

Sampling protocols of trawlers targeting demersal species in GSA25

Version: 3 (10/2021)

Target population: all catches made by the Cyprus licensed vessels operating in GSA25 and targeting demersal species.

Stratum: Trawlers in GSA25 targeting demersal species

Sampling frame identifier: OTB_DEF_GSA25

Sampling frame description: List of licensed trawlers in GSA25 targeting demersal species (2 vessels)

Sampling scheme 1: Sampling at sea

PSU: vessel x trip

Planned number of sampled PSUs: 7

Method of PSU selection:

The target is to sample 7 trips, allocating 1 sampled trip to each month of fishing activity (closed period from 1 June – 7 November). Considering that there are only two licensed vessels involved in this fishery, systematic sampling will be followed for selecting the vessel. Within each month a week will be randomly chosen for selecting the first convenient (based on vessel availability) trip to be sampled.

Sampling aim:

- Concurrent length sampling of catches for selected stocks,
- Sampling of discards and unwanted catches, including vulnerable species
- Sampling of unsorted landings,
- Collection of samples for ageing, weight, sex and maturity for stocks selected.

Sampling procedure

During the sampled trip all hauls having an odd number (1,3,5...) will be sampled; this fixed selection has been decided for avoiding convenience decisions from observers. For each sampled haul, simple random sampling will be performed for the selection of i. Boxes to be sampled by species and by commercial category, in the case there are more than one box, ii. Individual fish to be length-sampled by box and iv. Individual fish to be collected for biological variables (age, weight, sex and maturity), through length-stratified sub-sampling (if allowed by the captain).

The list of species encountered during trawl sampling and for which length sampling is required, is provided below.

Table 1: List of species sampled during trawl sampling.

<i>Boops boops</i> *
<i>Diplodus annularis</i>
<i>Epinephelus</i> spp.
<i>Merluccius merluccius</i>
<i>Mullus barbatus</i> *

<i>Mullus surmuletus</i> *
<i>Octopus vulgaris</i>
<i>Pagellus acarne</i>
<i>Pagellus erythrinus</i> *
<i>Pagrus pagrus</i>
<i>Scomber colias</i>
<i>Serranus cabrilla</i>
<i>Spicara smaris</i> *
<i>Trachurus mediterraneus</i>
<i>Trachurus trachurus</i>
Elasmobranchs (any species)

*Asterisk indicates the species for which also biological sampling on age, maturity and sex is performed.

The coordinates of the sampling hauls are recorded, as well as the total number of hauls; this information is cross-checked with ERS data.

Check for rare specimens: Observers are requested to check for rare specimens in the catch at opening of the codend of all sampled hauls, and to indicate in the relevant sampling form whether the codend was checked or not. Furthermore, it is requested that the check for rare specimens is done to as many as possible non-sampled hauls, indicating which additional hauls have been checked for PETS.

During a sampling haul, both retained catch and discards of all species are recorded.

Retained catch: Retained catch may be sorted in boxes by species and commercial categories, or by mixed species and commercial categories. In the first case, the form used for recording retained catch is provided in **Annex 1**; in the second case, the form in **Annex 2** is used for analysing boxes with mixed species.

Discards: All species, including non-commercial, are recorded in numbers and weight; the form used for recording is included in **Annex 3**.

Length measurements: total length, size intervals of half centimetre (scm), measurement at the lowest scm. In case of PETS, required length measurements are included in the sampling form.

Species with length measurements: for each sampled haul, ~ 25 individuals are measured per species per commercial category, and also from discards. The weight of the sample size is always measured. Total weight of sampled species per commercial category is also recorded.

Species with no length measurements: For species not included in length sampling, a sub-sample of 50 individuals is weighted in addition to the total weight, for estimating the total number of individuals of the species in the retained catch / discards. The purpose is to be able to estimate proportions of discards also in terms of number.

