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Guidelines for the implementation of logbook data for statistical purposes

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Document Summary

Draft guidelines are proposed for the implementation of logbook data for statistical purposes. The guideline outline the minimum data requirements needed to implement regional and global capture fisheries statistics, using CWP concepts, standard measures, data structures, CWP standards and classifications. The guidelines would expand the current CWP Handbook section on logbooks and VMS, and identify common information that should be collected in all types of capture fisheries. Regional and national fishery/management authorities would be encouraged to implement these guidelines, or an equivalent approach, to ensure that appropriate standards are implemented and maintained when reporting fishery statistics at national and regional levels in support of CWP's work and contribution to the sustainable management of fisheries and SDG14. The guidelines are consistent with the Code of Conduct for Responsible Fisheries and MCS-based standards such as FLUX.

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1. Introduction

1. In 2019 the CWP Secretariat submitted a proposal to CWP-26 to include global guidelines for capture fisheries logbooks ([CWP-IS/2019/9](#)) as part of an expansion of the CWP Handbook [section on Logbooks and VMS](#). The draft guidelines outlined the use of logbooks for collecting data for use in implementing CWP capture fisheries statistics. The guidelines were proposed for use by regional and national fishery/management authorities to ensure that appropriate standards are implemented and maintained when reporting fishery statistics at national and regional levels in support of CWP's work and contribution to the sustainable management of fisheries and [SDG14](#).
2. CWP-26 reviewed the proposal and provided the following advice ([CWP-26 report, FAO 2019](#)):
 - a. The purpose of the logbook guidelines needed further consideration and development
 - b. The proposed capture fishery concept (CWP-IS/2019/9, Fig.1) was both ambitious and confusing, and required further consideration
 - c. Fishing activity was defined as both a concept and an entity in UN/FLUX and this has caused some confusion in relating the proposed concept (CWP-IS/2019/9, Fig.3) to FLUX
 - d. The term 'logbook' in the context of statistics should be replaced with 'fishing activity information'
 - e. COFI has a definition for a fishery in the context of eco-labelling and that definition can be hosted on the CWP website.
3. The guidelines were referred to CWP's *ad-hoc* Task Group on Reference Harmonization (TG-RH2) for further consideration during the intersessional period 2019-22. The guidelines were considered by TG-RH2 in the context of developing a data structure for logbooks and that work is reported separately to CWP-27 (refer TG-RH2 document).
4. The CWP Secretariat has revised the proposed guidelines in light of the work of TG-RH2 as well as work undertaken by CWP's *ad-hoc* Task Group on catch concepts (TG-catch) and *ad-hoc* Task

Group on fishing effort concepts (TG-effort) which also worked during 2019-22. TG-catch and TG-effort reviewed and further developed statistical concepts and standard measures of catch and fishing effort, respectively, for use in reporting regional and global statistics on capture fisheries.

5. Sections of the revised guidelines which have remained largely unchanged from the proposal submitted to CWP-26 in 2019 are indicated in **green font**.
6. The revised guidelines seek to address the points raised by CWP-26 (points a-e, above) as follows.
 - The purpose of the guidelines (point a) is to outline the minimum data requirements needed to implement regional and global capture fisheries statistics, using CWP concepts, standard measures, data structures (i.e those being developed by TG-RH2), CWP standards and classifications.
 - The capture fishery concept (points b and c) has been re-cast to focus on capture fisheries statistics and CWP objectives and to better align with the fishing activity concept of [FLUX](#).
 - The use of the terms ‘logbook’ and ‘fishing activity information’ was further considered (point d). In the context of CWP, the term logbook has been used to denote a broad range of data types which may range from data reported in a simple logsheet recording the daily activity of a small-scale fisher, to data reported in a detailed logbook recording information per fishing event (e.g. set or haul). Logbooks also provide a record of fishing activities for a fisher as well as a method of collecting statistical information from capture fisheries. In the context of FLUX, logbooks include all fishing activity reports as well as corrections, cancellations and deletions to reported activities. FLUX defines fishing activity information as all data related to a fishing trip including fishing operations, searching for fish, prior notifications, transshipments, landings, departing and returning to port, entering and exiting an area, relocations, discards and processing on board. The CWP Secretariat proposes that the revised guidelines retain the term ‘logbook’ in the context of CWP’s core statistics, data related business including a logbook data structure and the continued development of the CWP Handbook section on [Logbooks and VMS](#). The guidelines do not cover information on post-landing operations, prior notifications, transshipments and other fishing activities which do not directly inform capture fisheries statistics.
 - The [COFI definition of a fishery](#) (point e) is provided in the context of the ecolabelling of fish and fishery products from inland capture fisheries. In that context, a fishery ‘refers to the activity of one particular gear type or method leading to the harvest of one or more species’ and represents the ‘unit of certification ... for which ecolabelling certification is sought, as specified by the stakeholders who are seeking certification’. This COFI definition was developed for ecolabelling processes and does not fully encompass CWP’s broad consideration of capture fisheries in the context of regional and global statistics, including fisheries which have multi-gears and/or multi-sectors. The CWP Secretariat proposes that the FIRMS definition of a fishery ([FIRMS Information Management Policy](#)) is more closely aligned with CWP objectives and that definition states that ‘a fishery is an activity leading to the harvesting of fish, within the boundaries of a defined area. The fishery concept fundamentally gathers indication of human fishing activity, including from economic, management, biological/environmental and technological viewpoints (FIRMS 2006, modified from FAO glossary of fisheries)’. FIRMS further characterizes fisheries according to five thematic approaches¹ including ‘métier’ (when the definition of the

