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COORDINATING WORKING PARTY ON FISHERY STATISTICS

Twenty-sixth Session

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Proposed additions and amendments to the CWP Handbook Section on socio-economic data

Author: Secretariat

Document Summary

This document contains the proposed addition to the CWP Handbook of a socio-economic section and include core and additional socio-economic variables which address the needs for types of data and definitions at national and regional levels.

The CWP Handbook (http://www.fao.org/cwp-on-fishery-statistics/handbook/en/) is a web-based publication which includes an introduction, general concepts, capture fisheries statistics, aquaculture statistics and socio-economic data. Tools and resources and a search facility are also included.

Former titles revised in this proposal are indicated here in blue with the proposed new titles in yellow.

The first proposed change is that the section of the handbook be renamed "Socio-Economic Dimension" from the current title "Socio-economic data". It is proposed that the material covered in this document be titled 'Socio-economic data' under the general heading of 'Socio-Economic Dimension. Currently, the Handbook contains an item titled 'Fishers' and this section is proposed to be moved under 'Capture fisheries statistics' while a sibling 'Fish Farmers' is proposed to be created under 'Aquaculture statistics' for tailored description of these concepts in each relevant sub-sector. 'Employment' is also a core variable for aquaculture and fisheries, respectively and revised definitions are included under each section. The section detailed below, with the proposed title of 'Socio-economic data' has been heavily revised and should be considered an entirely new proposed addition along with the core and additional variable section. In the current version of this section 'Food balance sheets on apparent consumption' and 'Fishery commodities classification' do not contain any proposed changes and they will remain as published in the current version of the Handbook and so they are not included here.

Editorial notes to guide readers are provided in blue in square brackets [example]. Edits are indicated in green.

- GFCM provided edits in track changes that were included.
- SEAFO indicated no comments
- ICES indicated no comments

Revision History

Version	Description	Author	Date:
1.0	Original	CWP Secretariat	2013/02/07
2.0	Recompile section 4.4 and 5 of CWP HB and add notes on revision needs	CWP Secretariat	2017/02/14
2.1	Revision of sections 5.2.1 and 5.2.2 with inputs from Eurostat	CWP Secretariat	2017/04/29
2.2	Add Section 5.1 and 5.3	CWP Secretariat	2017/05/05
3.0	Commented document to be discussed at the CWP Intersessional Meeting (2017) with inputs from OECD, JRC and GFCM	CWP Secretariat	2017/06/15
4.0	According to the agreements from the intersession meeting and discussions.	CWP Secretariat	2018/07/01
5.0	According to comments provided after intersessional meeting	CWP Secretariat	2019/02/26
5.1	Revision with inputs from GFCM	CWP Secretariat	2019/05/02
6.0	Final version for CWP	CWP Secretariat	2019/05/08

SOCIO-ECONOMIC DATA

[Editorial notes: The narrative and contents were improved in this section with clarifications made following comments from JRC; Roger Martini; Cristina Ribeiro. The classifications were moved into lower sections to improve readability]

The Code of Conduct for Responsible Fisheries (FAO, 1995) stresses that "in order to ensure the sustainable management of fisheries and to enable social and economic objectives to be achieved, sufficient knowledge of social, economic and institutional factors should be developed through data gathering, analysis and research" (FAO, 1995, p. 12).

In general fisheries administrators have given greater attention to the collection of production data and biological information, while the acquisition of socio-economic data has not yet received the same level of effort. Nevertheless, socio-economic information is of critical importance in fisheries management and for policy definitions.

1.1 Relevance of Socio-economic Statistics

Fish and other aquatic organisms are mainly produced for human use and consumption through economically focused capture fisheries and aquaculture activities and thus one important mechanism to monitor the two sectors is through assessment of their economic performance. In addition to the cost and revenue variables for socio-economic statistics the number of people engaged in the sectors and their earnings are crucial information. Such information is required to enable management discussions that include the economic contributions to society from fisheries and aquaculture as well as reflect the motivation for people to act in the sector.

