ISSG Métier and transversal variable issues 2022

Background

The group has been ongoing since 2018, starting with a workshop discussing the methods used to assign métier codes to transversal data, issues and best practices, and the following years as an RCG ISSG, reports can be found here. Achievements from the ISSG over the years have been:

- Suggestion on new standardized and harmonized list of métier codes, which was approved by RCG's in 2020 and in the September 2020 Liaison meeting, it was agreed by the NCs that the new codes for métiers and reference lists can be used and implemented by the MS. Work has been done to include relevant selective devices in the codes. A table links between new and old codes (in cases that a mesh size range has been split up, a choice has been taken to link to one of them).
- Reference lists:
  - Reference species list on how to group species
  - Reference area list
  - Reference gear list
- Script that can assign métier codes using a specified data input format. It also has functionalities 1) to propose an estimate of métiers where all needed information are not available and 2) to refine the "rare" métiers firstly assigned by the general algorithm focusing on the year*vessel main métiers, in order to limit the multiplication of métiers calculated
- Manual explaining the background, script, input format and reference lists
- GitHub repository (RCGs/Metiers at master · ices-eg/RCGs (github.com)) where all the material is available (reports, métier list, reference lists, script, manual)

In 2021, the group changed name to 'ISSG on Métier and transversal variable issues', also including a task to look at effort calculations for the small-scale fisheries. The new métier codes were requested for the 2021 RDBES test data call, and it was recommended at the RCG NANSEA BALTIC that the ISSG should evaluate the data submitted and that the new métier codes should be implemented in other data calls: STECF FDI, ICES WGBYC, ICES VMS/Logbook). The ISSG is chaired by Josefine Egekvist, DTU Aqua, Denmark.

Work-plan

ToRs and work plan (specific tasks) for 2021/2022.

1. Follow up on and support implementation of métier codes and script (it should also be possible to include participants from outside EU). Approve and update métier list if new codes are needed.

2. When data have been submitted for the RDBES test data call, métier descriptions can be made (following up on 2019 work within the ISSG) and, in the future, it may be further developed in collaboration with the ISSG on RDB Catch, Effort and Sampling Overview

3. Continue testing the script on national data and improve the script if needed.

4. Collaborate with ISSG on SSF regarding
   a. métier assignment for the small-scale fishery to avoid MIS_MIS_0_0_0
   b. effort calculation (harmonize between different data calls if possible)

5. Collaboration with RCG MED&BS on métier codes

Progress during 2021/2022

The 2022 work

The ISSG had the following online meetings during the last year:

07-10-2021	Meeting with the ICES Data Center about métier codes governance
29-10-2021	ISSG on métier and transversal variables group meeting
14-01-2022	Subgroup meeting for planning data analysis of métiers submitted RBDES
01-02-2022	ISSG on métier and transversal variables group meeting
01-03-2022	ISSG on métier and transversal variables group meeting
01-04-2022	ISSG on métier and transversal variables group meeting
27-04-2022	ISSG on métier and transversal variables group meeting

Main outcomes and communication between the ISSG and other groups

- The ISSG followed up on the submission of métiers for the 2021 **RDBES** test data call using a data extraction from the RDBES by creating overviews, evaluated if the métier codes followed the RCG groupings and the number of MIS_MIS métiers.

- A dialogue was established on implementation of métier codes with other groups that have data calls requesting métier codes (**STECF FDI, ICES VMS/Logbooks, ICES WGBYC**).

- Collaboration with the **ISSG on SSF** was established regarding métier assignment for the SSF to avoid métiers classified as MIS_MIS_0_0_0 and effort calculation for the SSF was evaluated by reviewing existing reports on the subject.

- Collaboration with **RCG MED&BS** was established through a presentation at the RCG MED&BS meeting in September 2021 and a case study from Greece.

- Additionally, a link with the **RCG Econ** was established as they introduced a workshop on fleet segmentation using cluster analysis, based on landings of stocks that took place in March 2022.

- A procedure for managing métier codes was discussed with the **ICES Data Center**.

Task 1: Follow up on and support implementation of métier codes and script

The new métier codes were requested for RDBES 2021 test data call, which was evaluated by the ISSG.
In general, from discussions with groups that request métier codes in data calls, it was agreed that data calls in 2022 will allow both new and old codes. The new codes are recommended to be used in the future and it would be good to harmonize the codes across all data call. They are an improvement, as they are harmonized and don't have the overlapping codes regarding the mesh sizes. The problem is with the time series, and if new codes can be requested back in time, which is up to those responsible of each data call to decide. It is the

intention that the RDBES will replace or feed into most of the current data calls, and in that way, the new codes will come in through this database.

REVIEW OF MÉTIERS SUBMITTED FOR THE RDBES 2021 TEST DATA CALL

In 2021, the new métier codes were requested for the RDBES test data call. RDBES CE data was submitted with the new métier codes by 23 flag country codes, including 14 European Union countries (Belgium, Denmark, Estonia, Finland, France, Germany, Ireland, Latvia, Lithuania, Poland, Portugal, Spain, Sweden, The Netherlands) as well as Great Britain (uploaded as United Kingdom, England, Scotland, Northern Ireland, Wales, Isle of Man, Guernsey and Jersey) and Norway for the period 2018-2020.

The ICES Data Center has provided a data extraction from the test data call from the CE data with the columns 'country', 'year', 'area', 'nationalFishingActivity', 'Metier6', 'vesselLengthCategory' and 'officialFishingDays'. **A major caveat regarding the RDBES data is that it was a test data call, and some countries haven't uploaded data for the total fleet or fixed all the MIS_MIS issues.**

From the uploaded data, an analysis was made to evaluate the correspondence between RCG groupings and métier codes, and it is all correct. In addition, analysis of top 5 métiers used by region was made. The data also showed that there are a number of cases where there is two or less fishing days for a métier code.

A check for 2 or less fishing days within a métier could be added to a RDBES QC script.

The number of MIS_MIS métiers reported in the test data call was not very high in general or for the vessels less than 12 m. This might be related to some countries that didn't submit all effort data in this test data call. The possibility to specify the target group in combination with the MIS gear in the métier code has not been used widely.

OVERVIEWS OF MÉTIERS UPLOADED FOR THE 2021 RDBES TEST DATA CALL

The Figure 1 shows the number of métier codes submitted for each country, and by year. The vessel flag countries within UK (Wales, Guernsey, Jersey etc.) have been grouped to UK.
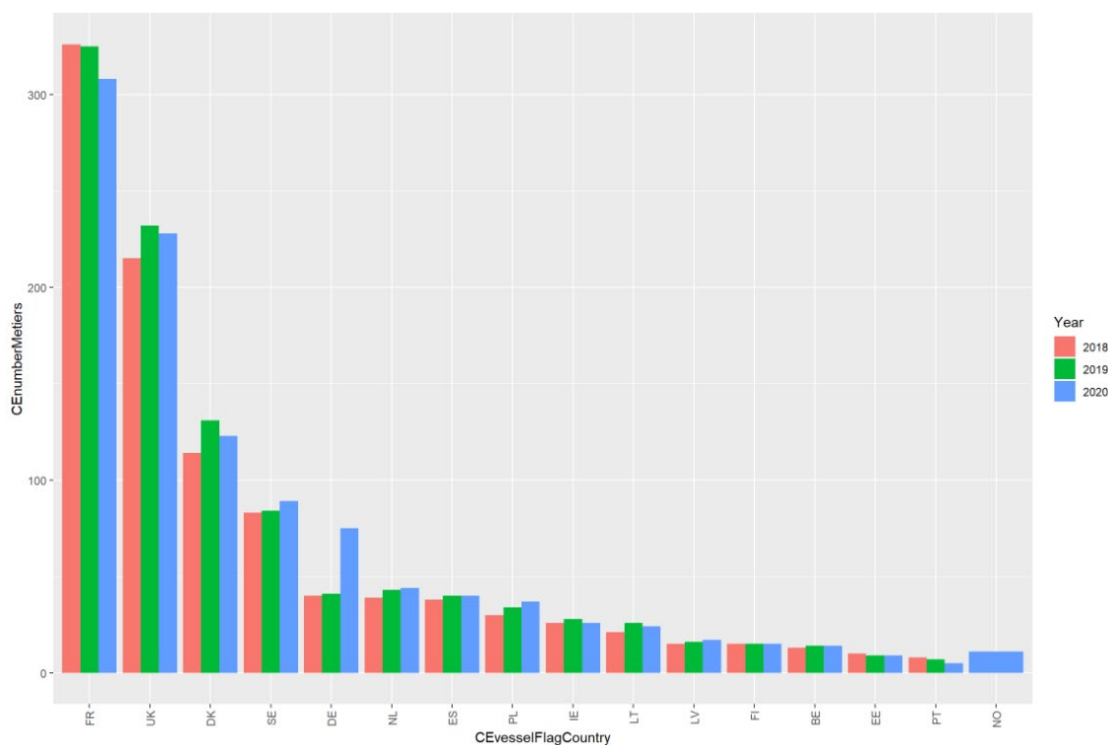
Number of RDBES Metiers

Figure 1: Number of métier codes submitted by country for the 2021 RDBES test data call.