For the five species for which biological samples are collected (bought) for the lab, the effort is to collect samples of around 10 individuals by commercial category from all available length classes; for species with no commercial categories (e.g. *Spicara smaris*), the aim is to collect around 40 individuals covering all length classes.

The sampling form used for OTB on-board sampling is available at the following link <http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/914BF6020815431FC22586C50031A851?OpenDocument>.

Sampling scheme 2: On-shore sampling

All trawlers are registered in Limassol Old Port (CYLOP), where retained catch is landed. In very few cases, retained catch may be landed at Latsi (CYLAT); relevant information on the landing port is provided by the captain in advance of the sampled trip. Sampling may be done at the port or at the market, in case all retained catch is initially gathered at one market.

PSU: vessel x trip

Method of PSU selection:

The target is to sample 7 trips, allocating 1 sampled trip to each month of fishing activity. The sampling allocation is defined as follows:

Considering that there are only two licensed vessels involved in this fishery and that systematic sampling will be applied for on-board sampling, vessels will be sampled on-shore systematically. The first vessel to be sampled on-shore will be the vessel that has not been selected first for onboard sampling. Within each month a week will be randomly chosen for selecting the first convenient (based on vessel availability) trip to be sampled.

Sampling aim:

- Concurrent length sampling of catches for selected stocks,
- Collection of samples for ageing, weight, sex and maturity for stocks selected.

Sampling procedure

During the sampled trip, simple random sampling will be performed for the selection of i. Boxes to be sampled (by species by commercial category), ii. Individual fish to be length-sampled by box and iv. Individual fish to be collected for biological variables (age, weight, sex and maturity), through length-stratified sub-sampling (if allowed by the owner).

Landings may be sorted in boxes by species and commercial categories, or by mixed species and commercial categories. In the first case, the form used for recording retained catch is provided in Annex 1; in the second case, the form in Annex 2 is used for analysing boxes with mixed species.

Length measurements: total length, size intervals of half centimetre (scm), measurement at the lowest scm.

Sample size for length measurements: ~ 25 individuals are measured per species, and per commercial category. The weight of the sample size is always measured. Total weight of sampled species per commercial category is also recorded.

Sample size for biological sampling: For each of the five species for which biological samples are collected (bought) for the lab, the effort is to collect samples of around 10 individuals by commercial category from all available length classes; for species with no commercial categories (e.g. *Spicara smaris*), the aim is to collect around 40 individuals.

The sampling form used for OTB port sampling is available at the following link <http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/914BF6020815431FC22586C50031A851?OpenDocument>.

Following on-board and port sampling, records are electronically saved, with each trip receiving a unique id and each length and lab sample receiving a code connecting them with the relevant trip.

ANNEX 2

Αναλυτική Παραγωγή Καλάδας (για μεικτές εμπορικές κατηγορίες)

Εμπορική Κατηγορία				Αριθ. Κασών:	
Ανάλυση παραγωγής ανά κάσα				Συνολικό Βάρος x Αριθ. Κασών	Συνολικός Αριθ. Ατόμων x Αριθ. Κασών
Είδος	Βάρος 50 ατόμων (kg)	Συνολικό Βάρος (kg)	Συνολικός Αριθ. Ατόμων		
Σύνολο					

Εμπορική Κατηγορία				Αριθ. Κασών:	
Ανάλυση παραγωγής ανά κάσα				Συνολικό Βάρος x Αριθ. Κασών	Συνολικός Αριθ. Ατόμων x Αριθ. Κασών
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Σύνολο					

Εμπορική Κατηγορία				Αριθ. Κασών:	
Ανάλυση παραγωγής ανά κάσα				Συνολικό Βάρος x Αριθ. Κασών	Συνολικός Αριθ. Ατόμων x Αριθ. Κασών
Είδος	Βάρος 50 ατόμων (kg)	Συνολικό Βάρος (kg)	Συνολικός Αριθ. Ατόμων		
Σύνολο					