The economic units of the socio-economic statistics are typically represented by fishing and aquaculture enterprises. The collection of socio-economic statistics should be harmonized with the collection of fisheries and aquaculture production data; however, this is often a challenging requirement to meet as the collection of the data fall under different surveys and units of observation.

Socio-economic statistics refer to fishing enterprises or fishing vessels and when vessels are used as the unit of observation, they are most often grouped into fleet segments. The fleet segments allow for the division of the entire population into homogeneous, mutually exclusive, groups of vessel types/sizes/geographic locations[1]. Aquaculture segments are often defined by species/farming technique[2]. Depending on the policy goal, whether an overall sectorial performance assessment, or a more detailed analysis, based on fleet or aquaculture segments,

[1] The concept of Fleet Segment (Fleet segment: group of vessels with the same length class (LOA, length overall) and predominant fishing gear during the year) was introduced by the EU Fisheries Data Collection Framework in the 2008 EU Regulation and since then has been adopted for other Data Collection Programs, such as the GFCM ~~DCFR~~ DCRF.

[2] https://datacollection.jrc.ec.europa.eu/c/document_library/get_file?uuid=a9a69267-d036-45ad-90b5-f2d0dcd4e80d&groupId=10213#page=60

the socio-economic statistics should be linked to the catch (including effort) and respectively aquaculture production statistics in order to allow for more coherent policy recommendations. Frequently the link between the two datasets represents difficulties due to the different populations (in fisheries: enterprises vs vessels, and in aquaculture, company vs production facilities), used for the collection of these data. For example, capture production statistics are usually collected by flag state and not segmented by fleet classes or fishing gears. Aquaculture production statistics are mostly collected from the production facilities, not enterprises, and defined as "farm-gate" production.

This chapter of the handbook is meant to identify a minimum set of core variables for which data collection can be implemented at regional and/or country level. Several socio-economic data collection programs are in place amongst the CWP agencies and these are identified in the annex. These data collection programmes differ in coverage and detail depending on the objectives of the data collection. In order to set a global standard, the focus has been placed on the most universally available variables.

At the moment only the primary sectors of aquaculture and fishing are included here, but it is anticipated that the processing sector will also be included. The fish processing sector follow the ISCO08 definition 7511 BUTCHERS, FISHMONGERS AND RELATED FOOD PREPARERS which describes more generally the occupation of food preparers and refers to both fish and meat processing plus the definition of 8160-Fish processing machine operator can be used to define processing activities.

Fish processing refers to the processes associated with fish and fish products between the time fish are harvested, and the time the final product is delivered to the customer. Fish processing includes operations handled on board and/or on land to convert raw fish in a form which as acceptable for the consumer and that has a longer shelf life, e.g. preserving the harvested fish with ice; preparing fresh fish by removing heads, fins, scales, bones and entrails; salting, drying, smoking seafood; shucking and packing fresh shellfish; canning seafood; producing fish paste products (surimi), boiled fish products, fermented products, fish meal and fish oils; processing marine fats and oils; and freezing seafood.

The first economic variables required to conduct a socio-economic assessment are “Revenue”, “Costs” and “Employment”. However, the revenue and cost variables are composed of elements that can be complex to collect and are not universally available. At the moment, “Production value” is available for aquaculture while data on the “Production value” from capture fisheries is not consistently collected nor consistently available. To reflect the current limitations in data availability both core and additional variables are presented.

1.2 Core Socio-Economic variables (minimum global data requirements)

[Editorial notes: Edits and additions were made in this section following the comments from Anna Carlson; Roger Martini; JRC; Fabiana Cerasa. The definition section for employment was streamlined to only include concepts relevant to the socio-econ analysis, removing the time use components related only to the data collected under the FAO FM questionnaire. The suggested indicators were removed to reduce confusion and allow for a focus on the core and additional variables at this stage.]

Under each of the respective sections for fisheries and aquaculture, a set of core variable items are proposed. These variables are proposed as they represent the minimum data to be collected to provide a basic assessment of the economic performance of the sector.

1.2.1 Fisheries

The core variables identified here for fisheries are restricted to only two items as they are the most widely available.

The fisheries core variables to be collected are:

i. Gross value of landings and
ii. Employment

i. Gross value of landings

The gross value of the landings is normally collected together with landing statistics (e.g. from fish auctions or from sales slips). In order to establish the link to the catch statistics (see section Catch and Landings) these data should preferably be broken down by the same variables as the catch data (species, area, year, fleet segment, etc.) and use the ex-vessel value per unit (price) for the first sale.

Note that it is recommended that the basic economic variables be recorded in national currencies. In the case that reporting is made in USD (or another non-national currency) the exchange rate, source and date should be included in the metadata to ensure consistency. The suggested exchange rate source is FAO with more details here: Currencies and Funds.

ii. Employment [This is the fishing-relevant version of the former section titled 'Fishers']

Employment in fisheries should be collected in sex-disaggregated form. A further note should be made that the term "fisher" [Ref future revised 'Fishers' webpage] should not only include those operating from fishing vessels but also those fishers operating land-based fishing gears and/or from shore foot-fishing without the use of auxiliary boats. Where possible, a breakdown by the type of activity by classification should be included with the employment data.

The number of fishers that are reported by the national statistics should follow the same flag principle that is followed when recording the catch and landing statistics. In other words, the statistics should reflect the number of fishers that are engaged in producing the landings recorded in accordance with the guidelines on the nationality of landings given in the CWP Handbook. Therefore, fishers of a coastal state working on foreign vessels landing in this coastal state's ports should be excluded from the data. The data should show, preferably separately, the national fishers working on foreign vessels chartered to national companies.

Classification of occupations - To define employment for fishers, the ISCO classification[3] can be used and it is included in Annex 1.

Time-use definition – can be made either by full-time equivalent (FTE), the total number of people or following the FAO FM questionnaire standard. For some purposes, the conversion of the employment data as FTE may be useful. Some experience exists in the collation of FTE data in Europe[4]. However, in many situations it is the actual number of people engaged that is relevant and fisheries are subject to strong seasonal variation in employment based on the characteristics of the fisheries.

Full-time equivalent (FTE): (EU)
FTE national should be calculated using a reference level defined according to the features of the fishery sector, often 2 000 hours annually:
If the annual working hours per crew member exceed the reference level, the FTE equals 1 per crew member.

- if annual working hours > national reference level FTE national = 1
- if annual working hours < national reference level FTE national = $\frac{annual\ working\ hours}{national\ reference\ level}$

1.2.2 Aquaculture

The core variables identified here for aquaculture are restricted to only two items as they are the most widely available.

The aquaculture core variables to be collected are:

i. Gross value of production and
ii. Employment

i. Gross value of production
The gross value of the production is normally collected together with production quantity statistics and the value is optimally collected at the farm-gate level, that is, the value per unit (price) of the product at first sale, excluding any separately billed transport or delivery charge[5]. It includes the sale on the market of production supplied to third parties, plus all duties and taxes invoiced. In order to establish the link to the production quantity these data should preferably be broken down by the same variables as the production data (segment, species, area, year, etc.).

[3] https://www.ilo.org/public/english/bureau/stat/isco/docs/publication08.pdf
[4] Sabatella, E. 2016. Methodologies for the socio-economic data described in EU MAP. Ad hoc contract Commitment No. SI2 725 694. Ref. Ares (2016)2440332 - 26/05/2016). Available online: https://datacollection.jrc.ec.europa.eu/documents/10213/994708/Methodologies+for+socio+economic+data+described+in+EU+MAP.docx

[5] https://www.imf.org/external/np/sta/tegppi/index.htm. ILO, IMF, OECD, Eurostat, UNECE, World Bank, 2004, Producer Price Index Manual: Theory and Practice, International Monetary Fund, Washington DC.

Note that it is recommended that the basic economic variables be recorded in national currencies. In the case that reporting is made in USD (or another non-national currency) the exchange rate, source and date should be included in the metadata to ensure consistency. The suggested exchange rate source is FAO with more details here: Currencies and Funds.

ii. **Employment**: [This is the aquaculture-relevant version of the former section titled 'Fishers'] Employment in aquaculture should be collected in sex-disaggregated form. Where possible, a breakdown by the type of activity by classification should be included with the employment data which should include all people [Ref future 'Fish Farmer' webpage] working on fish farms, hatcheries, and employed in shell fish culture operations.