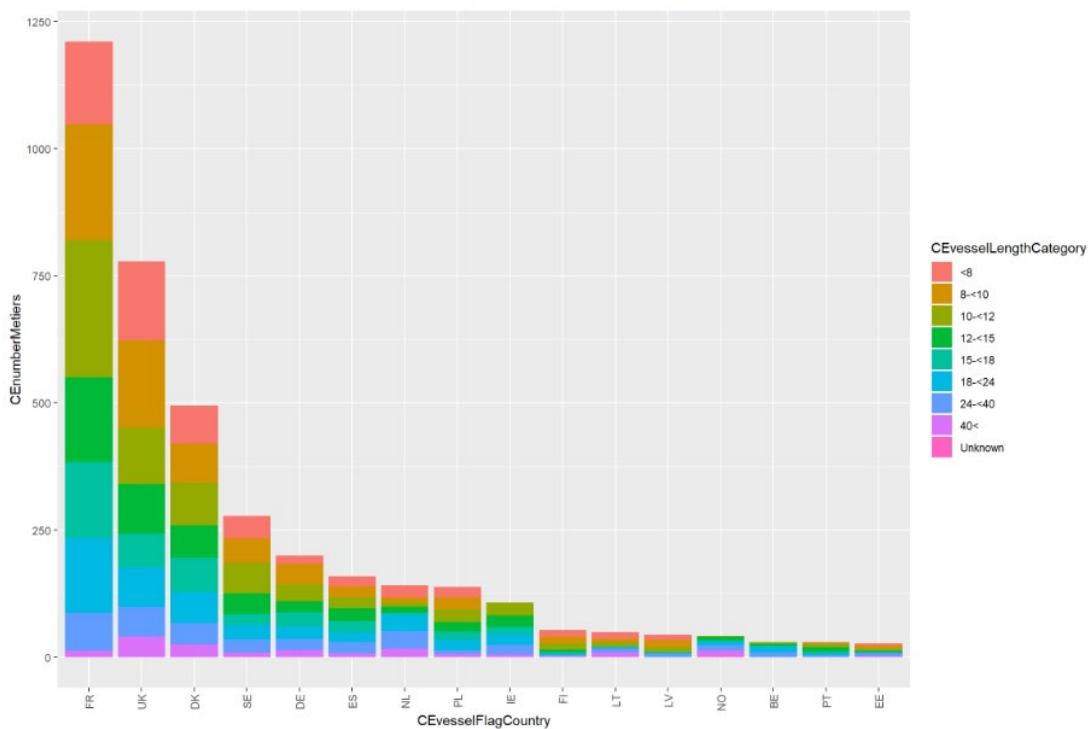## Number of RDBES Metiers by country (all years)

Figure 3: Number of métiers by country and vessel length group.

CORRESPONDENCE WITH THE RCG GROUPING

The data submitted was allocated to the respective RCG region based on the FAO area to check if the métier codes submitted correspond with the Regional Coordination Groups in the métier list (as there was not a check for this during the data submission). There is no overview for the Large Pelagic Regional Coordination Group because the available data did not include detailed information on the species. The number of unique métiers and countries per Regional Coordination Group are presented in Table 1.

Table 1: Number of unique métier codes and number of countries submitting data by RCG and year

Regional Coordination Group	2018		2019		2020	
	Unique métier number	Number of countries	Unique métier number	Number of countries	Unique métier number	Number of countries
Baltic (BALTIC)	117	8	122	8	119	8
Long Distance Fisheries (LDF)	4	1	4	1	4	2
Mediterranean and Black Sea (MED&BS)					1	1
North Atlantic (Natl)	316	12	315	14	297	15
North Sea and Eastern Arctic (NSEA)	268	13	280	13	273	14

It is noticeable, that requested data was only for ICES areas. As such, for LDF and MED&BS data was submitted on a voluntary base. Due to insufficient obtainable data for LDF and MED&BS, no further analyses are made for the Regional Coordination Groups. The figures and tables below illustrate the top 5 metiers regarding the effort data (fishing days).

5 TOP METIERS FOR 2018-2020 (RCG BALTIC)

- GNS_FWS_>0_0_0
- GNS_DEF_110-156_0_0
- FYK_FWS_>0_0_0
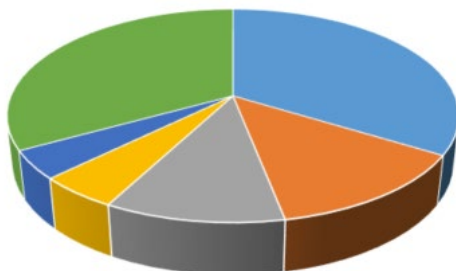- OTM_SPF_16-31_0_0
- FYK_ANA_>0_0_0
- Other

Figure 3: The top 5 métiers for the RCG Baltic from the RDBES submitted data in fishing days (total 2018-2020)

Table 2: The top 5 métiers for the RCG Baltic from the RDBES submitted data in fishing days (total 2018-2020)

Métier (RCG Baltic)	2018-2020	
	Fishing days	% of total fishing days
GNS_FWS_>0_0_0	317700	34
GNS_DEF_110-156_0_0	123971	13
FYK_FWS_>0_0_0	102077	11
OTM_SPF_16-31_0_0	46399	5
FYK_ANA_>0_0_0	39996	4
Other	311140	33

5 TOP METIERS FOR 2018-2020 (RCG NSEA)

- FPO_CRU_>0_0_0
- DRB_MOL_>0_0_0
- TBB_CRU_16-31_0_0
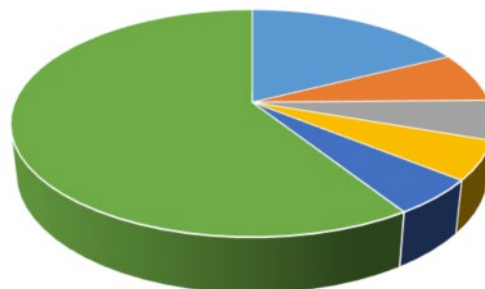- OTB_DEF_>=120_0_0
- GNS_DEF_120-219_0_0
- other

Figure 4: The top 5 métiers for the RCG North Sea from the RDBES submitted data in fishing days (total 2018-2020)

Table 3: The top 5 métiers for the RCG North Sea from the RDBES submitted data in fishing days (total 2018-2020)

Métier (RCG NANSEA)	2018-2020	
	Fishing days	% of total fishing days
FPO_CRU_>0_0_0	241180	18
DRB_MOL_>0_0_0	97394	7
TBB_CRU_16-31_0_0	77059	6
OTB_DEF_>=120_0_0	75332	5
GNS_DEF_120-219_0_0	70208	5
Other	809160	59

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5 TOP METIER FOR 2018-2020 (RCG NATL)

- DRB_MOL_>0_0_0
- FPO_MOL_>0_0_0
- OTB_DEF_70-99_0_0
- FPO_CRU_>0_0_0
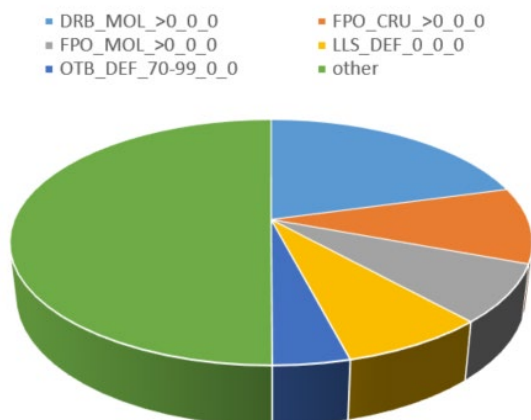- LLS_DEF_0_0_0
- other

Figure 5: The top 5 métiers for the RCG North Atlantic from the RDBES submitted data in fishing days (total 2018-2020)

Table 4: The top 5 métiers for the RCG North Atlantic from the RDBES submitted data in fishing days (total 2018-2020)

Métier (RCG Baltic)	2018-2020	
	Fishing days	% of total fishing days
DRB_MOL_>0_0_0	635695	21
FPO_CRU_>0_0_0	307210	10
FPO_MOL_>0_0_0	233916	8
LLS_DEF_0_0_0	233511	8
OTB_DEF_70-99_0_0	123118	4
other	1536848	50

In the Baltic region (Figure 3 and Table 2), the most intensive fishery with regards to effort, is observed for passive gears or pelagic trawlers (top 5 métiers). However, in that fishery most part of the vessels have a length below 15 m. In North Sea and North Atlantic regions, the top 5 métiers are composed by very different gear types (dredgers, pots, longlines and demersal trawls).

Métiers with two and less fishing days account for 7.5 %, 9.6% and 12.3 % of total unique number of métiers for Baltic, North Atlantic and North Sea respectively. It might be questioned if such rare métiers will be used for any analyses. Such cases are observed in Germany, Finland, Sweden and Denmark in the Baltic region and in Germany, Sweden, Denmark, France, Lithuania, Great Britain, the Netherlands and Ireland in the North Atlantic and North Sea regions.

