

DCF

Sampling plan description Demersal Fishery in the North Sea

(ver. 2.0; January 2020)

Region: **North Sea and Eastern Arctic**
Data source: **Commercial fishery targeting cod (*Gadus morhua*)**

Ireneusz Wójcik
Department of Logistics & Monitoring
National Marine Fisheries Research Institute
Gdynia, Poland

Contents

1. Introduction.....	3
2. Sampling plan description	3
2.1 Data sources, sampling intensity and coverage	3
2.2 Data collection on board the vessel	3
2.2.1 Specification of vessel and fishing trip	3
2.2.2 Sampling protocol.....	4
2.2.3 Incidental by-catch of protected species	5
2.3 Data format and reporting	5
3. Data archiving and quality checks	5

1. Introduction

The main reason for the collection of fisheries data, including biological variables of the exploited fish stocks is to supply the scientific working groups with the necessary data to assess the state of the fish stocks. Under the EU Data Collection Framework, based on the activity of the commercial fishing vessels, Poland has selected for sampling the long distance fishery targeting demersal species, i.e. Cod (*Gadus morhua*) in the region of North Atlantic and Eastern Arctic. Saithe (*Pollachius virens*) and Haddock (*Melanogrammus aeglefinus*) are also selected for sampling as. The Polish fishery in that area is targeting mainly cod, with Saithe and Haddock being usually the by-catch. This fishery is conducted usually by single Polish fishing vessel.

For the purpose of sampling of this segment under the UE Data Collection Framework (DCF), the following definitions are applied:

- Primary Sampling Unit - vessel/trip,
- Target population – one long distance fishing vessel targeting cod,
- Name of Sampling Scheme - At sea,
- Stratum – Freezer trawler targeting cod in NS&EA
- Sampling frame - one trawler targeting cod

2. Sampling plan description

2.1 Data sources, sampling intensity and coverage

As there is usually only one fishing vessel operating in this fishery, at-sea biological sampling is not randomized but based on the availability of space for observer on board the vessels. Over the period 2013-2018 on average five fishing trips (PSU) were recorded annually for that fishery. Sampling of one fishing trip per year is sufficient to obtain representative collection of biological variables.

2.2 Data collection on board the vessel

2.2.1 Specification of vessel and fishing trip

Basic element of the sampling protocol is recording of the vessel and fishing trip characteristics.

For each fishing trip the following data have to be collected and recorded:

- Name and registration number of the vessel
- Vessel flag
- Vessel power (in kW)
- Trip Number
- Harbour and date/time of departure
- Harbour and date/time of arrival
- Target species of the trip
- Fishing area (FAO Division)
- Type of gear
- Mesh size of the cod-end
- Observers name

A haul list must be prepared with following data recorded for each haul:

- Haul number
- Date
- Time of start and end of haul (UTC)
- Haul duration (minutes)
- Haul position (deg.min, sec in decimal format)
- Temperature at the surface and at the depth of trawling
- Depth (bottom, headline)
- Estimated catch by species, incidental bycatches

2.2.2 Sampling protocol

The purpose of the sampling programme is to collect the representative data for all catches during a trip. If possible, all hauls have to be sampled for length distribution of landings and discards for all species. In practice, the aim is to sample as many hauls as possible during given fishing trip in order to have an accurate picture of the species composition of the catch and the length distribution of the target species.

In general, one or more random samples from the mixed catch before it is being sorted shall be taken for each haul. As a rule, the sample should contain at least 200-250 fish of the target species. The total weight of the sample must be measured.

The sample shall be sorted by species, and the weight of each species in the sample must be measured. The length composition for each species and each category (landings, by-catch, discards) shall be recorded.

The proportion of discards also have to be estimated. The methodology applied for calculating the proportion of discards may vary depending on the actual condition on board, the fish conveyers or fishing deck or vessels' factory setup. For example, a random sample of the discarded fraction could be taken, and the raising factor for the sample can be calculated as the ratio between the estimated total weight of the discards and the weight of the sample. Discards composition in terms of species and length frequencies shall be determined. The methodology applied to estimate the discards shall be described in the observer's report.

Fish length measurement – the length of the fish is measured as total length, normally to the whole centimeter below.

Sampling for biological parameters - fish for biological sampling are preferably taken from the length sample (taking fish for biological analysis at random from the catch is also accepted but not preferred option). The minimum sampling level is to collect otoliths and detailed biological data from 5-10 fish per length class (recorded in the length sample) per fishing ground per trip.

Detailed biological data to be collected include:

- Length and weight of individual fish,
- age sampling (otoliths collection),
- gonad maturity stage (according to an eight-degree Maier's scale),
- degree of stomach fullness (a five-degree scale, from 0 - empty to 4 - completely full).

2.2.3 Incidental by-catch of protected species

Data on incidental catches of rare or protected fish species. The proportion of by-catch of rare or protected fish species in relation to the total catch shall be estimated.

Incidental by-catch of birds, mammals, reptiles and all protected fish must be recorded together with the haul information. Whenever possible, lengths and weights and photos should be taken and recorded.

Protected species are listed in Table 1D of the *Commission Delegated Decision (EU) 2019/910 of 13 March 2019*.

2.3 Data format and reporting

All vessel's, trip's, haul's and biological data collected shall be recorded in a format used for the national database held by NMFRI (*npzdr.pl*) and should be entered into the database within a reasonable time after the end of the trip on returning to the Institute.

The observer is required to write a trip report in accordance with the template used at the Institute.

3. Data archiving and quality checks

Data entered to the national database are verified in the two-stage validation process supported by a number of completeness, data type and range checks. Export procedures which prepare data sets for external databases (like RDB FishFrame or InterCatch) also perform basic checks. Additionally, a number of quality reports were developed to improve the completeness and reliability of the data.

References

Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC (OJ L 354, 28.12.2013, p. 22).

Regulation (EU) 2017/1004 of the European Parliament and of the Council of 17 May 2017 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008 (OJ L 157, 20.6.2017, p. 1)

Commission Implementing Decision (EU) 2016/1251 of 12 July 2016 adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019 (OJ L 207, 1.8.2016, p. 113)

Commission Delegated Decision (EU) 2019/910 of 13 March 2019 establishing the multiannual Union programme for the collection and management of biological, environmental, technical and socioeconomic data in the fisheries and aquaculture sectors (OJ L 145, 4.6.2019, p. 27.)

Commission Implementing Decision C(2019) 9492 of 19.12.2019 approving the work plan of Poland for data collection in the fisheries and aquaculture sector for the period 2020-2021

ICES. 2014. Report of the third Workshop on Practical Implementation of Statistical Sound Catch Sampling Programmes, 19-22 November 2013, ICES HQ, Copenhagen, Denmark. ICES CM2013/ACOM:54. 109 pp.