Classification of occupations - To define employment for aquaculture farmers, the ISCO classification[6] can be used and it is included in Annex 5.1.

Time-use definition – can be made either by full-time equivalent (FTE) or following the FAO FM questionnaire standard. For some purposes, the conversion of the employment data as FTE may be useful. Some experience exists in the collation of FTE data in Europe[7]. However, in many situations it is the actual number of people engaged that is relevant and aquaculture can be subject to strong seasonal variation in employment based on the characteristics of the aquaculture sector.

Full-time equivalent (FTE): (EU)
FTE national should be calculated using a reference level defined according to the features of the aquaculture sector, often 2 000 hours annually:
If the annual working hours per Fish Farmer exceed the reference level, the FTE equals 1 per Fish Farmer.

- if annual working hours > national reference level FTE national = 1
- if annual working hours < national reference level FTE national = $\frac{annual\ working\ hours}{national\ reference\ level}$

1.3 Additional Variables

Besides the core variables described for both fisheries and aquaculture a full socio-economic assessment would require further variables to be collected on the revenue, costs, investments and demographics related to the activities.

1.3.1 Fisheries

[6] http://www.ilo.org/public/english/bureau/stat/isco/isco88/major.htm
[7] Sabatella, E. 2016. Methodologies for the socio-economic data described in EU MAP. Ad hoc contract Commitment No. SI2 725 694. Ref. Ares (2016)2440332 - 26/05/2016). Available online: https://datacollection.jrc.ec.europa.eu/documents/10213/994708/Methodologies+for+socio+economic+data+described+in+EU+MAP.docx

The additional variables allow for the calculation of 1. Total revenue and 2. Total costs for the fishing operations. This allows derivation of the economic profitability of the fishing sector which is judged from information on the net revenue (net revenue= total revenue – total costs) of the sector. The fleet characteristics can be summarized by the calculation of 3. Capital value and, lastly, the salary of the fishers engaged in fishing provides a tangible measure of the contribution to livelihoods from this activity and is measured through 4. Remuneration.

Partial data on *Effort* is required either from complementary catch and effort surveys or collected as part of a stand-alone socio-economic survey in order to determine the:

- number of fishing trips
- days at sea

This information can lend informative value to the calculation of economic performances indicators so that variables like the revenue or costs can be expressed per fishing day or fishing trip in addition to the total annual values.

1. Total revenue

a) Gross value of landings: part of the core variables (*see description above*).
b) Revenue from leasing out quota or other fishing rights where Individual Transferable Quotas (ITQ) or similar systems have established fishing rights that are privately owned;
c) Direct subsidies: including direct payments (e.g. compensation for stopping fishing, refunds of fuel duty or similar lump sum compensation payments), excluding social benefit payments and indirect subsidies (e.g. reduced duty on inputs such as fuel, investment subsidies). Direct subsidies are discussed by OECD in the recently updated Fisheries Support Estimate materials available online[8]. There is no agreed CWP standard for the calculation of these subsidies.
d) Other revenue, including other revenue from use of the vessel (e.g. recreational fishing, tourism, oil rig duty, etc.), or also insurance payments for damage/loss of gear/vessel.

2. Total Costs

The variable group of *Total Costs* are composed by several variables. Cost data can be obtained from the financial records of the fishing enterprises and these data are mostly difficult to obtain. Even when such data are available, they are often protected by various access restrictions based on confidentiality needs (see section on data confidentiality). Data collection through surveys is recommended, overall and this sidesteps issues of data confidentiality.

a) Personnel costs - Paid labour of the crew (including social security costs); and the estimated value of unpaid labour. Often labour is paid by a share of the net revenue of the landings.
b) Variable costs for fishing including: energy costs; other operational costs; commercial costs, repair and maintenance costs.
c) Fixed costs include items such as license renewals; quota lease; bank or accounting costs; vessel insurance, etc.