Table 5: List of rare métiers with the number of fishing days reported for each region

BALTIC		NAtl		NSEA	
Métier	Fishing days	Métier	Fishing days	Métier	Fishing days

GNS_LPF_>=220_0_0	1	SDN_DEF_16-31_0_0	0.01	TBB_CEP_>0_0_0	0.04
GTR_DEF_90-109_0_0	1	OTT_CRU_65-69_0_0	0.02	TBB_CEP_90-99_0_0	0.22
OTB_DEF_>0_0_0	1	OTB_DWS_16-31_0_0	0.06	GTR_CEP_10-30_0_0	0.25
PS_SPF_>=14_0_0	1	GNS_LPF_70-79_0_0	0.33	OTM_CEP_100-119_0_0	0.48
PTB_DEF_<16_0_0	1	OTM_SPF_>=120_0_0	0.38	GNS_CRU_10-30_0_0	0.5
PTB_SPF_>0_0_0	1	OTB_CRU_65-69_0_0	0.5	MIS_CAT_0_0_0	0.5
PTM_SPF_<16_0_0	1	OTB_DEF_32-69_0_0	0.5	GND_DEF_>=220_0_0	1
SSC_DEF_>=120_0_0	1	SB_DEF_>0_0_0	0.5	GND_SPF_>=220_0_0	1
GTR_SPF_>0_0_0	2	TBB_DEF_40-54_0_0	0.5	GNS_SPF_31-39_0_0	1
OTM_SPF_40-54_0_0	2	FYK_DEF_>0_0_0	1	GTR_CRU_71-89_0_0	1
PTM_DEF_>=120_3_120	2	GND_ANA_>0_0_0	1	LHM_CEP_0_0_0	1
		GNS_LPF_90-99_0_0	1	LHP_LPF_0_0_0	1
		GTR_CRU_10-30_0_0	1	MIS_CEP_0_0_0	1
		GTR_CRU_31-39_0_0	1	MIS_LPF_0_0_0	1
		OTB_CEP_70-89_0_0	1	OTB_CRU_90-99_2_35	1
		OTT_CEP_16-31_0_0	1	OTB_DWS_70-89_0_0	1
		OTT_CEP_32-39_0_0	1	OTB_MOL_100-119_0_0	1
		OTT_CEP_55-64_0_0	1	OTM_SPF_32-39_0_0	1
		OTT_CRU_90-99_0_0	1	OTT_DEF_>0_0_0	1
		PS_LPF_>=120_0_0	1	OTT_DEF_100-119_1_120	1
		PTM_SPF_55-64_0_0	1	PS_SPF_>=120_0_0	1
		TBB_CRU_40-54_0_0	1	PTB_SPF_70-89_0_0	1
		TBB_DEF_<16_0_0	1	PTM_SPF_100-119_0_0	1
		TBB_MOL_100-119_0_0	1	SDN_DEF_90-99_0_0	1
		OTT_DEF_<16_0_0	1.02	OTB_SPF_>0_0_0	1.18
		GNS_DWS_120-219_0_0	2	OTM_SPF_>0_0_0	1.5
		MIS_CEP_0_0_0	2	PTB_DEF_32-69_0_0	1.5
		OTB_CRU_90-99_0_0	2	GTR_DEF_10-30_0_0	1.79
		OTT_CEP_>0_0_0	2	OTM_CEP_>0_0_0	1.99
		PTB_CRU_40-54_0_0	2	GND_DEF_70-79_0_0	2
		PTM_SPF_<16_0_0	2	GNS_CRU_80-89_0_0	2
		TBB_CEP_70-89_0_0	2	OTB_MOL_16-31_0_0	2
		TBB_CRU_>=120_0_0	2	OTM_CEP_<16_0_0	2
		TBB_DEF_55-64_0_0	2	OTM_DEF_40-54_0_0	2
				OTT_MCD_90-99_0_0	2

				PTB_CRU_70-89_0_0	2
				PTB_DEF_16-31_0_0	2
				PTB_SPF_100-119_0_0	2
				PTB_SPF_32-69_0_0	2
				PTM_DEF_>=120_0_0	2
				SDN_SPF_70-99_0_0	2

MEETING WITH ICES DATA CENTER (OCTOBER 2021)

A meeting was arranged with the ICES Data Center to discuss the management of métier codes in October 7th 2021 with the following conclusions:

- ICES can set up a system for managing the métier codes and relations between codes. Codes are managed through an ICES GitHub under DIG.
- Relations between different levels of métier codes and RCG regions can be set up in the system. The codes can be referred to in the ICES vocabularies, which also have a web service API that can be called e.g. from R-scripts.
- The RCG ISSG métier group will still have the expertise knowledge to approve new codes. A list of contact persons from the ISSG have been established to ease the approval process.
- Transition from old to new codes in data calls was discussed, i.e. if time series should be resubmitted or links between old and new codes should be established. This needs to be discussed and agreed by the groups that manage the different data calls (e.g. governance groups). Regarding the link between old and new métier codes: In some cases, there are no changes in the codes, in other cases the mesh size range have been split up. If it is decided to work with mapping between new and old codes in a data call, countries should be involved, as there can be some country specific issues, e.g. in the Baltic.
- The ICES secretariat will set up a GitHub project board for approving codes which can help in the management of codes between the ISSG and the ICES secretariat. Once the decision is made by ISSG, the responsible ISSG contact person will right after contact the requester and inform what decision the ISSG has made. If adding new codes is necessary, the procedure is to write to accessions@ices.dk which will reach the ICES Data Centre.

- The ISSG contact persons are Josefine Egekvist (jsv@aqua.dtu.dk), Sébastien Demanèche (sdemanec@ifremer.fr) and Karolina Molla Gazi (karolina.mollagazi@wur.nl). The general rules used for harmonization and standardization of the métier codes are listed below. When a new code is requested by a MS, it needs to be checked if it follows the set of rules established by the group, and confirmed with the other contact persons, with a short deadline for reply. If it follows the rules, the new code can be accepted, otherwise the reasoning for such proposal should be discussed within the ISSG group, to agree on a final decision.

Principles for defining métier codes:

- Métier level 5 codes defined by RCG region
- Gear-mesh size combinations follow EU-MAP
- No overlapping mesh size ranges

- Standardized mesh size ranges for active and passive gears
- _0_0_0 for no mesh size (e.g. longlines), _>0_0_0 for unknown mesh size
- Possibility of including relevant selection devices
- Unknown gear MIS_MIS_0_0_0, agreed to allow for e.g. MIS_DEF_0_0_0, MIS_CRU_0_0_0 etc. in case the catch composition is known from e.g. sales notes, but the gear is unknown

STECF FISHERIES DEPENDENT INFORMATION (FDI) MEETINGS 2021

The FDI meeting in May/June made a questionnaire filled in by country to report on data sources used for large-scale fisheries and small scale fisheries and metrics (weight or value) used for assigning target species assemblage code. The conclusion was that for large-scale fisheries, métier codes are mostly assigned using logbook information, but some countries combine with other data sources, e.g. sales notes, sampling data or scientific survey data. For assigning métiers to the small-scale fishery (vessels <10 m or <8 m in the Baltic where the EU Control Regulation does not require logbooks), there is a variation in the data sources used and, in some cases, strong assumptions are applied due to the lack of relevant data (e.g. small scale fishing fleets where only sales notes are available). The most common data sources available are small scale fleet-specific declarations (e.g. monthly fishing forms, coastal logbooks) collected in a census approach and others have only access to the sales notes or sampling data. Some member states combine different datasets to improve the métier estimation and/or confirm the assumptions applied. The most common metric in assigning the target species assemblage group is weight. Value of landings is used by some countries, and in a few cases, it is recorded directly in logbooks.

The use of the new métier codes for the FDI data call in 2022 was discussed in both FDI meetings. The time of the meeting was before the deadline of the ICES RDBES test data call for 2018-2020 data for all fisheries, so the use of the new métier codes had not been evaluated yet. Therefore, it was agreed that for the FDI data call in 2022, it should be made possible to upload new métier codes as proposed by the RCG ISSG on Métier issues, but also still be possible to upload the old métier codes.

ICES VMS/LOGBOOK DATA CALL

For the ICES VMS/Logbook data call, the same approach regarding the use of métier codes as for the FDI was taken: it should be made possible to upload both the new and old métier codes. The GitHub containing the scripts, reference lists and reports has been linked to in the ICES VMS/Logbook workflow description for data preparation and submission.

ICES WGBYC DATA CALL

The work of the ISSG on Métier issues was presented to the ICES WGBYC data call subgroup. The métier level 6 is currently not mandatory in the WGBYC data call, only métier level 3, 4 and 5. Work is ongoing for the RBDES to take over from the WGBYC data call (where the new métier codes are requested) within a few years.

Note: there can be issues assigning the métier level 6 code for non-EU countries.

Task 2: Métier descriptions

For this term, there is a task to make métier descriptions, but as the 2021 data call was a test data call, it is not possible to make meaningful métier descriptions from that.

In 2019, a markdown script was developed to make a word report for each métier. Considering the number of métiers, following this approach could result in 1000 documents. The group found it relevant to create public métier reports, as they could be useful for new data submitters. They could be structured as one report by RCG and by métier level 4, making outputs similar to the examples created by the ISSG in 2019 (see **Annex 1**). It is suggested to follow a hierarchical structure, starting from level 4 (by gear group), moving down to level 5 (including target species assemblage groups) and ending in the level 6 including the mesh size ranges and selection devices. The report needs to be in a format that can be publicly available.

This could be done in collaboration with the ISSG on RDB Catch, Effort and Sampling Overviews, or as separate work from this ISSG.

Task 3: Test and improve script

A markdown comparing the new and old métier codes has been made for Danish data, where small-scale fisheries only have sales notes, and therefore initially ending up in MIS_MIS, which is then classified into métiers by the script, by finding dominant métiers in a hierarchy of grouping.

