to 0.77 in 2022 highlights short-term economic inefficiency within the segment (as indicated in Table 3.3.4).

3.3.4. Ratio between CR and BER for the segment NAO PG 0-8 (0-10 till 2020) (coastal area)

Values	2018	2019	2020	2021	2022
Current revenue (CR) (thousand €)	637,55	575,41	427,50	550,87	476,25
Break-even revenue (BER) (thousand €)	182,58	333,42	735,71	389,04	615,56
CR/BER	3,49	1,73	0,58	1,42	0,77

Data source: ADC



Ratio between CR and BER for the segment NAO PG 0-8 (0-10 till 2020) (coastal area)

3.4. Methodology

Calculations of balance indicators are based on EUMAP data and presented at fleet segment level. Primary data are collected by annual census survey, using questionnaires, approved by the Order of the Lithuanian Minister of Agriculture No 3D-707 on 4-th August of 2010. Economic data of fishing fleet is collected by State enterprise Agricultural Data Centre (ADC). Economic indicators in the preparation of Balance report were not adjusted to the inflation, using real values, collected from industry accounting system.

The balance between capacity and fishing opportunities in terms of economic indicators were measured by Return on Fixed Tangible Assets (ROFTA), Return on Investments (ROI) and Ratio between Current Revenue (CR) and Break-even Revenue (BER). As indicated in the

guidelines, data is analyzed in long term period. Tables with economic variables for calculation balance indicators are provided in tables for 5 years, whereas long-term trend of indicators is shown in graphs. For calculation of ROFTA, value, income and related costs of transferable fishing rights were not taken into account, whereas ROI includes intangible estimated fishing rights and income together with costs from transferable fishing rights.

ROFTA, ROI and CR/BER for comparison purposes is additionally reduced by harmonized 5 year average long-term interest rates for convergence assessment calculated by the European Central Bank, as it recommended by the Commission. Long term interest rate data for Lithuania is used from European Central Bank data base.

Average long-term interest rates for 5-year period are provided in the table below:

Period	Average interest rate %
2014-2018	1,14
2015-2019	0,64
2016-2020	0,41
2017-2021	0,26
2018-2022	0,32

Data source: ECB

Calculation of indicators:

$$ROFTA = \text{Net profit} / \text{Vessel replacement value}$$

Where: $\text{Net profit} = (\text{Income from landings} + \text{other income}) - (\text{crew costs} + \text{unpaid labour} + \text{energy costs} + \text{repair and maintenance costs} + \text{other variable costs} + \text{non variable costs} + \text{depreciation})$

For the estimation of *Vessel replacement value*, Perpetual Inventory Method (PIM) was used according to the advice from the PGECON¹ working group on best practices for calculating fleet depreciated replacement values.

$$ROI = \text{Net profit} / \text{Capital asset value}$$

$$\text{Capital asset value} = \text{Vessel replacement value} + \text{estimated value of fishing rights}$$

For the estimation of *Value of fishing rights*, Discounted cash flow (profitability) method (DCM) was used according to the advice from the PGECON² working group.

Data on direct income subsidies was excluded from the calculation.

$$CR = \text{income from landings} + \text{other income}$$

¹Planning Group on Economic Issues (PGECON 2012), 16th – 19th April 2012, Salerno (Italy)

²Planning Group on Economic Issues (PGECON 2019), 6th – 10th May 2019, Ljubljana (Slovenia)

$$BER = (Fixed\ Costs) / (1 - [Variable\ costs / Current\ Revenue])$$

Where: *Variable costs* = *Crew costs* + *Unpaid labour* + *Energy costs* + *Repair and Maintenance costs* + *other variable costs*

And where: *Fixed costs* = *Non variable costs* + *depreciation*

Opportunity cost of capital is not included!

4. Vessel Use Indicators

4.1 Inactive fleet indicator

The vessel “Inactive fleet” indicator was calculated for the period 2016-2022 aggregated by vessel length segments. Figure 4.1.1. shows the proportion of inactive vessels aggregated by year and length segments of the total fleet (%). Data for calculation is taken from data collection programme. Figure 4.1.2. and Figure 4.1.3. demonstrates of inactive fleet share of specific segment by GT and kW respectively.