[8] http://www.oecd.org/agriculture/fisheries/fse.htm

d) Investments are the improvements made to a fishing vessel or fishing gear that aims to improve the longevity of the assets but are not consumed within the given year. In other words, these are items that are not consumed in the course of one year.
e) Capital costs include annual depreciation and opportunity costs which are both intangible costs, without an implied outflow of cash.

3. Capital value

Capital value[9] [10] includes two key components: the value of physical capital (the fleet and gears considering depreciation or historical value) and the value of quota and other fishing rights (the immaterial capital).

4. Remuneration

This variable provides an important and clear estimation of the contribution to livelihood gained from employment in the sector. The total remuneration includes social security costs for all crew members either including or excluding the owner. Although this value may be collected in the same manner as for personnel costs, frequently it is paid through some form of a crew-share calculation and then it is best calculated separately[11] for improved accuracy and ease of collection.

1.3.2 Aquaculture

The additional variables allow for the calculation of 1. Total revenue and 2. Total costs for the aquaculture operations. This allows derivation of the economic profitability of the aquaculture sector which is judged from information on the net revenue (net revenue= total revenue – total costs) of the sector. For management and sustainable development purposes, it is also important to collect information on ***the raw material volume***[12] inputs into aquaculture production, i.e. the weight and value of the raw material. This could be further supplemented with detail on inputs including: water; fertilizer; antibacterial agents and energy consumption to consider environmental impacts.
The sectoral characteristics can be summarized by the calculation of 3. Capital value and lastly, the salary of the fish farmers engaged in the activity provides a tangible measure of the contribution to livelihoods from this activity and is measured through 4. Remuneration.

[9] According to the definition of Capital Value included in the DCF (Commission Decision 2010/93/EU, Appendix VI), the capital value should represent the depreciated replacement value of the physical capital. This should be estimated through the PIM methodology as proposed in the study FISH/2005/03: 'Irepa Onlus Coordinator, 2006'

[10] Methodologies for the socio-economic data described in EU MAP
Ad hoc contract Commitment No. SI2 725 694
Ref. Ares(2016)2440332 - 26/05/2016

[11] Pinello, D., Gee, J., & Polymeros, K. (2018). An unconventional approach to estimating crew remuneration in fisheries. *Marine Policy*, *87*. https://doi.org/10.1016/j.marpol.2017.08.031

[12] https://datacollection.jrc.ec.europa.eu/c/document_library/get_file?uuid=a9a69267-d036-45ad-90b5-f2d0dcd4e80d&groupId=10213#page=60

1. Total revenue

   a) **Gross sales of the aquaculture production** part of the core variables (*see description above*)
   b) **Direct subsidies**; including direct payments; excluding social benefit payments and indirect subsidies e.g. reduced duty on inputs such as fuel or investment subsidies.
   c) **Other revenue** (e.g. from recreational fishing in ponds, tourism, etc. and also including insurance payments).

2. Total costs

The variable group of *Total Costs* are composed by several variables. Cost data can be obtained from the financial records of the aquaculture operation or enterprises and these data are mostly difficult to obtain. Even when such data are available, they are often protected by various access restrictions based on confidentiality needs (see section on data confidentiality). Data collection through surveys is recommended, overall and this sidesteps issues of data confidentiality.

   a) **Personnel costs** - Paid labour (including social security costs) of the fish farmers and an estimated value of unpaid labour.
   b) **Variable costs** - for aquaculture including: energy costs; other operational costs; commercial costs, repair and maintenance costs energy, seed, feed, repair and maintenance, packaging costs, etc.
   c) **Extraordinary Costs** – extraordinary, unexpected costs[13]
   d) **Fixed costs** – include items such as license or permit renewals; leases; bank or accounting costs; building or farm insurance, etc.
   e) **Investments** are the improvements made to the operation or aquaculture equipment that aims to improve the longevity of the assets but are not consumed within the given year. In other words, these are items that are not consumed in the course of one year.
   f) **Capital costs** – the consumption of fixed capital.

3. Capital value

   Capital value includes two key components: the value of physical capital (depreciation or historical value) and the non-tangible assets.

4. **Remuneration** provides an important and clear estimation of the contribution to livelihood gained from employment in the sector. The total remuneration includes social security costs for all employees including the owner. This is often the same value as that reflected on the official payslips and the value may be collected in the same manner as for personnel costs.

[13] https://datacollection.jrc.ec.europa.eu/dc-aqua/var

Annex 1 ISCO-08 Classifications

Fisheries-relevant section of the ISCO classification

MAJOR GROUP	1	Managers
SUB-MAJOR GROUP	13	Production and Specialized Services Managers
Minor Group	131	Production Managers in Agriculture, Forestry and Fisheries
	1312	Aquaculture and Fisheries Production Managers
MAJOR GROUP	6	SKILLED AGRICULTURAL AND FISHERY WORKERS
SUB-MAJOR GROUP	62	Market-oriented Skilled Forestry, Fishery and Hunting Workers
Minor Group	622	Fishery Workers, Hunters and Trappers
	6222	Inland and Coastal Waters Fishery Workers
	6223	Deep-sea Fishery Workers
	6224	Hunters and Trappers
SUB-MAJOR GROUP	63	*Subsistence Farmers, Fishers, Hunters and Gatherers*
Minor Group	634	*Subsistence Fishers, Hunters, Trappers and Gatherers*
	6340	Subsistence Fishers, Hunters, Trappers and Gatherers
MAJOR GROUP	7	Craft and Related Trades Workers
SUB-MAJOR GROUP	75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers
Minor Group	754	Other Craft and Related Workers

	7541	Underwater Divers
MAJOR GROUP	9	Elementary occupations
SUB-MAJOR GROUP	92	Agricultural, Forestry and Fishery Labourers
Minor Group	921	Agricultural, Forestry and Fishery Labourers
	9216	Fishery and Aquaculture Labourers

Aquaculture-relevant section of the ISCO classification

MAJOR GROUP	1	Managers
SUB-MAJOR GROUP	13	Production and Specialized Services Managers
Minor Group	131	Production Managers in Agriculture, Forestry and Fisheries
	1312	Aquaculture and Fisheries Production Managers
MAJOR GROUP	6	SKILLED AGRICULTURAL AND FISHERY WORKERS
SUB-MAJOR GROUP	62	Market-oriented Skilled Forestry, Fishery and Hunting Workers
Minor Group	622	Fishery Workers, Hunters and Trappers
	6221	Aquaculture Workers
MAJOR GROUP	9	Elementary occupations
SUB-MAJOR GROUP	92	Agricultural, Forestry and Fishery Labourers
Minor Group	921	Agricultural, Fishery and Related Labourers
	9216	Fishery and Aquaculture Labourers

Annex 2 Socio-economic data acquisition carried out by International Organizations involved in data collection and represented in the CWP

European Union

Since 2000, an EU framework for the collection and management of fisheries data is in place. This framework was firstly reformed in 2008 resulting in the Data Collection Framework (DCF) and amended lately in 2016 and 2017 to further refine data collection programmes for the period 2017-2019*. Under this framework the EU Member States (MS) collect, manage and make available a wide range of fisheries data needed for scientific advice. In addition to biological and environmental data,* ***social and economic data on fisheries and aquaculture enterprises*** *shall enable the assessment of the social and economic performance of the Union fisheries and aquaculture* sector.

The detailed list of the socio-economic variables and the details of the data collection are defined by the Commission Decision Commission Decision of 12 July 2016 (2016/1251/EU) : Adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019

Table 7 'Economic variables for the aquaculture sector' outline the socio-economic data to be collected for the European aquaculture sector of the *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 (notified under document C(2016) 4329)*

FAO

The FAO has developed a document titled the 'Handbook for fisheries socio-economic sample survey – principles and practice' for the collection of socio-economic data with a standardized questionnaire and sampling methodology set out for member states. It provides a practical kit of tested and standardized tools for the collection of the most pertinent data required for a socio-economic assessment of a fishery.
The handbook consists of three parts: an introduction to the theory behind setting up a survey; a comprehensive explanation of the data collection process, including a section on operational steps; and an explanation of how to use indicators to interpret and present the results of a sample survey to stakeholders, and monitor the fishery.