Following tests were made in R-markdown:

- For some species that are fished by specific métiers, do they end up in expected métier codes (including mesh sizes)?
- Tables for each gear group with following columns: new métier code, old métier code, target assemblage group, gear, fleet register gear and ton.
- Bar charts by new métier code, showing the old métier codes and the field indicating at which level the métier was assigned.
- An overview of the métier codes assigned by year for the whole time series to check for consistency.

To improve the results, an additional grouping can be added to the levels where the missing métiers are assigned: the dominant species of the sequence (e.g. haul or trip). Using this grouping improves the assignment to mesh size ranges.

The script developed by this group was also tested by Portugal, for assigning métiers to SSF. The comparison of the results obtained with this script and the ones using national script, indicate that this last one is more efficient in the classification of the national métiers. So, they decided to continue with the national approach.

Task 3: Collaboration with ISSG on SSF

MÉTIER ASSIGNMENT FOR THE SMALL-SCALE FISHERY TO AVOID MIS_MIS_0_0_0

It was discussed that the MIS_MIS did not show up as a major problem in the SSF in the RDBES data extraction. However, it's possible that all data might not have been submitted in the CE data. The ISSG SSF will also meet and discuss this. The métier script has steps to handle cases where the logbooks are missing, but e.g. the sales notes are available to find the dominant métier within a hierarchy of groupings.

Data submitted for the RDBES test data call with missing métier.

When the métier is unknown, it is possible to report a missing métier (MIS), which can be either MIS_MIS_0_0_0 meaning that the gear, target species assemblage, mesh size range and selection device is unknown. If the gear is unknown but the target assemblage group is known (e.g. from sales notes), it is also possible to report as e.g. MIS_DEF_0_0_0 or MIS_CRU_0_0_0 etc.

It has to be emphasized that the 2021 RDBES data call was launched as a TEST data call, and therefore the data that countries have submitted are of varying quality: some MS have submitted as if it was a real data call, others have experimented and tested different codes, etc.

Period	CEmetie	NB_Count	sumCEofficialFishingDa	NBtot_Count	TotsumCEofficialFishingDa	Per_Count	Per_sumCEofficialFishingDa
2018-2020	MIS	16	74 582	23	5 380 951	70	1.4

7 flag countries did not provide any MIS métier: Belgium, Estonia, Germany, Jersey, Latvia, Lithuania and Poland. The 16 other flag countries have at least one row provided with a MIS métier.

In general, for the period 2018-2020, 1.4% of the total fishing days provided is a MIS métier.

CEye	CEmetie	NB_Count	sumCEofficialFishingDa	NBtot_Count	TotsumCEofficialFishingDa	Per_Count	Per_sumCEofficialFishingDa
2018	MIS	14	25 116.0	22	1 863 524	64	1.3
2019	MIS	14	25 567.3	22	1 858 358	64	1.4
2020	MIS	15	23 898.5	23	1 659 069	65	1.4

The percentage of the total fishing days provided with a MIS métier is stable from 2018 to 2020 (1.3% to 1.4%). It represents in total around 25 000 fishing days each year. The number of countries providing MIS métiers is also stable from 2018 to 2020 from 14 to 15 taking into account that Norway only provided data for the year 2020.

Period	CEves	CEvesse	CEr	NB_Country	sumCEofficialFishingDays	NBtot_Country	TotsumCEofficialFishingDays	Per_Country	Per_sumCEofficialFishingDays
2018-2020	VL0008	<8	MIS	12	24 304	19	1 783 030	63	1.4
2018-2020	VL0810	8-<10	MIS	11	20 307	18	869 393	61	2.3
2018-2020	VL1012	10-<12	MIS	9	10 774	20	670 940	45	1.6
2018-2020	VL1215	12-<15	MIS	11	4 659	19	410 373	58	1.1
2018-2020	VL1518	15-<18	MIS	9	3 595	21	382 377	43	0.9
2018-2020	VL1824	18-<24	MIS	10	5 366	20	544 831	50	1.0
2018-2020	VL2440	24-<40	MIS	9	4 637	19	568 571	47	0.8
2018-2020	VL40XX	40<	MIS	8	97	15	150 591	53	0.1
2018-2020	VLXXXX	Unknown	MIS	1	843	1	844	100	99.9

The rows provided without any vessel length information (Unknown) have been almost entirely provided with the MIS métier.

Smaller vessels *(less than 12 meters)* have more data provided with a MIS métier (from 1.4% to 2.3%) than larger vessels *(more than 12 meters)* (from 0.1% to 1.1%) but the difference is minor. The vessel length with the smallest percentage of Fishing days provided with a "MIS métier" is the larger than 40 meters' vessels (0.1%). Additional analysis show that the percentages remain stable over the period.

Much more differences are observed between countries for the 16 flag states with at least one row provided with a MIS métier.

Six countries have provided MIS métiers for less than 0.1% of their total Fishing days. Five countries have provided MIS métiers for more than 0.1% but less than 1% of their total Fishing days. Three countries have provided MIS métiers for more than 1% but less than 5% of their total Fishing days. Two countries provided MIS métiers for more than 5% of their total Fishing days. These percentages are relatively stable from 2018 to 2020.

At this stage, these percentages should be put into perspective considering the fact that some countries provided few or no data for their small scale fisheries *(less than 12 meters length)*, and these are the ones for which it is known that the assignment of the métier is more difficult to perform.

Generally, the group of vessels with less than 12m vessels is the one with the higher number of rows with a MIS métier allocated.

Finally, the possibility given to countries to provide the targeted group of species with a MIS métier has not been widely used. The table below shows the percentage MIS métier with different target species assemblage group assigned.

Period	CEmetie	CEmetier	NB_Ye	NB_Count	sumCEofficialFishingDay	NBtot_Ye	NBtot_Count	TotsumCEofficialFishingDay	Per_Yea	Per_Counti	Per_sumCEofficialFishingDay
2018-2020	MIS	MIS_MIS	3	15	50 568	3	16	74 582	100	94	68
2018-2020	MIS	MIS_MOL	3	4	15 191	3	16	74 582	100	25	20
2018-2020	MIS	MIS_SWD	3	1	5 013	3	16	74 582	100	6	7
2018-2020	MIS	MIS_DEF	3	5	1 699	3	16	74 582	100	31	2
2018-2020	MIS	MIS_SPF	3	6	907	3	16	74 582	100	38	1
2018-2020	MIS	MIS_DES	3	2	659	3	16	74 582	100	13	1
2018-2020	MIS	MIS_CRU	3	5	326	3	16	74 582	100	31	0
2018-2020	MIS	MIS_CAT	3	2	178	3	16	74 582	100	13	0
2018-2020	MIS	MIS_ANA	2	2	38	3	16	74 582	67	13	0
2018-2020	MIS	MIS_CEP	3	1	3	3	16	74 582	100	6	0
2018-2020	MIS	MIS_LPF	2	1	1	3	16	74 582	67	6	0

Almost all the countries providing a "MIS métier" use the code "MIS_MIS" *(15/16 countries)*. **MIS_MIS** métier represents **68% of the total Fishing Days provided** with a MIS métier. **MIS_MOL** is used by 4 countries and represent **20%** of the total Fishing Days provided. **MIS_SWD** by one country for **7%** of the total Fishing Days provided. The other combination represents less than 3% of the total Fishing days provided. MIS_SPF is the combination used by more countries (6 countries) after MIS_MIS.

Data submitted for FDI data call 2020 (requesting old métiers)

The table below shows the data submitted for the FDI data call 2020, requesting old métiers, by vessel length group and RCG. It is a sum of 2015-2019 data and is based on the data publicly available from STECF. Overall, the percent of fishing days with métiers assigned to MIS (both MIS_MIS_0_0_0, missing métiers with target assemblage and métiers assigned as NA) is 0.9% in the Baltic Sea, 13.8% in the North Sea and Eastern Arctic, 17.4% in the North Atlantic, 22.3% in the Mediterranean and Black Sea and 41.6% in the Long distance fisheries. In total, 18.2% of fishing days were classified as MIS métier.

RCG/Vessel length	FD Métier assigned	FD MIS	% MIS
BALT	**15007**	**136**	**0.9**
VL0010	6799	126	1.8
VL1012	3256	7	0.2
VL1218	2263	2	0.1
VL1824	1360		0.0
VL2440	1127	1	0.1
VL40XX	202		0.0
LDF	**6619**	**4711**	**41.6**
VL0006	1	3	75.0
VL0010	2530	1544	37.9
VL0612	22	38	63.3
VL1012	727	645	47.0
VL1218	729	665	47.7
VL1824	275	477	63.4
VL2440	1310	807	38.1
VL40XX	1025	532	34.2
MED&BS	**24006**	**6896**	**22.3**
VL0006	3513	820	18.9

VL0010	20	9	31.0
VL0612	8753	2374	21.3
VL1012	10	10	50.0
VL1218	6254	1811	22.5
VL1824	3125	995	24.2
VL2440	2264	867	27.7
VL40XX	67	10	13.0
Natl	**69765**	**14668**	**17.4**
VL0010	18458	4903	21.0
VL0612	5	38	88.4
VL1012	13474	2435	15.3
VL1218	14300	2661	15.7
VL1824	11527	2286	16.5
VL2440	10782	2117	16.4
VL40XX	1219	228	15.8
NSEA	**30368**	**4846**	**13.8**
VL0010	9556	2431	20.3
VL1012	5286	779	12.8
VL1218	5366	493	8.4
VL1824	3994	279	6.5
VL2440	3510	451	11.4
VL40XX	2656	413	13.5

EFFORT CALCULATION IN SSF

For the task on effort calculation for the small-scale fisheries (harmonize between data calls, if possible), a review was made of previous reports that have made tables of data availability and methods (document attached). In general, the conclusion is that methods for reporting vessel fishing days have been discussed and are used for answering data calls for the small-scale part of the fleet (vessels <10 m or <8 m in the Baltic where the EU Control Regulation does not require logbooks): 1 trip = 1 day at sea = 1 fishing day. If the vessel has logbooks, the effort is based on the information reported in the logbooks. The main issue is that relevant effort measures for passive gears, that are often found in the SSF are not available (soaking time, net length, number of hooks etc.) according to what is mandatory in the EU Control Regulation, but should be available according to the EU-MAP. In the new RDBES format there is a possibility to report scientific effort. This effort is not directly obtained from official sources, but is instead estimated using a procedure and possibly other data sources available.

