منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Organización de las Naciones Unidas para la Agricultura y la Alimentación

COORDINATING WORKING PARTY ON FISHERY STATISTICS

Intersessional Aquaculture and Fishery Subject Groups Meetings

Copenhagen, Denmark 19-22 June 2017

The standard aquaculture questionnaires – discussion paper

Author: Eurostat

Background

In 2013 a Task Force for elaborating a Zero Standard Aquaculture Questionnaire was established under the CWP Aquaculture Subject Group. The primary objective of this questionnaire was the harmonized collection of aquaculture production data among different regions and organisations

- to enable global comparability of aquaculture statistics,
- to collect meaningful data without duplication and unnecessary burden,
- to support new aquaculture data collections in their endeavour to produce useful, high quality statistics.

During the following three years, the Task Force compared aquaculture questionnaires from FAO, GFCM and Eurostat and developed a zero draft standard aquaculture questionnaire with minimum data reporting requirements based on current practices and experience of the participating institutions. The Zero Standard Aquaculture Questionnaire was then presented to the CWP at the CWP-25 in February 2016 in Rome. However, some concepts and definitions need further discussion and refinement. These are suggested to be incorporated into the revised CWP Handbook on Aquaculture Statistics.

Guidelines to the Zero Standard Aquaculture Questionnaire

(1) The Zero Standard Aquaculture Questionnaire provides for the collection of four core data sets:

- **A1 – Aquaculture off-farm production** (quantity and unit price)
- **A2 – Input of seeds** (quantity and unit price)
- **A3 – Artificial seed production** (quantity and unit price)
- **A4 - Size of aquaculture facilities** (surface area and optionally water volume)

An additional data set is deemed useful:

- **A5 – Employment** (number)

(2) Definitions/ classification

(a) The questionnaires refer to the production of **all aquatic organisms** farmed and harvested, including fin fish, crustaceans, molluscs, amphibians, aquatic reptiles, other aquatic vertebrates and invertebrates, macroalgae (seaweeds), microalgae and cyanobacteria, aquatic macrophytes and aquatic ferns for ornamental use, and seagrasses.

(b) **Non-food uses**: (*Needs further reviewing)*
- as live ornamental aquatic animals and aquatic plants;
- as live species of functional uses within aquaculture for parasite control and control of overpopulation of self-reproduction of cultured species, etc.;
- as bait, live or dead, for fishing;
- as medical uses (such as leech)
- as raw materials for industrial uses, animal feed, and others.

[Note: Definitions need to align with that of the *CWP Handbook on Aquaculture Statistics* to be developed]

(c) **Commodities or products** (harvested directly from aquaculture other than from processing):
- for food (fish roes/ caviar)
- pearls and shells
- other products (such as sheded toad skins for traditional medical use).

(d) **Life stages:**
- Hatchery and nursery production (fertilised eggs, hatchlings or larvae, juvenile ready for stocking, yearling;
- brooders / spawners for natural or artificial propagation for hatchery operation;
- seedlings (for aquatic plant)

(e) **Source of seeds:**
Artificially produced seeds
- Complete domestic source (hatchery and nursery located within the country)
- Partial domestic source (using fertilized eggs, hatchlings or juveniles imported from foreign hatchery/nursery for larval rearing or for nursing within the country for use as seeds for aquaculture

Wild seeds
- wild seeds through capture fishery with the country's waters;
- wild seeds imported from foreign countries of capture fishery origin.

(f) **Farming systems/ culture methods**:
As defined in the CWP Handbook on Aquaculture Statistics.

(g) **Employment**: (further reviewing needed to check if relevant to aquaculture statistics)
full-time; part-time; occassional; subsistence (*However, production for own consumption is not collected in A1…)* or FTE *See revised socio-economic chapter of the CWP Handbook on Aquaculture Statistics*.

(3) A1 & A3: Statistics on aquaculture production, whether on the final output of the cultivation system or on production from hatcheries and nurseries, are measured as **first sale at farm-gate**. This means that unsold production, e.g. escapes or production for own consumption (subsistence farming) but also production of artificial seed for further on-growing by the same facility, is not accounted for. Adult fish being traded between several on-growing companies is only counted when it is first sold for its final use.

(4) A1: The **final use** of the production should refer to either human food consumption or non-food use. Further breakdown of non-food uses, such as live ornamental, functional (e.g. clearners, police fish, leech), industrial, feed, and others is optional supplementary data. When one species has multiple final use, the quantity for human food consumption and the quantity for non-food use should be recorded separately. When the production

includes **commodities** with relatively minor live-weight equivalent but high commercial value, e.g. fish roes or caviar and pearls, it is recommended to record the production of such commodities separately.

(5) A4 collects the size of **active aquaculture facilities** during a reference period. A production unit is considered "active" if stocked with a target species anytime during the reference year.

(6) **Reference period**: All measures should be referred to events occurred during a certain calendar year.

(7) **Measurement unit**: The aquaculture production volume is expressed in tonnes live weight [TLW]. This weight includes all shells and bones. When utilizing number of individuals as original unit of measurement, the average weight shall be estimated. It is imperative to indicate the unit of measurement. Data for the economic value of the production are reported as unit price in national currency per tonne [NAC_T]. The production of artificial seed is reported in numbers as is the input of seeds. The size of facilities refers to a surface area covered by aquaculture production units and is measured in hectares. In addition, the water volume in cubic metres may be indicated. Employment data are to be given in numbers.