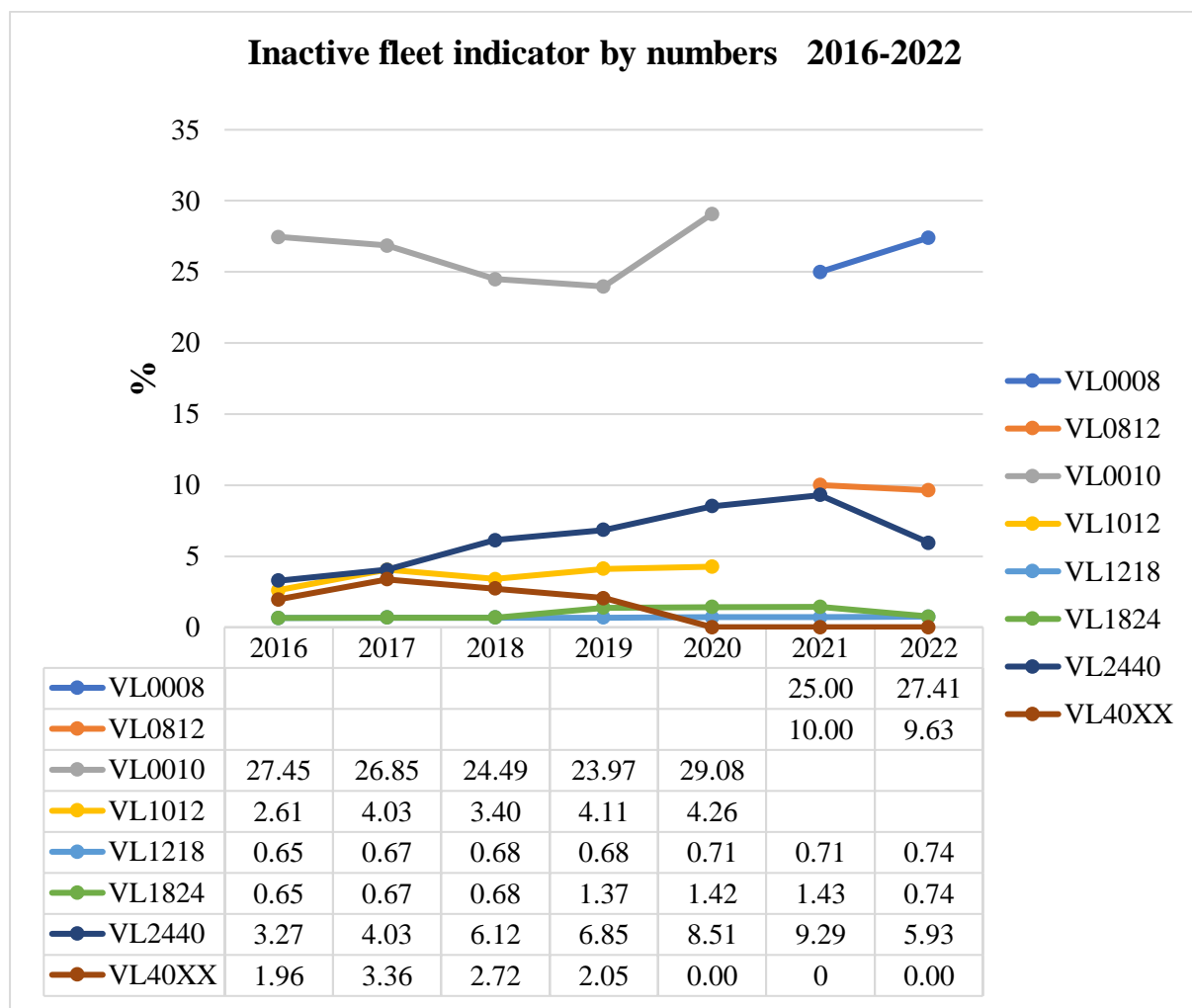


Figure 4.1.1. Inactive fleet indicator 2016-2022 by vessels number share from all fleet.