The issue has been evaluated and discussed at various meetings, and relevant conclusions are extracted below. In many of the below mentioned reports, there are tables giving overviews of data availability for the SSF and how fishing effort have been assessed for answering data calls.

2017 PGECON subgroup DCF workshop on small scale fisheries

Workshop reports - European Commission (europa.eu)

Section 3.3 Data needs in relation to peculiarities of small-scale vessels (ToR 3) and Suggested data collection procedures for SSF (ToR 5)

Table 3.3-1 is a summary table of gathered effort variables by country and type of data collection for SSF. It shows that most countries use the assumption that **1 trip = 1 day at sea = 1 fishing day**.

Based on presentation given during workshop 12 of the 15 countries use census type data collection schemes for SSF (sometimes combined with a sampling approach). Mostly completing logbooks, journal or monthly reports under a legal basis based on established national legislation with control purposes. In these cases, effort and landing data are assumed to be accurate and consistent and are assumed to cover the whole of the reference population. Nevertheless, these assumptions need to be validated notably by implementing a complete data quality assurance and quality control procedure (including, among other things, input error detection, reliability of self-reporting data, completeness/coverage of the information collected and other bias issues). The group highlighted that the different data formats of adapted declarative forms (e.g. coastal logbooks, journals, monthly reports, etc. as EU logbooks are not suitable with the specific features of this fleet) existing across Member States and stored in different ways, create challenges to the standardization of calculation of fishing activity variables between MS especially for fishing effort and encouraged MS, for sake of consistency and comparability, to share procedures and principles in used in order to pursue this objective.

The report has a section 3.3.4.2.1 on specifities and difficulties raised using a SSF data collection system based mainly on sales notes. There can be some uncertainty if all landings are reported and information on gear, mesh size, gear dimension and more precise location of the fisheries are missing.

WGCATCH 2017 Annex 14 ToR b.1) Compilation of information on effort calculation

Report of the Working Group on Commercial Catches (WGCATCH) (ices.dk)

For passive gears (gillnets and entangling nets, pots and traps, handlines, longlines, etc.), the WGCATCH subgroup agrees with the main conclusion of the 2nd workshop on Transversal Variables which highlighted that Fishing Days are not a meaningful effort measure for passive gears. This particularly true for the cases of those gears in the water and fishing after the vessels come back to the harbour. In that case, the fishing effort estimates and CPUE have to be linked with the 'gear soaking time'. However, this is not a mandatory variable in the logbooks and this information might be not asked or available in some ongoing SSF data collection systems. WGCATCH recommends that the need to collect this additional variable is regionally agreed in the Regional Coordination Groups (RCG) system of the new DCMAP but considers the difficulties involved in collecting this type of data and that data collection should be adapted to the specific features of SSF and ongoing data collection systems. Nevertheless, it is advised that "vessel' fishing days" keep being requested as an effort measure, despite their limitations, to ensure comparisons are possible with the other gears (active gears). The WGCATCH subgroup suggests that "vessel' fishing days" are calculated for all trips (as a basic effort measures linked with the "vessel' fishing effort" deployed) even if it is not necessarily fully linked with the gear' fishing effort, in particular for passive gears.

With regards to gear dimension (total length of nets, total number of pots/traps and total number of hooks), WGCATCH 2017 emphasized the WGCATCH 2016 statement that these variables are of high importance, especially concerning passive gears, and encourages countries to collect and improve the quality of such data even in cases where they are optional for less than 10m vessels.

The WGCATCH subgroup agrees with the commonly assumption that less than 10 meters vessels have generally a daily activity and that, for them, it could be assumed that 1 Trip is equivalent to 1 Day at Sea also equivalent to 1 Fishing Day as far as no other data contradicts this hypothesis. Nevertheless, the WGCATCH highlights that this assumption needs to be assessed both regionally and by fishery because significant differences can occur.

WGCATCH 2018 5.2.1 & Annex 14 ToR b.1) Compilation of information on effort calculation

WGCATCH continue to discuss this issue during the 2018 meeting and a summary of the methodologies used by ICES countries to calculate SSF and passive gears fishing effort could be found in the 2018 WGCATCH report.

Based on that, WGCATCH underline some difficulties remaining to apply the standard methodology *(''Nicosia methodology'')* to calculate fishing effort for SSF *(detailed in the report)* and conclude that even though methodologies applied in ICES countries are in line as far as possible with standard some difficulties remain which mean that it has to be adapted in order to take into consideration SSF' special features and ongoing data collection systems *(data available and the way to collect them)*:

* ❖ **'Vessel fishing days'** have to be calculated on a **'day by day' basis** rather than on a 'trip by trip' basis
* ❖ **"24h period definition" for SSF' days at sea is not applied in most of the countries**. Following assumption *(and conversely)* is favoured: *'1 day at sea = 1 fishing day = 1 trip (= 1 sale note)'* as far as no other data contradict this hypothesis
* ❖ **Difficulties remain** to obtain **gear information** in particular the gear dimension *(especially for multi gear trips and countries using sales note or landings declaration to follow SSF, for them sampling survey could be a way to estimate them)*

Finally, it has been also underlined that for **passive gears fishing effort**, **gear-soaking time** and **gear-dimension** should be also **required** to accurately estimate the fishing effort.

Overall, it can also be concluded that MS tried, for SSF fishing effort estimates calculation, to keep in line as far as possible with the "Nicosia" methodology established for vessels carrying logbooks considering also: 1) the specific features of SSF and 2) the data available and the way to collect them.

STECF 21-12 – FDI report 2021

Section 5.1.5 on Coverage and methods used to estimate landings and effort data for vessels <10m

In table 3.1.5.1 the sources of data and methodologies applied by Member states in order to estimate SSF' (less than 10m, no logbooks vessels) fishing activity data (landings by species and fishing effort data by vessel, quarter, gear/métier and area) are presented. It also lists the different assumptions and methodologies applied to answer FDI data call and first comments on data quality/coverage.

According to the table, the census approach (exhaustive collection of fishing activity data through declarative forms) is the most common approach used by countries to collect data on SSF (17 countries). Only four countries (France, Greece, Italy and Portugal; some of them for part of their SSF fleet) are using other approaches (sampling approach or combined) to provide SSF fishing activity data as declarative data in these countries are not available (because there is no obligation in the control regulation4) or coverage and precision of this data are insufficient and incomplete and are judged insufficient and unreliable to meet the end-user's data needs (e.g., DCF requirements).

Countries using declarative forms to assess SSF fishing activity data may adopt different approaches. In some countries the same approach (logbooks) for fishing activity data collection as for LSF is used. In other countries, specific declarative forms (monthly fishing forms, coastal logbooks, fishing reports …) adapted to the special

features of the national SSF fleet but less precise (daily or monthly declaration) are applied. Finally, some countries have access only to SSF sales notes. The less detailed information on the SSF fishing trips are available, the more assumptions needed to be applied by Member States to estimate/calculate the fishing activity data. In some cases, when limited information exists to estimate the "métier/gear/mesh size" of the small-scale vessels, data are assigned to the "MIS_MIS" métier. **To estimate small scale fleets fishing effort a lot of countries applied the following assumption: "(1 sales note) = 1 fishing day = 1 days at sea".**

ICES WKSSFGEO 2021

Publication Reports - Workshop on Geo-Spatial Data for Small-Scale... (ices.dk)

The workshop on high-resolution geo-spatial data for the small-scale fisheries looked into how the use of high-resolution spatial data (AIS/GPS etc.) can help informing the effort for the small-scale fisheries, e.g. detailed fishing location, vessel fishing effort, net length (if positions are classified correctly) and soaking time (if setting and hauling can be linked).

EU MAP (2021/1167)

It is specified in the EU-MAP (2021/1167) section 3.1 that all variables listed in table 6 should be reported for all fleet segments. Where there is no obligation under the control regulation (1224/2009) to the record these data, or where these data do not meet the coverage, resolution and/or quality of the end users, alternative appropriate sampling methods shall be applied.

<div align="center">

Effort

</div>

Days at sea	Days
Hours fished (optional)	Hours
Fishing days ([2])	Days
kW * Days at sea ([3])	Number
GT * Days at sea ([4])	Number
kW * Fishing days ([5])	Number
GT * Fishing days ([6])	Number
Number of trips ([7])	Number
Number of fishing operations	Number
Length of nets (m) * soak time (days)	Metres-days
Number of nets/length ([8])	Number/metres
Number of hooks, number of lines ([9])	Number
Numbers of pots, traps ([10])	Number
Number of FADs/buoys	Number
Number of support vessels	Number

Conclusion and recommendations from the ISSG

There has been work done in several meetings to get an overview of the effort calculations for the SSF and the data sources available by different countries. This shows that for the SSF, the data collection is not as standardized as for the LSF, so different approaches are used, mainly monthly journals/coastal journals, sales notes, questionnaires and in some cases sampling. There is a general use and agreement of the assumption **1 trip = 1 day at sea = 1 fishing day** when reporting effort for SSF for data calls.