Reference:

Pinello, D., Gee, J. & Dimech, M. 2017. Handbook for fisheries socio-economic sample survey – principles and practice. FAO Fisheries and Aquaculture Technical Paper No. 613. Rome, FAO.

GFCM

Data Collection Reference Framework (DCRF) - Task VI: Socio-economic

The objective of the GFCM DCRF Task VI on Socio-economic data is to collect information in order to monitor the economic status of the fishing sector. Data collected under this task are needed to develop appropriate policies and strategies, especially in relation to promoting the long-term sustainability of resources and fleets.

Economic data can help to explain fisher behaviour and the overexploitation of fisheries resources. The species that fishers target, the level of exploitation, and the gear that they use are all influenced by the benefits they receive (i.e. the revenue) and the costs they incur.

The systematic collection of socio-economic data is necessary so as to assess the economic consequences of different management options on the varying groups, based on the incentives that these create. Economics provide a framework for the optimal allocation of marine resources for the benefit of society. It provides an approach to valuing the different activities, allowing trade-offs between activities to be assessed and impacts to be measured in a consistent manner.

Under Task VI, economic and social information should be collected by area (GSA) and by fleet segment. Countries collecting these data on a yearly basis are requested to submit them annually (reference year – 2). Biennial submission is requested for those countries that do not have annual economic surveys in place.

Economic and social data are generally collected through sampling surveys using questionnaires, but for some fleet segments and some variables, other data sources could be used (e.g. administrative records, auction sales, and census).

Data collected under this task will help to obtain:

- trends in economic performance and social indicators;
- time series analysis of average annual prices for commercial species;
- analysis of the profitability of fleets (revenue, gross value added, operating cash flow);
- an accurate source of statistical data for landing values and prices;
- ~~a~~ better knowledge of fleet costs and their breakdown in different categories;
- a complete picture of regional, sub-regional and national employment in the fishery sector.

Exhaustive definitions of concepts related to capital value and costs as well as methodologies for calculating these variables are detailed within the *Data Collection Reference Framework (DCRF)* ~~*M*~~*manual* (http://www.fao.org/gfcm/data/dcrf/en/), *which is annually updated following the guidance of relevant GFCM subsidiary bodies.*

OECD

OECD Employment data are collected by Economic sector (Harvest sector – Inland water fishing, Marine Coastal fishing, Marine Deep sea fishing, Aquaculture, Processing), Gender and Occupation rate (Part time, Full time). Data are available at: *https://stats.oecd.org/Index.aspx?datasetcode=FISH_EMPL*

The Pacific Community – SPC

SPC has developed a handbook for the collection of socio-economic to characterise the role that reef and lagoon resources have. The handbook has both a household and a community component with different aims for each.
The fisheries survey component (finfish and invertebrates) aims to estimate the total annual fishing impact that a community has on its resources, and its major reasons (internal consumption, export) for fishing. The household survey component aims to assess how dependent (food security, social institutions, income) a community is on its coastal fishery resources.

Ten priority areas for the handbook were identified and these were:

- *What are the major socioeconomic characteristics of the community?*
- *How much does the community depend on marine resources for consumption, income, and livelihood?*
- *How much is fished by whom?*
- *What is harvested and where is the catch taken from?*
- *What does the community do with the catch?*
- *What is the total catch worth at local market prices?*
- *What are the fishing strategies used?*
- *What gender issues apply?*
- *How does the community keep the fish (preservation and stocks)?*
- *What knowledge is there of fisheries management rules (traditional and governmental)?*

Reference:
Kronen, M., Stacey, N., Holland, P., Magron, F. and Power, M. 2007. Socioeconomic Fisheries Surveys in Pacific Islands: A manual for the Collection of a Minimum Dataset. Secretariat of the Pacific Community.
Available from: www.spc.int