¹ Species or harvested resources, seabeds, fishing practices (or métiers), vessels, people or households are the elements which people perceive as fisheries. The task of the [FIRMS] inventory is to partition (or segment) these elements in a set of Fishery units. Depending on the disciplinary viewpoint, this partitioning process would lead to different results, and accordingly five thematic approaches have been recognized: Resource, Fishing technique,

fishery is focused on the category of fishing activity implemented by a fishing fleet or fisher community) and ‘production system’ (when the definition of the fishery is focused on the socio-economic category of enterprise (for industrial/commercial fisheries) or household (for artisanal/subsistence fisheries)). Both of these thematic approaches suit the logbook disciplinary viewpoint.

7. The revised guidelines for the implementation of logbook data for statistical purposes (herein referred to as ‘logbook guidelines’ are outlined in the following sections. The first section introduces the statistical concepts and other concepts which can be used to characterize capture fisheries. That stand-alone section is provided as an introduction to capture fisheries statistics and would be repositioned within the CWP Handbook (e.g. as an introduction to the section on [capture fisheries statistics](#)). The other sections describe the standard measures used to quantify catch and fishing effort, the minimum data required to derive each measure and the CWP standards and classifications available for reporting those data. Those sections are presented as conceptual outlines and each section would be developed in light of the current work of the TGs.

2. Capture fisheries statistics

8. Capture fisheries is a collective term representing fisheries conducted in marine, brackish and freshwater environments and involving subsistence, artisanal, industrial and sport/recreational fishery sectors. Some fisheries require the use of fishing vessels while other fisheries may be land-based, and catches may be used solely by fishers and their families or traded amongst communities or through markets. In addition, some fisheries may be integrated with aquaculture such as the collection of wild-caught fish for subsequent rearing in cages or the release of fingerlings in fish restocking operations. Fisheries may be managed by national fisheries organisations or regional organisations such as RFMOs. The diversity of capture fisheries reflects each fishery’s purpose and adaptation to regional, economic and cultural factors (refer CWP Handbook section on [capture fisheries statistics](#)).
9. The CWP develops and promotes common standards for fisheries statistics for use by regional fishery bodies and other inter-governmental organizations with a remit for fishery statistics. As part of this work, CWP has developed and/or adopted the concepts for use in capture fisheries. These include statistical concepts for catch (refer TG-catch report) and fishing effort (refer TG-effort report) and other concepts such as fishing activity (refer [FLUX](#)). A diagrammatic presentation of these concepts and relationships is in Figure 1. Métier is the concept of interest for statistical purpose which corresponds to the fishing activity concept defined by FLUX for MCS purpose. Note that these statistical concepts are/will be defined² elsewhere in the Handbook and the guidelines would link to handbook sections covering fishers, fishing vessels, fishing gears, catch and landings and fishing effort.
10. CWP generally quantifies the statistical concepts using standard measures which, in turn, inform regional and global statistics. Some of these standard measures are currently under review as part of the work of TG-catch and TG-effort (paragraph 4) and may be considered further at CWP-27. Note that these standard measures are/will be defined² elsewhere in the Handbook (with links to catch components, standard measures of fishing effort etc).

Métier, Production system and Management system. Key attributes of a fishery unit depend on the thematic approach considered during the fishery identification process. ([FIRMS Information Management Policy](#)).

² Pending the conclusion of the current work of the TGs. In the interim, references to draft/working definitions are included in Annex 1

11. Standard measures used in capture fisheries statistics are derived from a range of sources including vessel registers, licensing and compliance data, survey data, and logbook data. Logbook data are collected at the fisher- or fishery-levels and are subsequently compiled and reported by national and regional organizations. The use of logbook data to derive standard measures will be detailed in the logbook guidelines (Section 3 below).

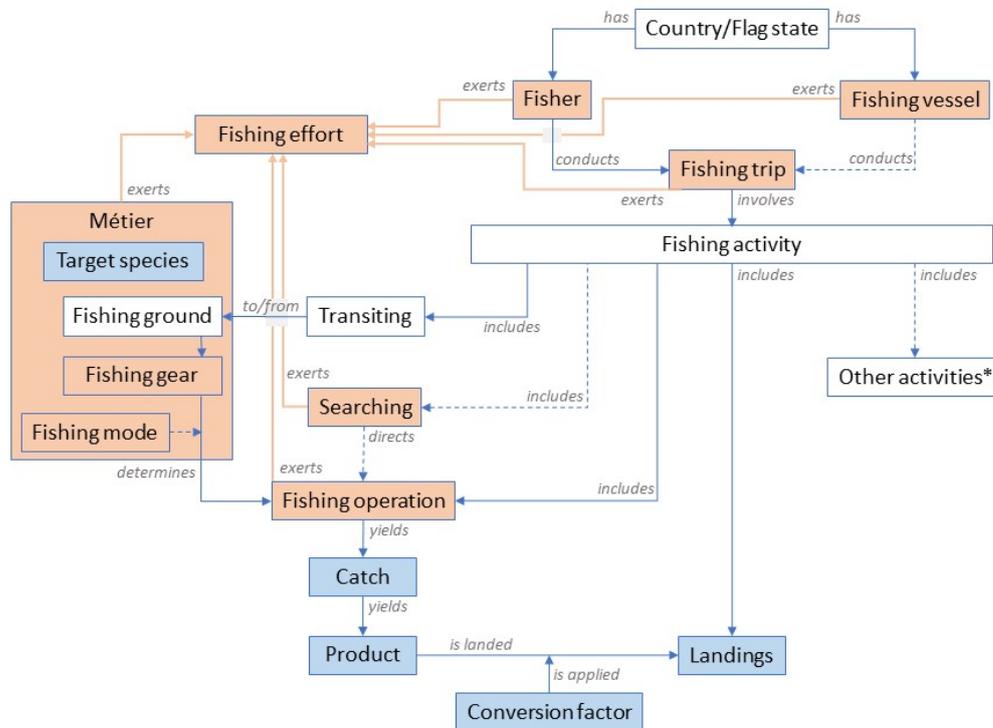


Figure 1: Diagrammatic presentation of concepts and relationships which apply to capture fisheries. Statistical concepts that exert fishing effort are shaded brown (refer TG-effort report) and those representing catch concepts are shaded blue (refer TG-catch report). Dashed lines represent optional relationships. The catch concepts in this diagram are a simplified representation of the catch concepts proposed by TG-catch (refer catch concept diagram, TG-catch report). Métier is an overarching concept which represents a sub-unit within a fishery characterized by a combination of fishing gear, fishing ground, fishing mode and/or target species (refer TG-effort report). Métier is the concept of interest for statistical purpose which corresponds to the Fishing activity concept defined by FLUX for MCS purpose. *Other activities refer to all other activities conducted during a fishing trip including resting, seeking shelter, notifications and transhipments. Pending the conclusion of the current work of the TGs, references to draft/working definitions of these concepts are included in Annex 1

3. Logbook guidelines

12. The compilation of comprehensive and representative regional and global fishery statistics is largely dependent on the availability of primary data from capture fisheries which are collected using standard methodology (refer [Methodology for data collection](#)). The use of standard methodology facilitates the collection of quality assured data which are compatible across fisheries and fishery authorities. This methodology includes globally-agreed logbook guidelines for the

collection of primary data from capture fisheries which, in turn, provides a data collection tool for generating statistics. These guidelines define metadata standards for data collection which encompass concepts, classifications and reference harmonization standards which facilitate the exchange of fishery statistics derived from aggregated primary data.

Application of logbook guidelines at national and regional level

13. The logbook guidelines in this Handbook outline the minimum data requirements needed to implement regional and global capture fisheries statistics based on logbook data collection schemes, using CWP concepts, standard measures, data structures (i.e those developed by TG-RH2), CWP standards and classifications. The guidelines identify common information that should be collected in all types of capture fisheries. Regional and national fishery/management authorities are encouraged to implement these guidelines, or an equivalent approach, to ensure that appropriate standards are implemented and maintained when reporting fishery statistics at national and regional levels in support of CWP's work and contribution to the sustainable management of fisheries and [SDG14](#). These guidelines are consistent with the [Code of Conduct for Responsible Fisheries](#) and MCS-based standards such as [FLUX](#).
14. The guidelines provide standard concepts, definitions and data elements for logbooks for use for statistical purposes and promote a modular approach to the development of regional and national logbook programs. Such modular approach provides flexibility in the collection and reporting of essential data and fishery statistics required to meet the fishery monitoring, assessment and management needs of fishery/management authorities implementing regional or national logbook programs. Each module contributes to an incremental increase in the level of detail (granularity) in data collection and reporting for a fishing trip and related fishing activities, métiers and fishing operations (Fig.1).
15. The modular approach encompasses a broad range of data types which may be reported in either a simple logsheet recording the daily activity of a small-scale fisher, or a detailed logbook recording information for each fishing operation (often referred to as haul-by-haul or per haul data). A logbook provides *inter alia* a method of collecting statistical information on capture fisheries, and may also assist a fisher in recording systematic information on fishing for future reference and decision-making.
16. Best-practice census-based schemes for data collection record logbook data from each individual fishing operation while sample-based schemes generally collect data aggregated by individual fishing trip. The aggregated data reported in the STATLANT questionnaires are derived from logbooks where catch and fishing effort are reported at three levels of granularity primarily associated with a fishing trip, a métier, or a fishing operation (Fig. 1). The STATLANT questionnaires contain the standard measures used for capture fisheries statistics.

Current Handbook section on logbooks

17. Most of the text from the 'logbooks' section in CWP-IS/2019/9 is now published in the CWP Handbook section on [logbooks and VMS](#) and therefore is not repeated here.

Relevant concepts and entity relationships for logbook data

18. The level of detail recorded by fishers in logbooks varies depending on the type of fishing (refer Handbook section on methodology for data collection) and the requirements of the relevant fishery authority, however the concepts of a fishing trip, a métier and a fishing operation generally apply and can be used to develop national and regional logbook guidelines (refer Fig. 1 and Annex 1, refer also TG-catch and TG-effort reports).
19. Generally in a capture fishery (Fig. 1), a fisher departing a base (port, marina or another geographic location either private or public such as a dock, berth, ramp, beach, seawall or pier) with the aim to catch fish is considered to be on a fishing trip and conducting fishing activities such as transiting to a fishing ground(s), practicing a métier(s), searching for fish and/or conducting fishing operations until the fisher returns to base through another transit. The fishing trip, characterized by the flag of the fishing vessel (when used) or nationality of the fisher, consists of a sequence of fishing activities during which the fisher practices one or more métier (e.g. a métier or a sequence of métiers that are practised within a trip) which are characterised by the type of fishing gear used, the target species and fishing ground as well as fishing mode (optional). A métier may notably encompass searching for fish and/or conducting one or many fishing operations which, if successful, result in catch which may be landed for subsistence use by the fisher or commercialized for consumption or industrial use. A fraction of the catch may also be discarded at sea.

Minimum requirements for logbook data for capture fishery statistics

20. This section, when developed, will describe the minimum requirements for logbook data used in capture fisheries statistics. These minimum requirements will be founded on the current TG work on catch and fishing effort concepts and related. Table 1 and Annex 1 convey the essential type of contents for the minimum requirements.

Table 1: Conceptual outline of the minimum requirements for logbook data needed to achieve (a) the required level of granularity or dimensions for reporting, (b) for deriving standard measures of fishing effort and (c) for quantifying the catch components. Concepts, standard measures, catch components and data elements will be defined in Annex 1.

a) granularity/dimension

| Logbook data element | Granularity/dimension |
|----------------------------------|------------------------------|
| Nationality/Flag state | X |
| Fishery sector type | X |
| Fisher/Fishing vessel identifier | X |
| Fishing vessel type | X |
| Fishing ground identifier | X |
| Fishing gear type | X |
| Fishing mode type | X |

b) fishing effort

| Standard measure | | | | | | | | | | | |
|---------------------------------------|--------------------------------|--------------------------|----------------------------------|------------------------------|--|---|----------------------------------|-------------------------------------|--|-----------------------------------|------------------------------------|
| Logbook data element | Number of fishing trips | Number of fishers | Number of fishing vessels | Number of days fished | Number of days absent from base | Number of days on a fishing ground | Number of hours searching | Number of fishing operations | Number of gear sub-units deployed | Number of gear.days fished | Number of gear.hours fished |
| Fishing trip start/end date | X | | | | X | | | | | | |
| Fisher/Fishing vessel count | | X | X | | | | | | | | |
| Fishing ground arrival/departure date | | | | | | X | | | | | |
| Searching start/end datetime | | | | X | | | X | | | | |
| Fishing operation start/end datetime | | | | X | | | | X | | X | X |

| | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|--|--|--|--|---|--|--|
| Number of sub-units deployed | | | | | | | | | | X | | |
|------------------------------|--|--|--|--|--|--|--|--|--|---|--|--|

c) catch

| Catch concepts/components | | Pre-catch losses | Retained catch | Total landings | Nominal landings | Discarded dead | Discarded alive |
|--------------------------------|--|------------------|----------------|----------------|------------------|----------------|-----------------|
| Logbook data element | | | | | | | |
| Species code | | X | X | X | X | X | X |
| Recorded/estimated live weight | | X | X | | | X | X |
| Product type | | | | X | X | | |
| Product weight | | | | X | X | | |
| Conversion factor | | | | | X | | |

4. Items for consideration at CWP-27

21. CWP-27 is kindly requested to review this revised proposal and consider the following items:

- Agree/endorse the conceptual outline and purpose of the guidelines
- Consider the proposal's links and consistency with the logbook data structure developed by TG-RH2 (refer TG-RH2 document) and endorse (or comment) on the guidelines' proposed content
- Agree/endorse the capture fisheries concepts and the diagrammatic presentation in Figure 1, noting that this is a stand-alone section which can be included in the Handbook independently of the guidelines
- Discuss/develop a work plan for the development of the guidelines.

Annex 1: Draft concepts, standard measures and logbook data elements need for minimum requirements

(Conceptual outline only)

| Capture fisheries concepts | Definitions |
|-----------------------------------|------------------------|
| Country | Refer TG-RH2 report |
| Flag state | Refer TG-RH2 report |
| Fisher | Refer TG-effort report |
| Fishing vessel | Refer TG-effort report |
| Fishing trip | Refer TG-effort report |
| Fishing activity | Refer FLUX |
| Transiting | ... |
| Fishing ground | Refer TG-effort report |
| Fishing gear | Refer TG-effort report |
| Fishing mode | Refer TG-effort report |
| Target species | Refer TG-catch report |
| Métier | Refer TG-effort report |
| Searching | Refer TG-effort report |
| Fishing operation | Refer TG-effort report |
| Pre-catch losses | Refer TG-catch report |
| Retained catch | Refer TG-catch report |
| Total landings | Refer TG-catch report |
| Nominal landings | Refer TG-catch report |
| Discarded dead | Refer TG-catch report |
| Discarded alive | Refer TG-catch report |
| Product | ... |
| Conversion factors | ... |
| ... | |

| Standard measures of fishing effort | Definitions (refer TG-effort report) |
|--|---|
| Number of fishers | Refer TG-effort report |
| Number of fishing vessels | Refer TG-effort report |
| Number of fishing trips | Refer TG-effort report |
| Number of days absent from base | Refer TG-effort report |
| Number of days fished | Refer TG-effort report |
| Number of days on a fishing ground | Refer TG-effort report |
| Number of hours searching | Refer TG-effort report |
| Number of fishing operations | Refer TG-effort report |
| Number of gear sub-units deployed | Refer TG-effort report |
| Number of gear.hours fished | Refer TG-effort report |
| Number of gear.days fished | Refer TG-effort report |

| Components of catch | Definitions (refer TG-catch report) |
|----------------------------|--|
| ... | Refer TG-catch report |
| | |
| | |

| Logbook data element* a) Reporting granularity/dimension | Definitions (to be developed) |
|---|--------------------------------------|
| Nationality/Flag state | |
| Fishery sector type | |
| Fisher/Fishing vessel identifier | |
| Fishing vessel type | |
| Fishing ground identifier | |
| Fishing gear type | |
| Fishing mode type | |

| Logbook data element* b) Standard measures of fishing effort | Definitions (to be developed) |
|---|--------------------------------------|
| Fishing trip start/end date | |
| Fisher/Fishing vessel count | |
| Transiting start/end date | |
| Fishing ground arrival/departure date | |
| Searching start/end datetime | |
| Fishing operation start/end datetime | |
| Number of sub-units deployed | |

| Logbook data element* c) Components of catch | Definitions (to be developed) |
|---|--------------------------------------|
| Species code | |
| Recorded/estimated live weight | |
| Product type | |
| Product weight | |
| Conversion factor | |

* Data elements will be developed use in logbooks. This will include definitions and specification of preferred units and formats.