WGCATCH mentions the difference in vessel effort (days at sea, vessel fishing days or hours) and gear effort (gear soaking time, net length etc.) in relation to passive gears, and that both can be valuable for different purposes.

Another issue is that much of the SSF is using passive gears (e.g. gillnets, pots, traps, longlines) and the relevant effort measures are often not reported/available, e.g. soaking time, total net length, number of traps, number of hooks.

Under the EU-MAP (2021/1167) a number of effort variables are requested, also for small-scale fisheries and passive gears, which is currently not widely reported from the control regulation. This results in a serious gap between effort variables requested under the EU-MAP and what is currently available for the SSF and passive gears.

The WKSSFGEO showed a potential for high-resolution geo-spatial data to help informing the effort variables, if appropriate analysis methods are developed.

Task 5: Collaboration with RCG MED&BS on métier codes

The work of the ISSG was presented at the RCG MED&BS 8th September 2021. The RCG had following recommendations:

RCG MED & BS 2021 Recommendation 2	Updating of the list of regional métiers and collaboration with ISSG on Métier issues.
Justification	Following LM 2020 recommendations, RCG Med&BS agreed to collaborate with ISSG on Métier Issues to update the métier list for Med&BS to be used in DG MARE and RCG Med&BS data calls, and to harmonize codes, which will allow to avoid overlapping and to apply similar methods and criteria on assigning métiers for fishing activities by MS. Furthermore, procedures for the identification of métiers at MS level should be explored with the aim of harmonizing the approach.
Follow-up actions needed	Analyse the results of RCG Med&BS 2021 data call to check if the regional métier list needs to be updated. MS to provide detailed data on the landing, effort and landing value for miscellaneous métiers, if needed. RCG chairs to organize initial meeting with ISSG on Métier Issues. MS should ensure participation of national experts in the meeting and collaborate with the ISSG on Métier Issues.
Responsible persons for follow-up actions	RCG Chairs, MS
Time frame (Deadline)	End of 2021 and 2022
Comments	

GREEK CASE STUDY

An approach for métier allocation in Greek waters, with a case study on longline fisheries and based on data from on on-board samples was presented. It is a method using cluster analysis to find out which métiers are meaningful using DCF observer data.

The case study focus on classifying the fisher behavior within the Greek longline fishery into meaningful métiers. The study is still ongoing and, to date, has identified the main métiers practiced using longlines in three subareas (northern, central, southern) of the Ionian Sea. The data used was gathered from the Greek Data Collection Framework program, during 2013-2020. A three-step procedure was followed in each subarea: the first step involved setting the trip ID, haul number and hook size as key trip variables for distinguishing the fishing operations; the second step created landing profiles and applied Principal Component Analysis to reduce the complexity of the dataset; and the third step implemented a hierarchical cluster analysis to identify potential métiers. In all three subareas, two major métiers were identified, and although in the north and central Ionian most of the species targeted were *Sparidae*, in the south Ionian *Merluccius merluccius* and *Galeus melastomus* accounted for the biggest part of the landings. Additionally, the catch composition, by-catches and discards showed differences between the métiers, and subareas, reflecting their distinct ecosystem characteristics. Overall, the outcomes suggest the need to analyze the impacts of gears/métiers at aggregation level 6 (hook size) at subregional/local scale, with the aim to shed further light on the fishing practices that may potentially affect the sustainability of the natural resources. The RCG métier subgroup will continue to collaborate with Greek colleges to progress this work.

Roadmap/follow-up

Suggestions for the next step in intersessional work (future tasks)

1. Continue following and evaluating the implementation of the métier codes and maintaining métier and reference lists and script.

2. Make métier descriptions from the 2022 RDBES data call (which is not a test data call for the CE and CL data).

3. Review the fecR package (calculating fishing effort) in relation to the RDBES data format. The package calculates fishing effort following the DG MARE Ad-Hoc Workshops on Transversal Variables in Zagreb (2015) and Nicosia (2016). This should include a review of scenarios discussed in the workshop report and also taking into account cases where no logbook data are available. It could be relevant to collaborate with ISSG SSF and RCG MED&BS on this. A questionnaire could be sent out to MS to evaluate if the fecR package is used for preparation of RDBES data.

4. Link with the alternative fleet segmentation suggested by RCG Econ to enhance the link between the two approaches, e.g. how the métiers could be used to construct better fleet segmentation. Analysis of the variation in métiers within the fleet segmentation.

5. Evaluate the use of cross-validation methods in MS to combine data coming from different declarative sources (sales notes, logbooks, coastal logbooks, geolocalization data etc.) with the goal to improve data, e.g. improving the value calculation and species composition taking sales notes into account or improve the spatial information (e.g. ICES rectangles) taking geolocalization data (e.g. VMS) into

account. The first step could be to collect information from all countries on data availability and methods.

SG Participants

Name	E-mail	MS
Maciej Adamowicz	madamowicz@mir.gdynia.pl	Poland
Bernardo Alcoforado	balcoforado@dgrm.mm.gov.pt	Portugal
Eneko Bachiller	ebachiller@azti.es	Spain
Sébastien Demanèche	sdemanec@ifremer.fr	France
Sofia Carlshamre	sofia.carlshamre@slu.se	Sweden
Suzana Faria Cano	sfcano@dgrm.mm.gov.pt	Portugal
Josefine Egekvist (Chair)	jsv@aqua.dtu.dk	Denmark
Ana Claudia Fernandes	acfernandes@ipma.pt	Portugal
Irina Jakovleva	Irina.jakovleva@zuv.lt	Lithuania
Maksims Kovsars	Maksims.Kovsars@bior.lv	Latvia
Karolina Molla Gazi	karolina.mollagazi@wur.nl	Netherlands
Claire Moore	claire.moore@marine.ie	Ireland
Estainis Mugerza	emugerza@azti.es	Spain
Henrik Kjems-Nielsen	henrikkn@ices.dk	Denmark
Katja Norén	katja.noren@slu.se	Sweden
Dimitris Politikos	dimpolit@hmcr.gr	Greece
Elo Rasmann	Elo.Rasmann@envir.ee	Estonia
Hans Hagen Stockhausen	hans.hagen.stockhausen@hi.no	Norway
Julia Wischnewski	julia.wischnewski@thuenen.de	Germany

Annex 1: Examples of Metier description reports
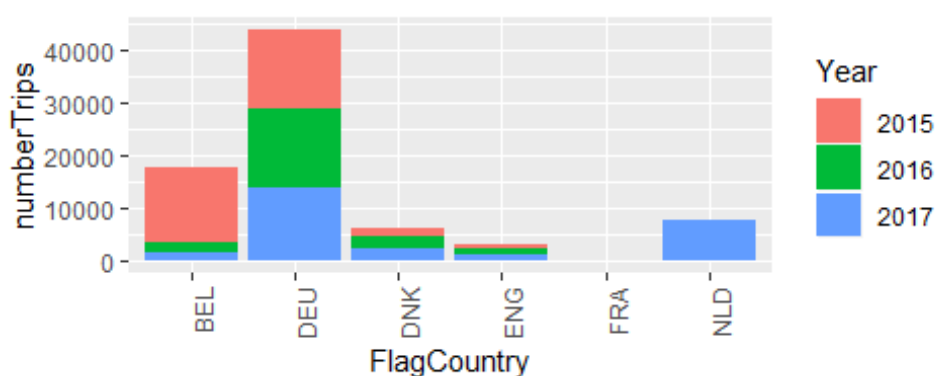
Métier description report
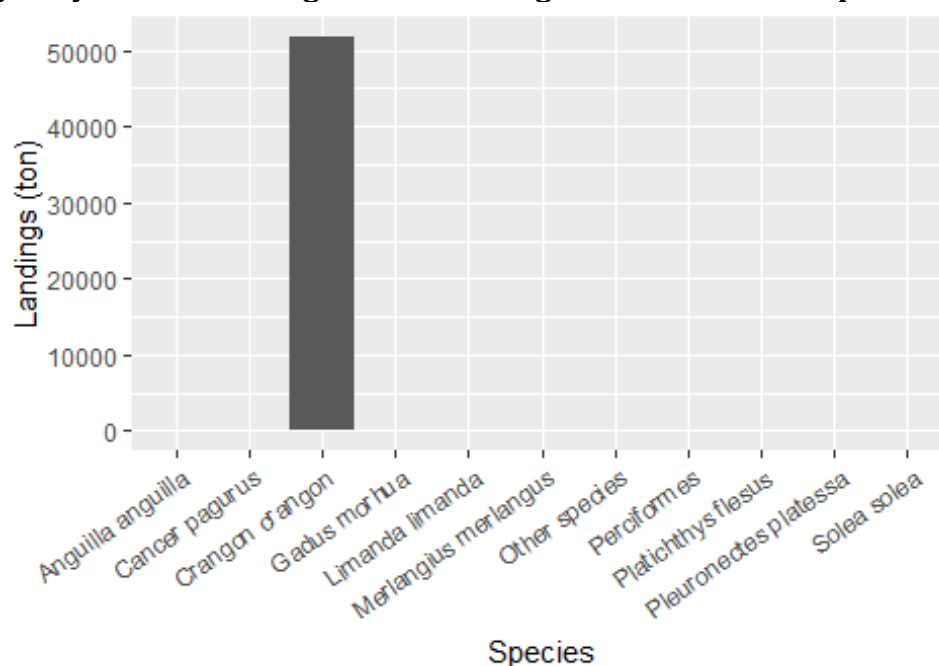
02 maj, 2019