Issues for discussion

The concepts/ issues marked in yellow are lacking definitions or the definitions given in the *CWP Handbook on Aquaculture Statistics* ought to be revised. The CWP Aquaculture Group is invited to agree on a clear terminology and definitions.

ANNEX

A1 Aquaculture production

Year	Country	FAO Major Area	SPECIES			PRODUCTION					
			3-alpha code	Local name	Scientific name	Quantity	Unit of quantity	Price per unit	Currency	Final use	Comment
							TLW (tonnes live weight)				

Instructions:

- This questionnaire collects the **quantity and value of aquaculture production at first sale**.
- The reference period is defined as a period between 1st January and 31st December of the **reference year**.
- This questionnaire includes the **production of all aquatic organisms farmed and harvested**, including fish, crustaceans, molluscs, other aquatic vetebrates and invertebrates, aquatic plants and seaweeds.
- This questionnaire includes only the quantities of products destined for **final utilization**, and does not include any products that will continue to be subject to aquaculture practices.
- **Quantity** of production should refer to tonnes of live-weight equivalent [TLW]. The TLW includes shells and bones. When utilizing number of individuals as original unit of measurement, the average weight shall be estimated. It is imperative to indicate the **unit of measurement**.
- The **price per unit** should refer to the value of products at first-sale. If no commercial value is applicable, the value of equivalent products should be used.
- The **final use** should refer to either human food consumption or non-food use. Further breakdown of non-food uses, such as live ornamental, functional (e.g. clearners, police fish, leech), industrial, feed, and others (see codes), is optional supplementary data. When one species has multiple final use, the quantity for human food consumption and the quantity for non-food use should be recorded separately.
- When the production includes **commodities with relatively minor live-weight equivalent but high commercial value**, e.g. fish roes or caviar and pearls, it is recommended to record the production of such commodities separately.

A2 Input of seeds

Year	Country	FAO Major Area	SPECIES			INPUT					
			3-alpha code	Local name	Scientific name	Quantity	Unit of quantity	Unit price	Currency	Source	Comment
							numbers			Wild	
										Domestic hatchery	
										Foreign hatchery	

Instructions:

- This questionnaire collects the quantity and value of aquaculture seed introduced from either domestic hatchery, foreign hatchery or wild during a reference period.
- The reference period is defined as a period between 1st January and 31st December of the **reference year**.
- The **source** should be defined either from hatcheries within the country, hatcheries located in foreign countries, or from wild through capture fishery. Sources other than those three and countries of origin for imported seeds can be further elaborated in comment.

A3 Artificial seed production for culture-base fisheries

Year	Country	FAO Major Area	SPECIES			PRODUCTION					
			3-alpha code	Local name	Scientific name	Stage	Quantity	Unit of quantity	Unit price	Currency	Comment
						Fertilized eggs/hatchlings		numbers			
						Juveniles (ready for stocking)		numbers			

Instructions:

- This questionnaire collects the quantity and value of aquaculture seed production at first sale destined to utilisation on another farm.
- The reference period is defined as a period between 1st January and 31st December of the **reference year**.
- This questionnaire includes the production of all aquatic organisms farmed and harvested, including fish, crustaceans, molluscs, other aquatic vetebrates and invertebrates, aquatic plants and seaweeds.
- Different **life stages** may be distinguished for the input of seeds. No decision on which life stages to use was made (for example, 0+, 1+, 2+, etc. or simply fertilised eggs and juveniles?). The stage separation needs to be applicable to aquatic plant.

A4 Size of active aquaculture facilities

Year	Country	FAO Major Area	AQUACULTURE FACILITIES					MAIN SPECIES CULTURED (optional)			SECONDARY SPECIES (optional)			
			Type of production unit	Surface Area		Volume (optional)		3-alpha code	Local name	Scientific name	3-alpha code	Local name	Scientific name	Comment
			Ponds		ha									
			Tanks and raceways		ha									
			Recirculation systems		ha		m^3							
			Cages		ha		m^3							
			Enclosures & pens		ha									
			Lake, Coastal lagoons, Reservoir, Dam, Ba		ha									
			Rice-fish paddies		ha									
			On-bottom		ha									
			Off-bottom		ha									
			Others		ha									

Instructions:

- This questionnaire collects the size of active aquaculture facilities during a reference period. In other words, the questionnaire refers to all facilities where target species are kept at any time within a reference period.
- The reference period is defined as a period between 1st January and 31st December of the **reference year**.
- The **size of facilities** refers to a surface area and maybe water volume covered by aquaculture production units.
- This questionnare covers aquaculture facilities, regardelss of the type of ownership (private or public), type of registration and nature of the facility, e.g. grown-out, nursery, or hatchery facilities.
- Total volume of water that aquaculture facilities can hold is an optional measure to report.
- Main target species cultured are optional. If one entity is producing different species groups, respondents should either report the size of the production units by target species or provide combined figures for the size of production units.

A5 Employment -- Supplementary

Year	Country	FAO Major Area	Full time			Part time			Occassional			Subsistent		
			Male	Female	Unknown	Male	Female	Unknown	Male	Female	Unknown	Male	Female	Unknown

Instructions:

- This questionnaire collects number of people engaged in aquaculture. Here, 'aquaculture' is considered as economic activity defined in the ISIC ver. 4, code 032.
- The refernce period is defined as a period betw een 1st January and 31st December of reference year.