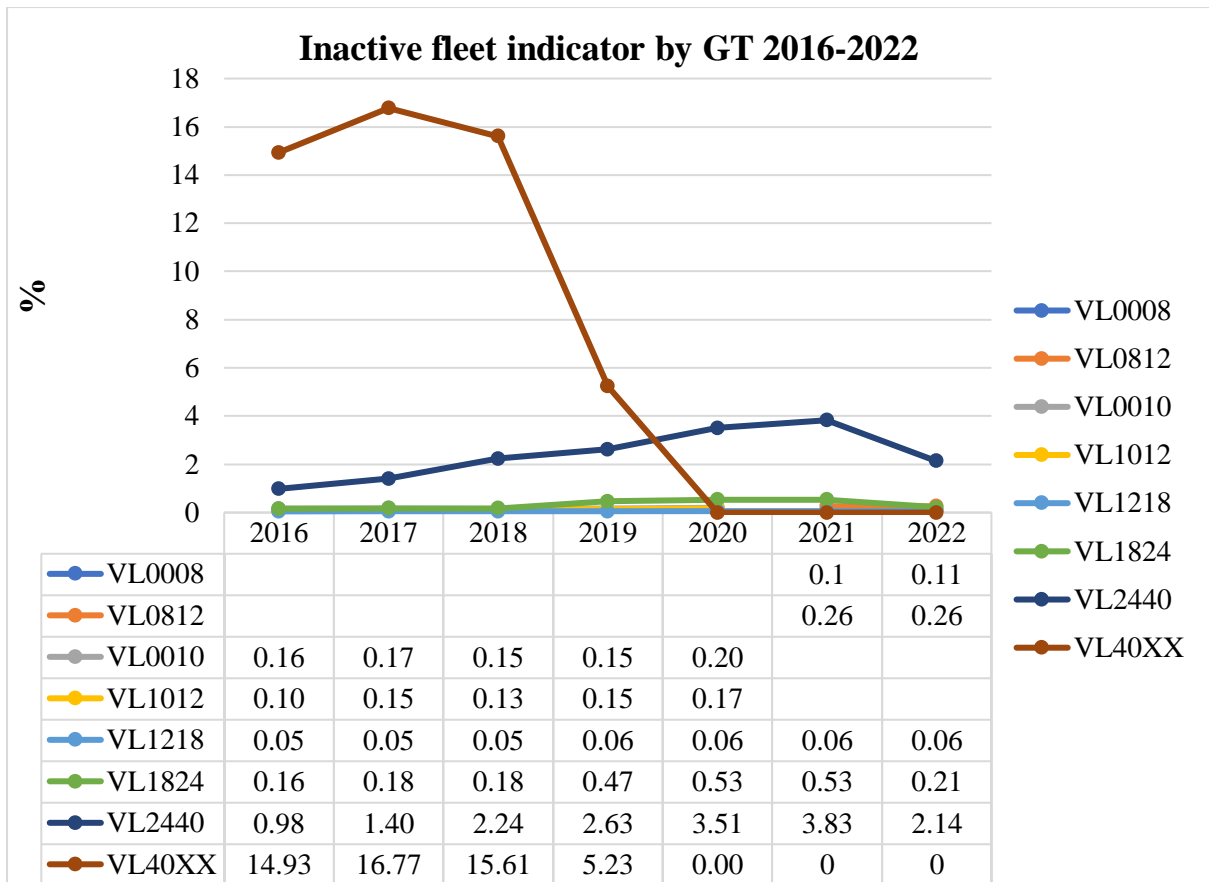


Figure 4.1.2. Inactive fleet indicator 2016-2022 by vessels GT share from all fleet.

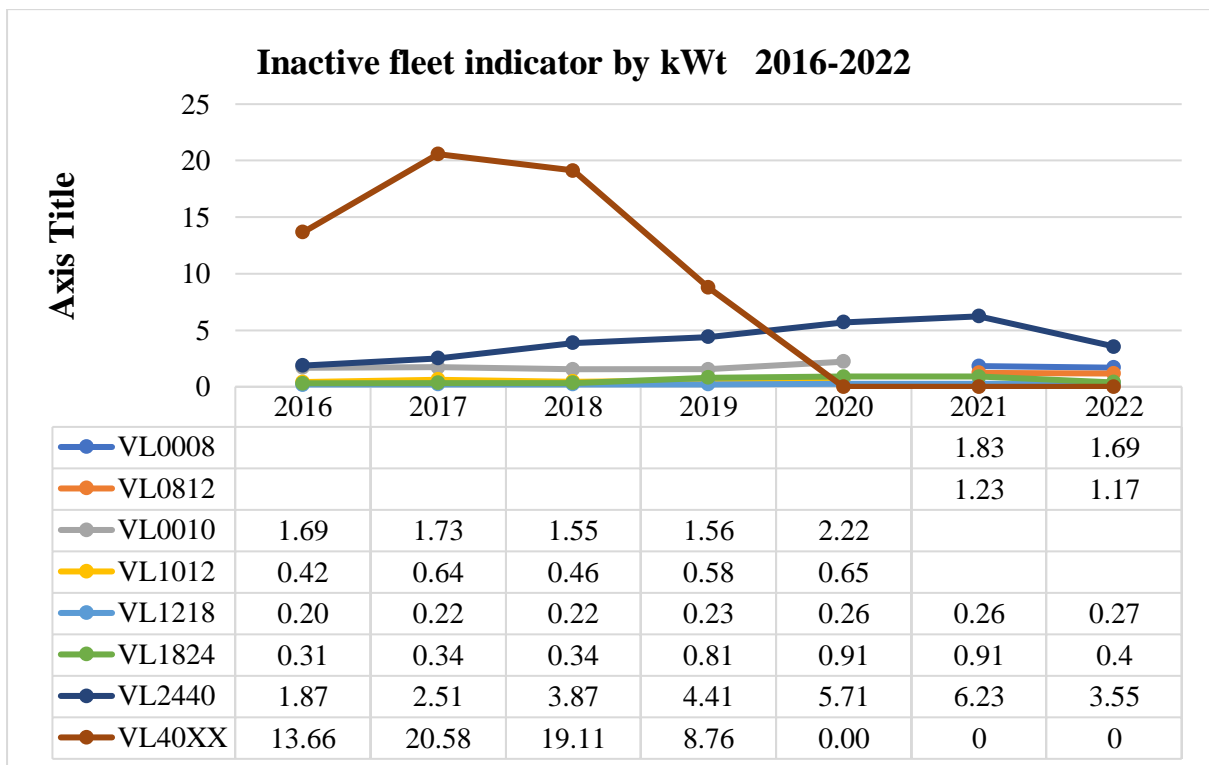


Figure 4.1.3. Inactive fleet indicator 2016-2022 by vessels kW share from all fleet.

Inactive fleet indicator analysis shows that indicators of VL40XX segments of the fleet have dropped in values, some remain stable, one segment has increased, however data not shows any tangible or substantive trends. Higher inactivity has been observed in the VL0008 fleet segment. However, it's worth noting that only for the years 2021 and 2022, there might be observations of inactivity in the small-scale fisheries segments VL0008 and VL0812, which were reorganized into VL0010 and VL1012 based on fleet economic data call requirements. The main reasons: small vessels only operate part time supplemented by other work usually unrelated to fishing and in most cases on a seasonal basis; operators own several boats, some of which are used as stand-by vessels for various reasons. Also, there is a decrease of inactivity in VL40XX segment in the last three years. The main reasons: the segment is partly contained by vessels registered in the Lithuanian fleet register and operated in the fishing activities on temporal base under charter agreement. As such, based on the agreement expiry vessels were withdrawn from the Lithuanian fleet register. Covid-19 is also likely to have an impact on fisheries management. Measures to support the different elements in the supply chain extend through compensations to fish suppliers to ensure the smooth pass of 4-month fishing stop and impact of Covid-19 in 2020 and 2021. However, the inactivity of fleet segments has mainly decreased compared to the previous year, particularly in 2022.

4.2. The vessel utilization indicator

In the Table 4.2.1. the vessel utilisation fleet indicator was calculated for each fleet segment for the period 2016-2022 aggregated by year and fishing gear.

Vessel segment	2016	2017	2018	2019	2020	2021	2022	Trend (5%) 2018/2022
VL0008 PG						0.39	0.33	-
VL0812 DFN						0.77	0.49	-
VL0010 PG	0.29	0.25	0.37	0.47	0.44	-	-	-
VL1012 DFN	0.44	0.34	0.54	0.8	0.74	-	-	-
VL1824 TM	0.98	1	1	1	0.99	0.85	0.79	no trend
VL2440 TM**	0.58	0.69	0.66	0.93	0.73	0.53	0.65	no trend
VL40XX TM*	0.63	0.71	0.77	0.86	0.74	0.81	0.85	no trend

Table 4.2.1. Vessel utilization indicator 2016-2022

* Due to low number of vessels VL40XX DTS and VL40XX TM segments have been clustered.

** Due to low number of vessels VL40XX TM (NAO) segment has been clustered with VL2440 TM (NAO) segment.

The calculated technical indicator is based on calculation methodology where used as follows: “The ratio between the average effort per vessel in a fleet segment and the observed maximum effort actually expended by a vessel in the segment (in kWdays or GT-days) in the reference year.” Theoretical maximum DAS of 220 days cannot be used due to small scaled fleet segments part time/seasonal fishing activities. The calculation has been done either in kW-days for fleet segments with active gears (TM) and GT-days for fleet segments with passive gears (DFN and PG) as recommended in guidance.

The Vessel Utilisation Indicator per fleet segment in traffic light system showed as status: $0.7 <$ red (out of balance); $0.7 \geq$ green (in balance). For the trend of the period 2018-2022 was using the slope equation 5% threshold to indicate significance, as follow: Slope > 0.05 increasing; Slope < -0.05 decreasing; $-0.5 < \text{Slope} < 0.5$ no significant trend.

VL0008 and VL0812 fall under polyvalent passive gear segments. Major part of these vessels is not full-time engaged in the fishery. However, it could be noted that for vessel utilisation indicator calculated for 2020 and 2021 Covid-19 is also likely to have an impact for particular segment differently. When in 2022 to rise the SSF efforts was challenging due to increasing the fuel price and reducing catches. Two fleet segments seem to be within balance limits (0,7 and more). The calculated technical low indicator for VL0008 PG and VL0812 DFN segments is partly due to statistical bias. In coastal fishing (vessels less than 12 m), commercial fishermen usually own a number of vessels, not all of which are used actively. It is typical in the sector in Lithuania to own one or two reserve vessels. Additionally, in 2022 were observed reduces in catches of VL0008 PG and VL0812 DFN fleet segments which affected profitability. As such, fishing activities reduced. Due to appropriate remedial measures have been adopted to ensure a rapid return of the Baltic Sea cod stock concerned and no directed fisheries of cod were permitted as consequences no demersal fisheries dominate in segments since 2020. The fishery sectors have been particularly hit by market disruption, as demand has seen a sudden decline as consequences of the coronavirus outbreak. Should be highlighted that the impacts of COVID-19 on the segments are vary in 2020-2021. Fish and fish products that are highly dependent on international trade suffered quite early in the development of the pandemic from the restrictions and closures of global markets, whereas fresh fish supply chains were severely impacted by the closure of the food service sectors (e.g. hotels, restaurants and catering facilities, including school and work canteens). Therefore, the trends were affected by abovementioned causes. The main part of vessel utilisation indicators by segments were observed with no trends.

5. Traffic light

Table 5.1. shows traffic light data for the year 2022.

No.	Length	Gear code	ROFTA	Current/ Break even incl. opp. costs	Sustainable Harvest Indicator	Stocks at Risk Indicator	Technical indicators		Over all Conclusion on balance
							Inactivity	Utilization	
1.	<8 m	PG	-18,16	0,77	-	1	27,4	0,33	
2.	8-12 m	DFN	-20,33	0,14	-	1	9,63	0,49	
3.	12-18 m	-	-	-	-	-	0,74	-	
4.	18-24 m	TM	-15,43	0,77	1,02	1	0,74	0,79	
5	24-40 m*	TM			1,04	1	5,93	0,65	
6.	18-24 m	DTS	-	-	-	-	-	-	
7	24-40 m	DTS	-	-	-	-	-	-	
8	>40 m (OFR)	TM	7,56	1,17	0,87	0	0	0,85	
	COM guidelines		>0	>1	<0,95	0	0-10	>0,9	
				>0<1	0,95-1,05	1 and catches are less than 10% of fleet or stock	10-20	0,7-0,9	
			<0	<0	>1,05	>1	>20	<0,7	

* Due to low number of vessels VL40XX TM (NAO) segment has been clustered with VL2440 TM (NAO) segment

Summary of overall conclusion on balance of segments having green, yellow and red colored indicators

Segment NAO PG < 8 m. Economic indicators in terms of ROFTA and CR/BER in 2022 indicates a decline of capital productivity and short-term economic efficiency, however the decrease in economic efficiency was driven mostly by the external factors as market disruption after the beginning of war in Ukraine and related rise of fuel costs and inflation. The constantly negative profitability and capital productivity in long term period was not observed in this segment and is not considered as economic disbalance in 2022. Technical indicators shows unsatisfactory utilization of the segment as well as high figures of inactivity of the segment,

however, as was mentioned in Chapter 4.1. and Chapter 4.2., small vessels are used for fishing only part time of the year, the rest of the time is used for other mostly recreational activities. In addition, some fishermen own several boats, some of which are used as stand-by vessels for various reasons. The stock at risk indicator identifies 1 stock (*Clupea harengus*) currently assessed as being at high biological risk. However, that the stock at high risk catches contained less than 10% of the catches of the fleet and less than 10% of the catches of the stock. As such, it was not treated as an indication of imbalance. Therefore, in 2022 the overall segment NAO PG < 8 m assumed as not efficient balanced. In long term (3 years period) segment is not negative, so no action needed.

Segment NAO DFN 8-12. In 2022, this clustered segment excluded 24-meter Baltic Sea netters, removed by the permanent cessation measures. Remaining capacity of this segment consists only form coastal vessels, which targets mostly European smelt, round goby and Baltic herring. These species have the potential to generate higher profit margins resulting in better capital productivity and economic efficiency. Despite the negative ROFTA in 2022, there was a notable improvement in capital productivity. Therefore, even in the case of disbalance in 2022, there is a clear trend of improving capital productivity from lows in 2018 and signs of approaching the balance level. The utilization of the fishing boats of this segment unsatisfactory trend, however, the reasons are mostly the same as described of Segment NAO PG < 8 m. The same treatment of the stock at risk indicator identification applied as to segment NAO PG < 8 m. Therefore, in 2022 segment NAO DFN 8-12 is not efficient balanced. In long term (3 years period) segment is not negative, so no action needed.

Segment NAO TM 24-40 segment (clustered). Economic indicators of this segment indicates a constantly declining capital productivity and short-term economic efficiency since 2018 with an evident overcapacity of capital (as indicated in Table 3.2.2). Furthermore, the ROFTA during the 2020-2022 period remained below the average of the long-term interest rate for the previous 5 years relative to the reference year indicating a disbalance from the economic point of view. Although the Vessel utilization indicator is not sufficient high enough to consider it as balanced one. However, there was observed the indicator increases compering 2022 with 2021 nevertheless trend calculated for 2018-2022 period shows as no trend. The same treatment of the stock at risk indicator identification applied as to segment NAO PG < 8 m. Therefore, in 2022 the segment NAO TM 24-40 is not efficient balanced. In long term (5 years period) segment shows economic inefficiency that indicates the existence of an imbalance, also, stock at risk indicator shows high risk in long term, so for this segment action is needed. Action plan for this segment will be added.

Segment OFR TM-40XX segment. The distant fleet's economic performance in 2022 demonstrates balanced capitalization, aligning with long-term trends, other indicators shows balance, so in conclusion - this segment is efficient balanced in 2022.

6. Summary report on the weaknesses and strength of the fleet management system and general level of compliance with fleet policy instruments

Strength of fleet management system:

Data collection and fisheries control information systems are critical components of Lithuanian fishing fleet management. These systems, including FDIS, LAFPMIS, and VMS, play a pivotal role in providing reliable, timely, and comprehensive information. They facilitate the monitoring of vessel fishing operations, analysis of fishing effort, assessment of landings, and evaluation of the socioeconomic status of marine fisheries. The quality of data and the stability of these information systems plays a crucial role to ensure transparency in fisheries management and enable the assessment of indicators that gauge the balance between fishing opportunities and fleet capacity.

In 2021-2027 Operational Program, the aim is primarily to balance fishing opportunities with fishing capacity, using specific objective 1.3 (To promote the balance between fishing capacity with fishing opportunities in case of permanent cessation of fishing activities and to contribute to ensuring adequate living standards in case of temporary cessation of fishing activities), and to contribute to increasing the environmental, economic and social sustainability of the activities of companies with sufficient fishing opportunities, using the means of specific objectives 1.1 and 1.2. Provided that the quality of sprat and herring stocks does not deteriorate significantly, the target is to continue sustainable fishing in the Baltic Sea by 2030, with a fishing capacity of around 60% of current capacity. According to the attached Action plan the most efficient, socially fair tool to reduce overcapacity in Baltic Sea large scale fleet segment NAO TM 24-40 would be scraping scheme with public compensation for permanent cessation of fishing.

A system of transferable fishing rights has been introduced in 2017 to balance excess capacity not permanently removed with the support of EMFF (European Maritime and Fisheries Fund) funds. Transferable fishing right system is applicable to all fleets, including distant fisheries. According to the existing practice, transferable fishing rights have been found as an effective policy instrument to control the balance between fleet capacity and fishing opportunities.

Weakness of fleet management system:

Despite the available compensation systems from EMFF for both permanent and temporary cessation of fisheries, as well as efforts to reduce fishing activity and lower TACs (Total Allowable Catches) for recovery of key species in the Baltic Sea and coastal area, the economic efficiency of Baltic and coastal fleet had a tendency to decline. Unfortunately, there was no observable surge in new investments or fleet renovation within the Baltic fleet. Instead, recent indicators point to a decline in capacity, capital productivity, and overall fleet profitability.

7. Changes to the administrative procedures relevant to the management of the fleet

No changes in administrative procedures relevant to the management of the fleet are observed.

8. Action plan

Action plan is attached.