Region: North Sea and Eastern Arctic

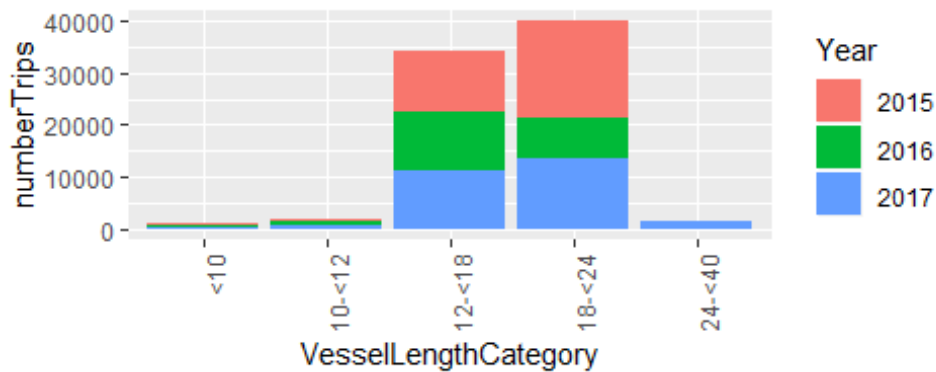### Métier: OTB_DEF_>=120_0_0 , years: 2015,2016,2017

Data source: RDB CE and CL data

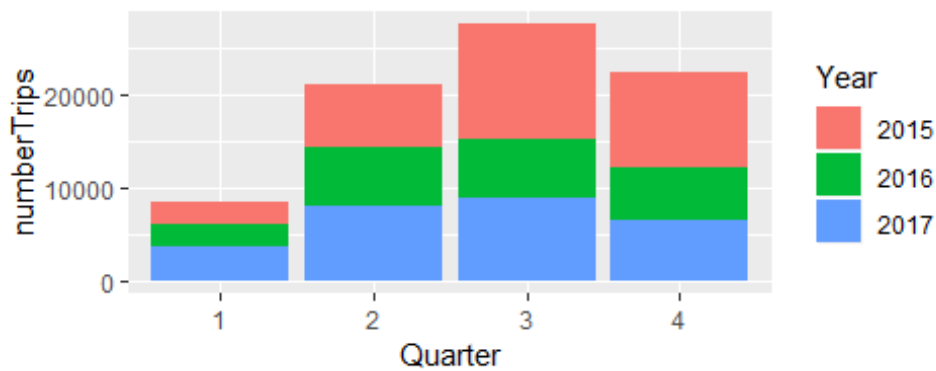**Number of trips by flag countries: BEL, NLD, DEU, ENG, POL, PRT, DNK, SCT, SWE, ESP, IRL, NIR, FRA, LVA, EST**
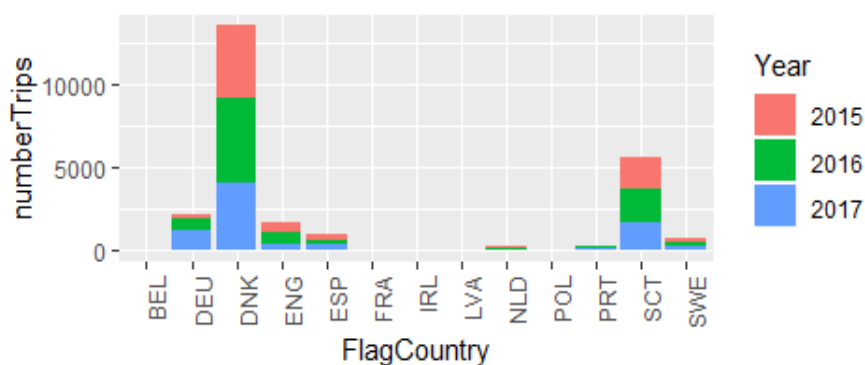
Top 10 species landed by métier. The rest are summarised in "Other species". Average yearly landings during the period 2015,2016,2017
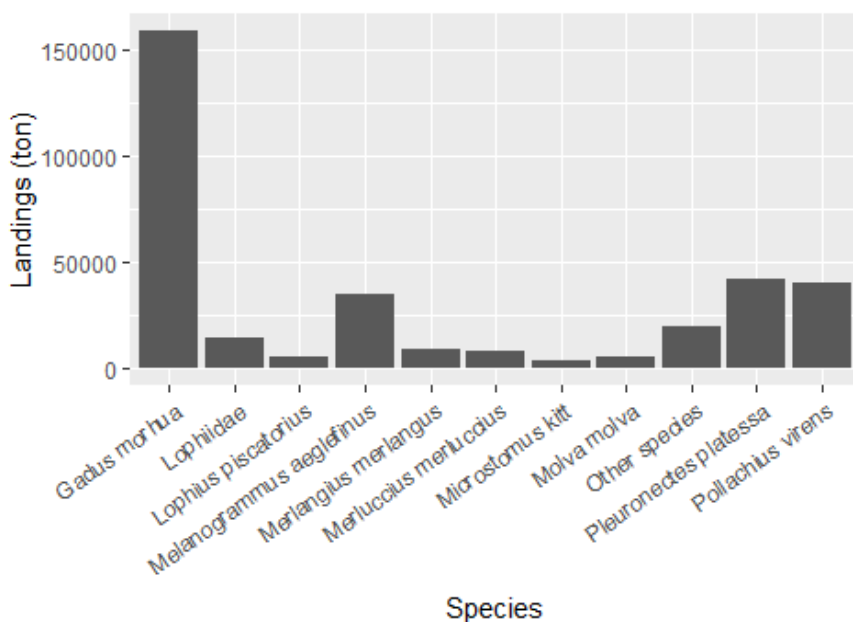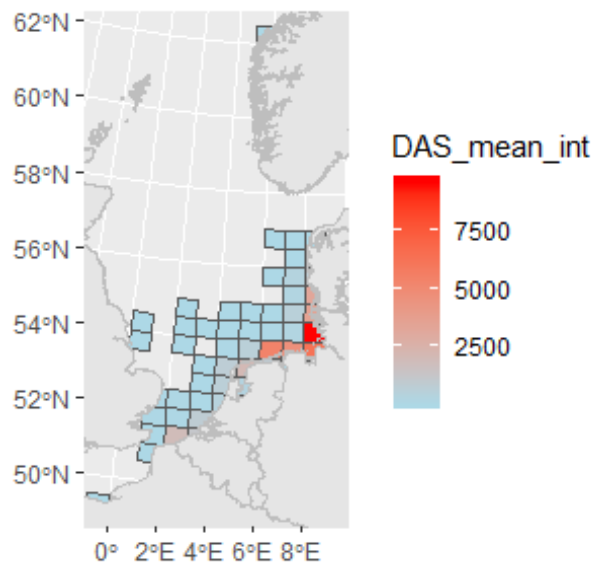
Number of trips by vessel length group:
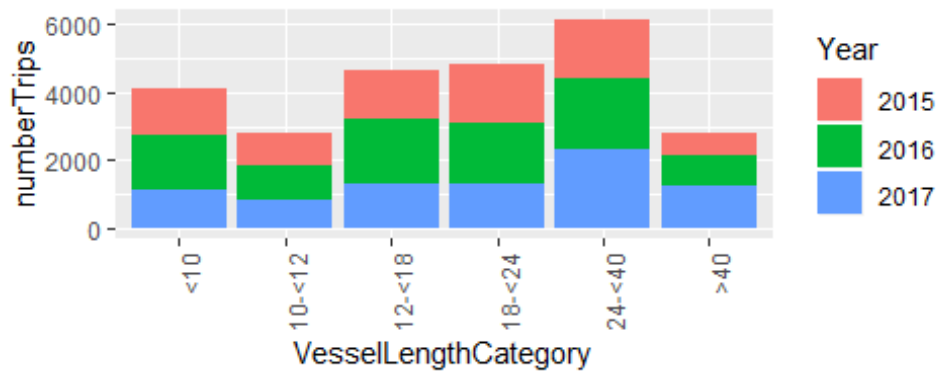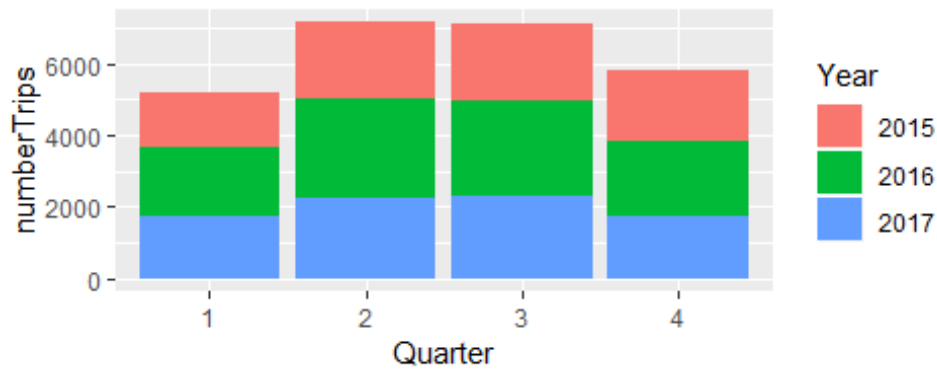
Seasonal pattern of fishing activity: number of trips by quarter

Days at Sea by ICES rectangle, yearly average 2015-2017
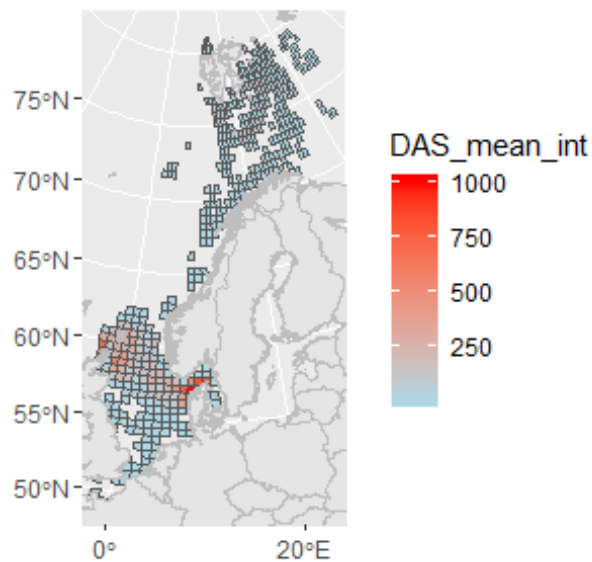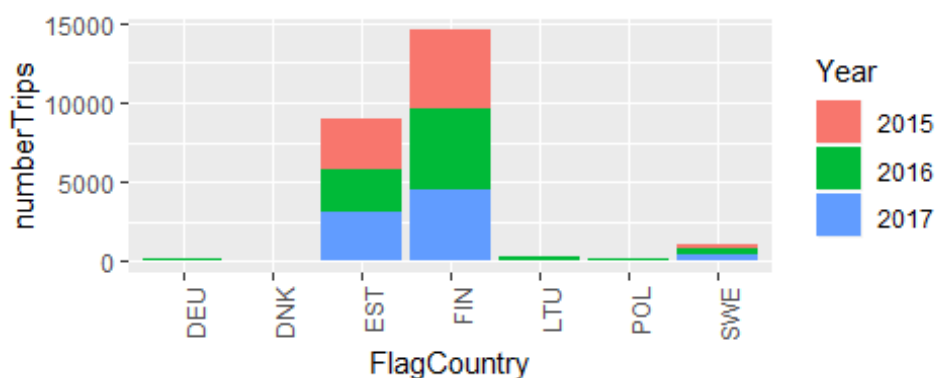

Comments:

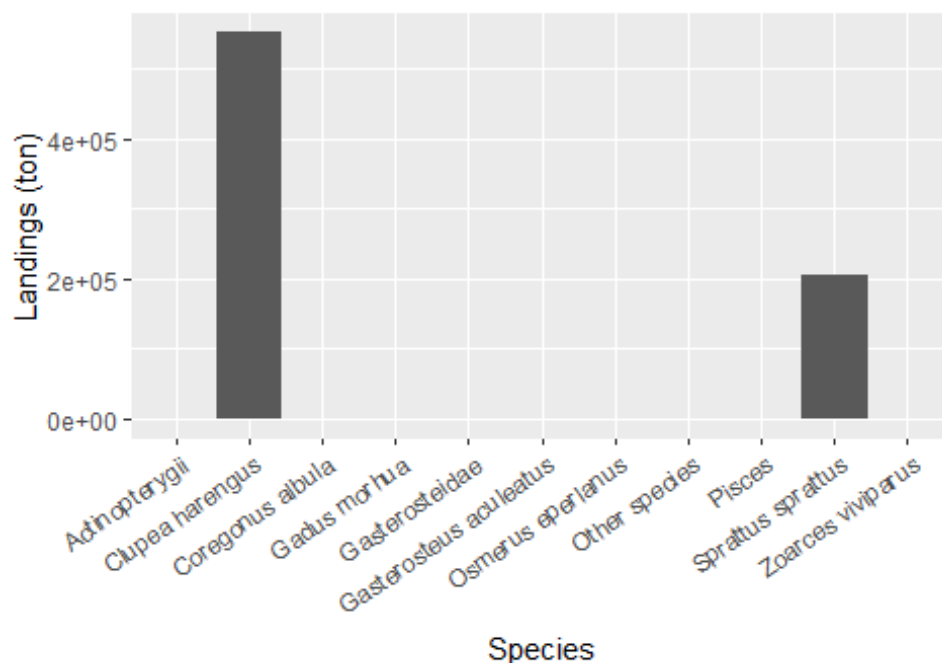# Metier description report

28 april, 2019

Region: North Sea and Eastern Arctic

Metier: TBB_CRU_16-31_0_0 , years: 2015,2016,2017

Data source: RDB CE and CL data

Number of trips by flag countries: BEL, DEU, DNK, ENG, FRA, NLD

Top 10 species landed by metier. The rest are summarised in "Other species". Average yearly landings during the period 2015,2016,2017

Number of vessels by vessel length group:

Seasonal pattern of fishing activity: Number of trips by quarter

Days at Sea by ICES rectangle, yearly average 2015-2017

Comments:

Metier description report

26 april, 2019

Region: Baltic Sea

Metier: OTM_SPF_16-104_0_0 , years: 2015,2016,2017
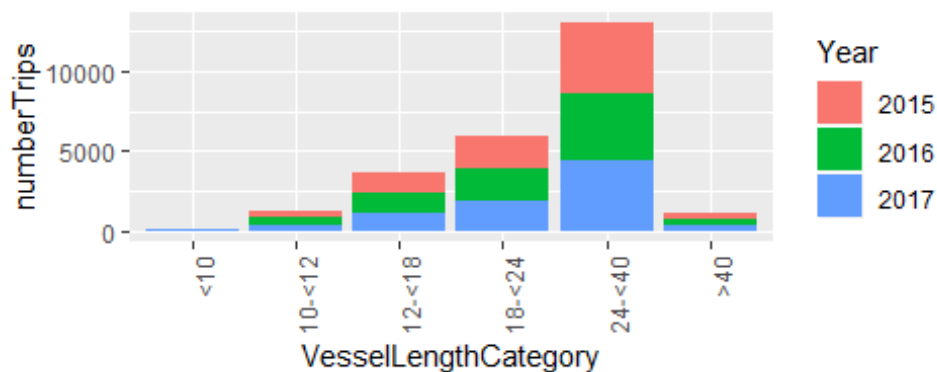
Data source: RDB CE and CL data

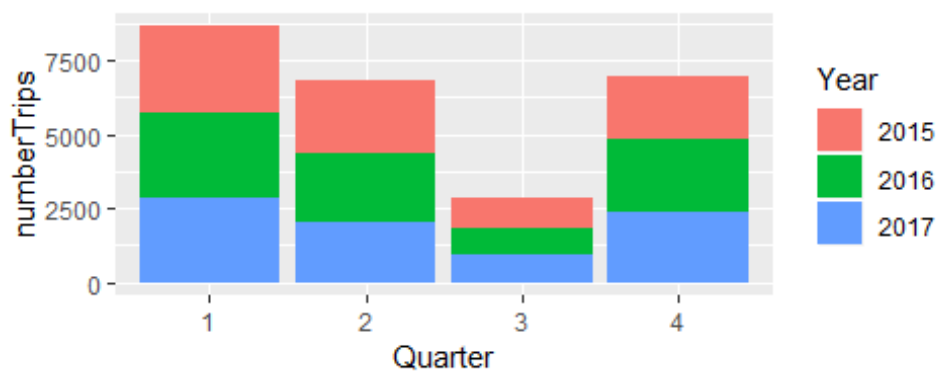**Number of trips by flag countries: DEU, DNK, EST, FIN, POL, SWE**

Top 10 species landed by metier. The rest are summarised in "Other species". Average yearly landings during the period 2015,2016,2017
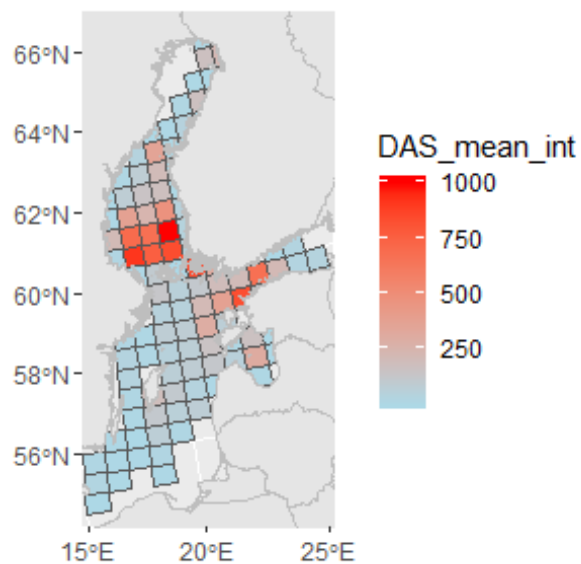
Number of vessels by vessel length group:

Seasonal pattern of fishing activity: Number of trips by quarter

Days at Sea by ICES rectangle, yearly average 2015-2017

Comments: