



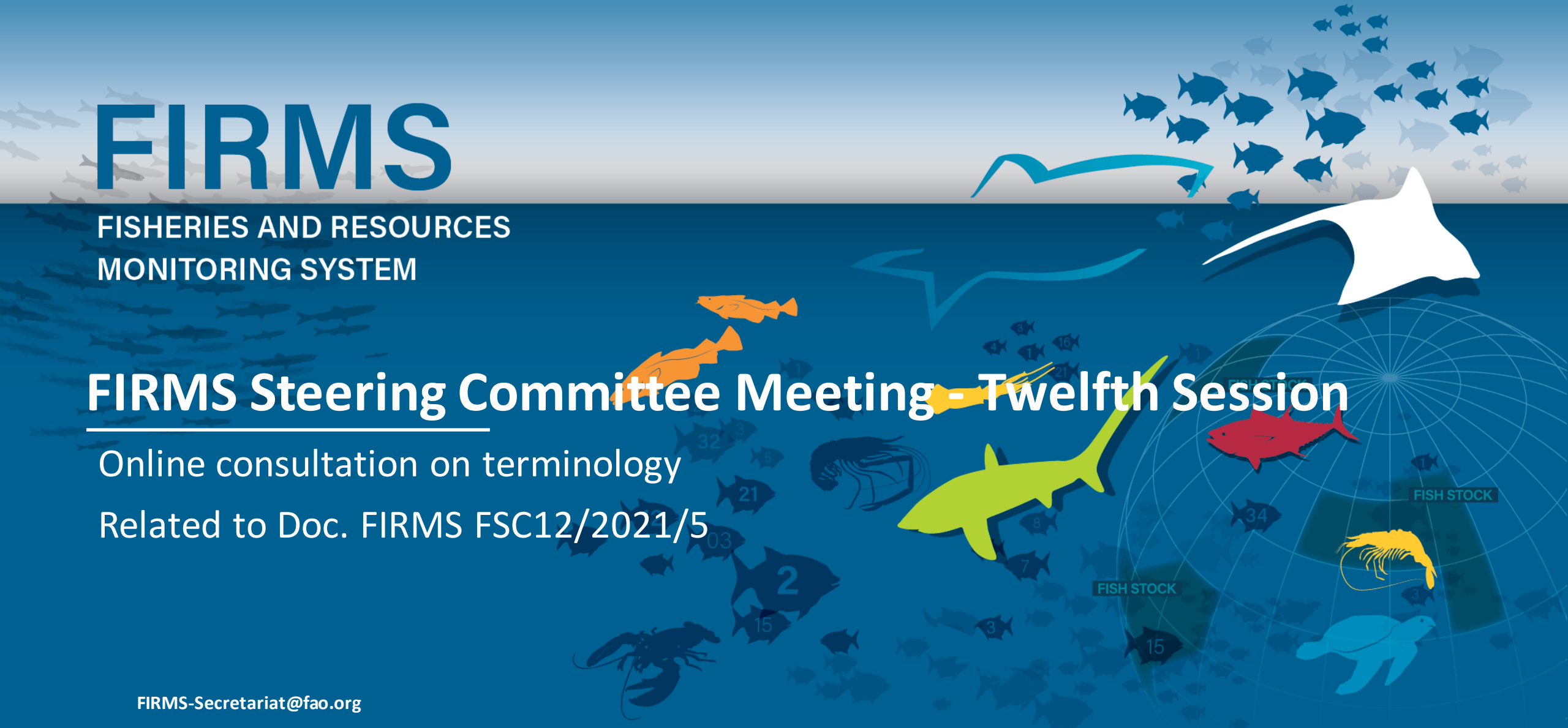
FIRMS

FISHERIES AND RESOURCES
MONITORING SYSTEM

FIRMS Steering Committee Meeting - Twelfth Session

Online consultation on terminology

Related to Doc. FIRMS FSC12/2021/5



Online Consultation on Terminology

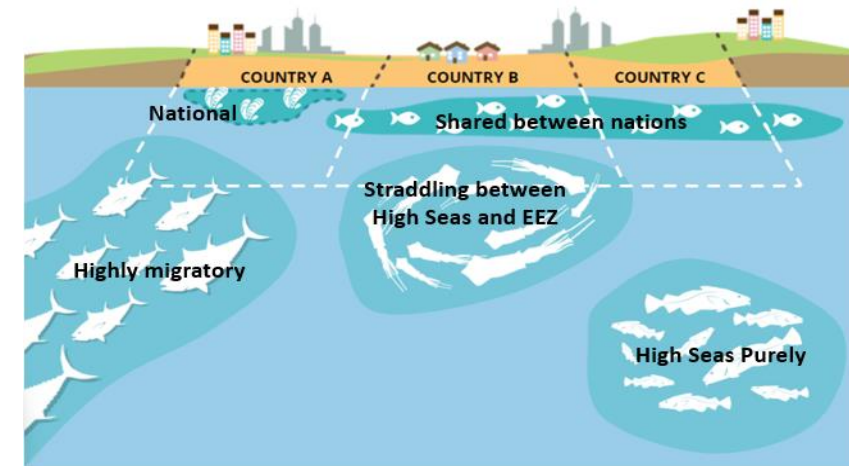
The objective of the online consultation on FIRMS terminology was to agree among members of the FIRMS Technical Working Group on definitions for jurisdictional distribution of fish stocks and types of maritime areas relevant to the Marine Resource and Fishery information domains.

At the FSC11, the definitions for “Highly Migratory” and “Straddling between high seas and EEZ” were revised. Other definitions related to stock’s jurisdictions were referred to the FIRMS TWG for further review.

The extract of the FSC 11 report (<http://www.fao.org/3/ca5247en/ca5247en.pdf>) can be found below:

"With this clarification, FSC11 endorsed the revised definitions ('Highly Migratory' and 'Straddling between high seas and EEZ'), and referred the other definitions related to stocks' jurisdictions (paragraph 108) to TWG for further review (FSC11/D9.2)".

- National
- Shared between nations
- Highly migratory
- High Seas purely
- Straddling between High Seas and EEZ








The consultation counted with fourteen questions, with a total of 11 respondents that shared their views on the suggested terminology.

The following FIRMS Partners participated: CCSBT, FCWC, IATTC, ICES, IOTC, RECOFI, SEAFDEC (2), SEAFO, SIOFA, SPRFMO.


Jurisdictional Distribution of fish stocks

1. Jurisdictional Distribution of fish stocks

| Proposed definitions | | Ranking | |
|---|--|---------|---|
|  | A. "Describes where and how a fish stock distribution overlaps a maritime jurisdiction." | 6 |  |
|  | B. "Typology of fish stocks distribution against maritime jurisdiction." | 0 | |
|  | C. "Jurisdictional qualifier (e.g. "shared", "shared - highly migratory") of the aquatic resource related with its spatial distribution." | 4 | |
|  | D. Other: <i>"Jurisdictional qualifier" (e.g. under national jurisdiction; straddling; high seas discrete stocks; highly migratory) of the fish stock related with its spatial distribution"</i> | 1 | |
| Proposal for endorsement | As C) and D) (a reworked variant of C) represent nearly half of the respondents while A) represents the other half, it is suggested to further discuss during FSC12 | | |


Jurisdictional Distribution of fish stocks

2. National

| Definition options | | Ranking | |
|--|--|---|--|
| <p>■ A. "Marine resource distributed exclusively within one EEZ and/or territorial waters." (Adapted from e-course SDG 14.4.1)</p> | 10 |  | |
| <p>■ B. Other: "Marine resource whose distribution is exclusively within one EEZ and/or associated territorial waters"</p> | 1 | | |
| <p>Proposal for endorsement</p> | <p>Marine resource <i>whose distribution is</i> exclusively within one EEZ and/or <i>associated territorial waters</i></p> | | |

Jurisdictional Distribution of fish stocks

3. Shared between nations

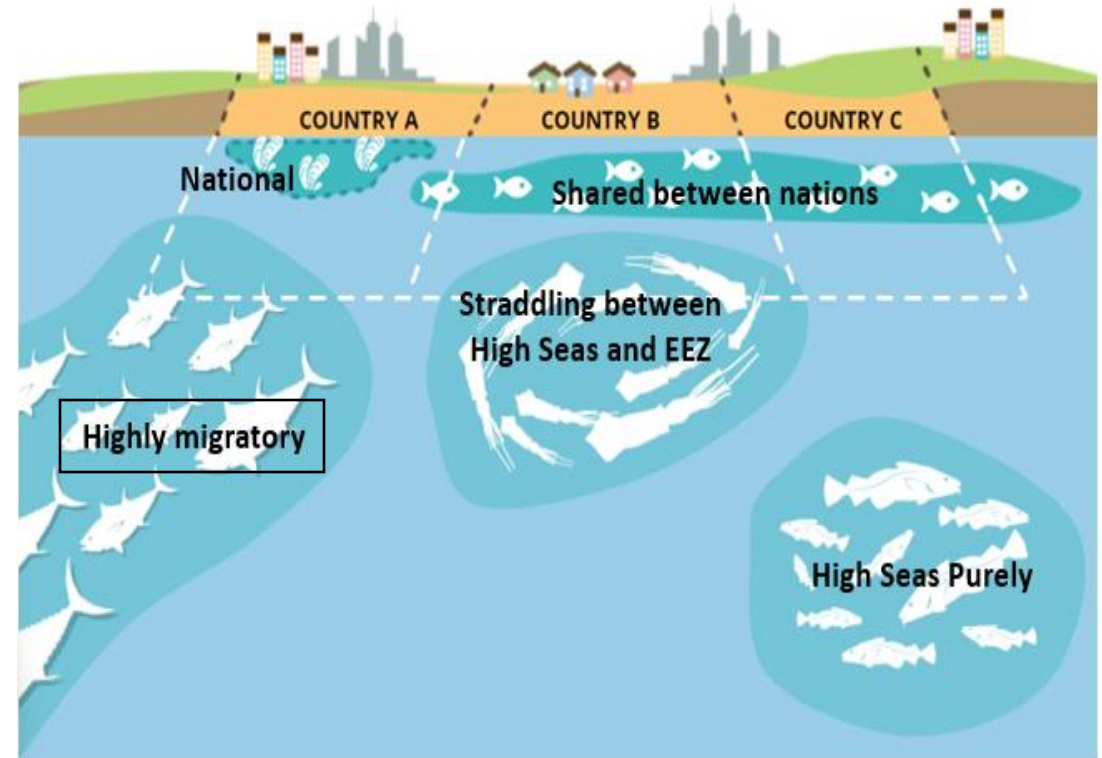
| Definition options | | Ranking | |
|--|--|---|--|
| <p>■ A. "Marine resource whose distribution overlaps EEZs and/or territorial waters of two or more adjacent nations."</p> | 10 |  | |
| <p>■ B. Other: "Marine resource whose distribution overlaps the EEZs and/or the associated territorial waters of two or more adjacent nations"</p> | 1 | | |
| <p>Proposal for endorsement</p> | <p><i>Marine resource whose distribution overlaps the EEZs and/or the associated territorial waters of two or more adjacent nations</i></p> | | |

Jurisdictional Distribution of fish stocks

4. Highly migratory


This definition was endorsed at the FSC11, 2019.

"Marine Resource capable of migrating relatively long distances, which is likely to occur both within EEZs and high seas. These are technically straddling stocks but given their peculiar characteristics they are often managed by specific management bodies, and are here kept as a separate category." (FIRMS FSC11, 2019)



Jurisdictional Distribution of fish stocks

5. High Seas purely

| Proposed definitions | | Ranking | |
|---------------------------------|---|---|---|
| ■ | A) "Marine resource whose distribution is exclusively within high seas." | 8 |  |
| ■ | Other: <ul style="list-style-type: none"> • B) "Marine resource purely in Area Beyond National Jurisdictions" • C) "Marine resource whose distribution is exclusively outside EEZs" • D) "Marine resource whose distribution is exclusively within high seas areas and not EEZs or territorial waters" | 3 | |
| Proposal for endorsement | | As there are different options, it is suggested to further discuss during FSC12 | |

Jurisdictional Distribution of fish stocks

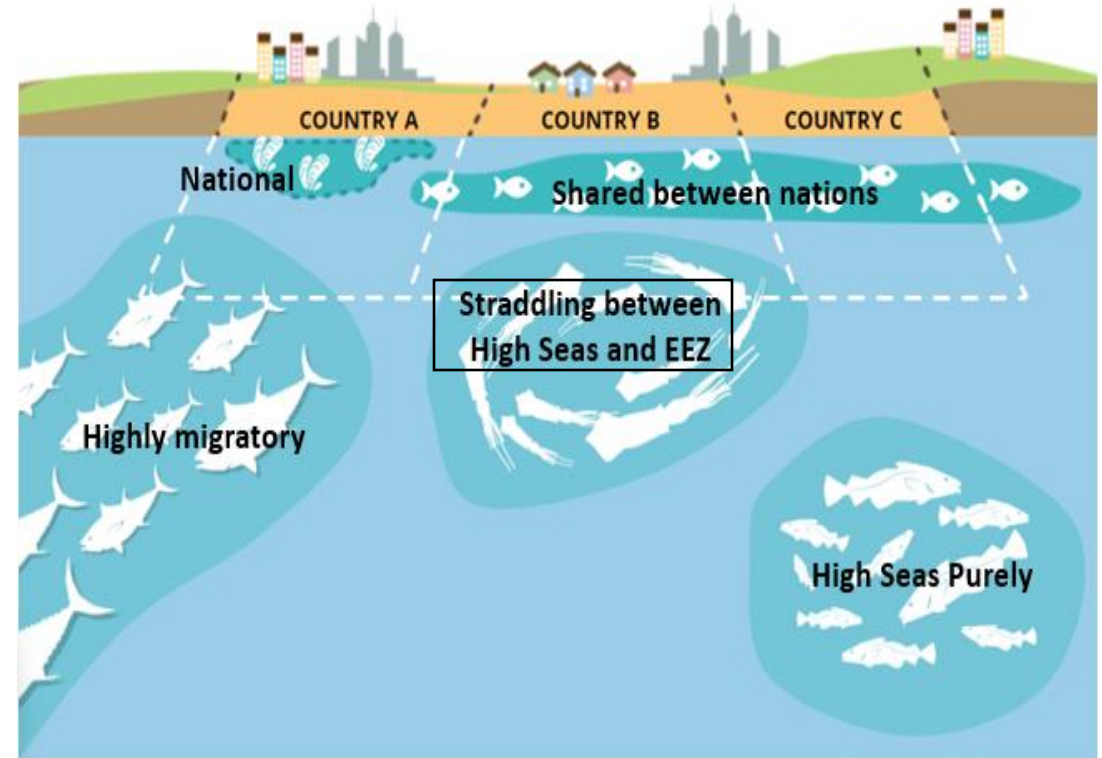
6. Straddling between High Seas and EEZ

This definition was endorsed at the FSC11, 2019.

"Marine Resource whose distribution overlaps EEZ(s) and areas beyond national jurisdiction." (FIRMS FSC11, 2019)

Note: the e-course SDG14.4.1 indicates:

"Straddling stocks are those found in EEZ waters and on the High Seas in areas beyond national jurisdictions (mostly tuna stocks), and that are caught by multiple nations."



Jurisdictional Distribution of fish stocks

7. Comments about Jurisdictional Distribution concept

In this section, respondents shared doubts about the relation between “Jurisdictional Distribution” and “Management Area”.


The definition of Management Unit according to the e-course SDG14.4.1 and FIRMS is the following:

*"The area where the fish was caught and which is **targeted by a unique set of measures**. This unit (i.e., one – or more – species in a particular area) has generally been defined at a regional, national or local scale by a management authority, including through stakeholder consultation. Management units may be used for setting the basis for stock status determination, and may not correspond to the biological stock".*

A new definition to be made and will be proposed in detail later


Maritime area type

8. Maritime area type

| Proposed definitions | | Ranking | |
|---------------------------------|--|---------|---|
| ■ | A. "Typology of maritime areas according to the type of sovereignty or jurisdictional competence exerted by a state on such area." (Wikipedia) | 4 |  |
| ■ | B. "Type of maritime areas on which a management body or authority exerts its mandate." | 6 | |
| ■ | C. Other: <i>"Typology of maritime areas according to the type of rights and jurisdiction exerted by States in or over these areas"</i> | 1 | |
| Proposal for endorsement | As there are different options, it is suggested to further discuss during FSC12 | | |


Maritime area type

9. High Seas

| Definition options | | Ranking | |
|---------------------------------|--|---------|---|
| ■ | A. "The zones that are not included within the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State." (UNCLOS). | 10 |  |
| ■ | B. Other: <i>"All parts of the sea that are not included within the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State" (UNCLOS)</i> | 1 | |
| Proposal for endorsement | IATTC is proposing a different UNCLOS definition (B). <i>"All parts of the sea that are not included within the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State" (UNCLOS)</i> | | |


Maritime area type

10. National waters

| Definition options | | Ranking | |
|---|--------------------------------|---|--|
| <p>■ A. "The Territorial sea and the EEZ of a Coastal State."</p> | 10 |  | |
| <p>■ B. Other: <i>"The waters under the sovereignty or national jurisdiction of a coastal State (internal waters, territorial sea, archipelagic waters, exclusive economic zone)"</i></p> | 1 | | |
| <p>Proposal for endorsement</p> | <p>FSC12 to discuss</p> | | |


Maritime area type

11. EEZ

| Proposed definitions | | Ranking | |
|---------------------------------|---|---------|---|
| ■ | A. "A zone under national jurisdiction (up to 200-nautical miles wide) declared in line with the provisions of 1982 United Nations Convention of the Law of the Sea, within which the coastal State has the right to explore and exploit, and the responsibility to conserve and manage, the living and non-living resources." (FAO Fisheries and Aquaculture Department, FAO, 2014) | 9 |  |
| ■ | B. "An area of the sea in which a sovereign state has special rights regarding the exploration and use of marine resources, including energy production from water and wind." (Wikipedia) | 2 | |
| ■ | C. Other | 0 | |
| Proposal for endorsement | <p>"A zone The waters under national jurisdiction (up to 200-nautical miles wide) declared in line with the provisions of 1982 United Nations Convention of the Law of the Sea, within which the coastal State has the right to explore and exploit, and the responsibility to conserve and manage, the living and non-living resources." (FAO Fisheries and Aquaculture Department, FAO, 2014)</p> | | |


Maritime area type

12. Territorial sea

| Definition options | | Ranking | |
|--------------------------|--|---------|---|
| ■ | <p>A. "The zone of coastal waters extending at most 12 nautical miles from the baseline (usually the mean low-water mark) of a coastal state. The territorial sea is regarded as the sovereign territory of the state, although foreign ships (military and civilian) are allowed innocent passage through it, or transit passage for straits; this sovereignty also extends to the airspace over and seabed below." (UNCLOS https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf https://www.un.org/depts/los/convention_agreements/texts/unclos/part2.htm and https://www.sciencedirect.com/topics/earth-and-planetary-sciences/territorial-sea)</p> | 10 |  |
| ■ | <p>B. Other: <i>"The zone of coastal waters extending at most 12 nautical miles from the baseline (usually the mean low-water mark) of a coastal state"</i></p> | 1 | |
| Proposal for endorsement | <i>The zone of coastal waters extending at most 12 nautical miles from the baseline (usually the mean low-water mark) of a coastal state"</i> | | |

Maritime area type

13. Archipelagic zone

| Definition options | | Ranking | |
|---------------------------------|---|---------|---|
| ■ | <p>A. "The zone constituted wholly by one or more archipelagos and may include other islands, where an "archipelago" means a group of islands, including parts of islands, interconnecting waters and other natural features which are so closely interrelated that such islands, waters and other natural features form an intrinsic geographical, economic and political entity, or which historically have been regarded as such."</p> <p>(UNCLOS https://www.un.org/depts/los/convention_agreements/texts/unclos/pa rt4.htm)</p> | 10 |  |
| ■ | <p>B. Other: "Archipelagic waters are the waters enclosed by the archipelagic baselines drawn by an archipelagic State, upon which that State exerts its sovereignty, which extends to the air space and to the bed and subsoil and their resources (UNCLOS)"</p> | 1 | |
| Proposal for endorsement | <p>IATTC is suggesting a different UNCLOS definitions (B). Based on that, the Secretariat is proposing: "The waters enclosed by the archipelagic baselines drawn by an archipelagic State, upon which that State exerts its sovereignty, which extends to the air space and to the bed and subsoil and their resources."</p> | | |

Jurisdictional Distribution of fish stocks

14. Comments about Maritime Area concept

Respondents had no further comments about the concept of Maritime Area.

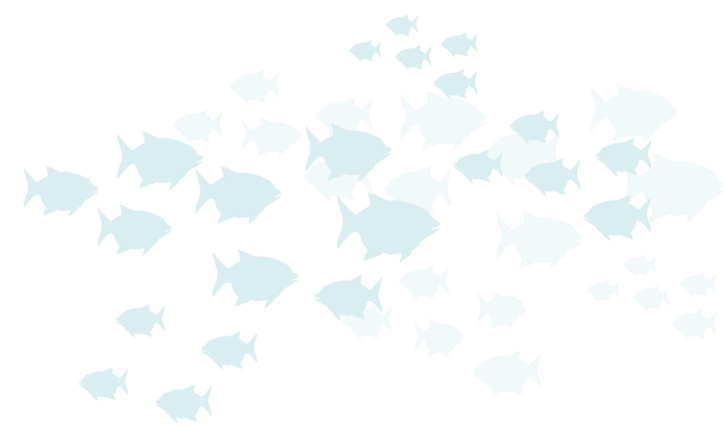


Thank you ▪ Merci
Благодарю ▪ ¡Muchas gracias!
謝謝 ▪ شكرا

FIRMS-Secretariat@fao.org



Management unit definitions



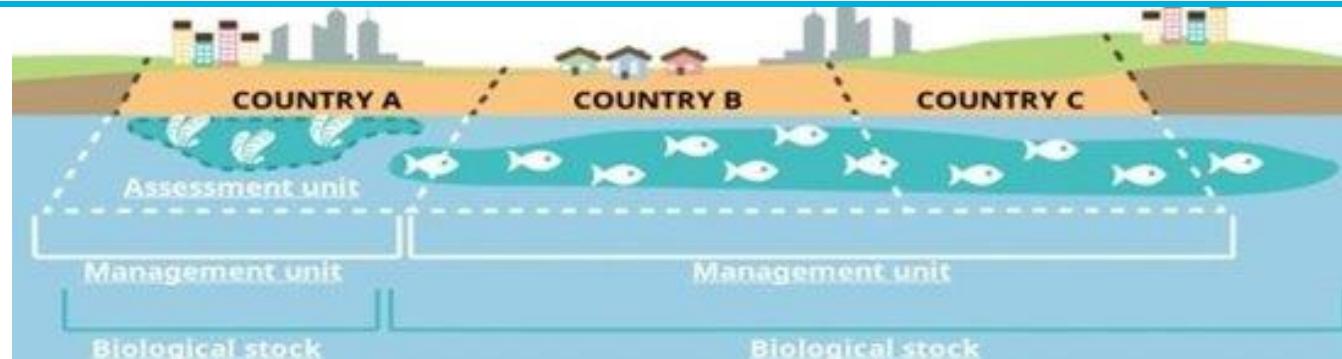
"A dizzying array of stock definitions exists primarily because stocks are an inherently fuzzy measures of nature (Dizon et al. 1992)"

Management units defined by ...

- Areas:** the spatial boundaries of areas within which fisheries operate (e.g. Management Units of the Great Lakes, USA)
- Fleets:** set of fishing fleets exploiting a common fish community over their spatial distribution (e.g. EU GEPETO project)
- People:** a set of fishers responsible for managing a set of species in an area (e.g., Beach Management Units in Tanzania)
- Population dynamics:** areas grouped to contain species with similar abundance trends (Cope and Punt 2009)

Reminder of FIRMS definitions

- **FSC11 approved the definitions of 'Biological stock', 'Assessment unit', 'Management unit', ...** and agreed that these definitions be added as part of the FIRMS standards (FSC11/D9.3).
- **Biological stock** "A subpopulation of a species inhabiting a particular geographic area, having similar biological characteristics (e.g. growth, reproduction, mortality) and negligible genetic mixing with other adjacent subpopulations of the same species."
- **Assessment unit** "A group of individuals of one (or more) species that is the object of a stock assessment and/or any other analysis aiming to investigate stock status. The assessment unit is ideally consistent with the biological stock extent, but can be established on another basis according to the purpose of assessment and the nature of the fishery concerned."
 - Note: Beyond the assessment focus, an Assessment Unit can be considered a Management unit (i.e. delineated within a management jurisdiction such as country's EEZ or RFMO's area of competence) on the basis of practical/political convenience, including for implementation of management measures.
- **Management unit** "The **area where the fish was caught** and which is targeted by a unique set of measures. This **unit (i.e. one - or more - species in a particular area)** has generally been defined at regional, national or local scale by a management authority including through stakeholder consultation."
 - Note: Management units may be used for setting the basis for stock status determination, and may not correspond to the biological stock



Issues with stock definitions

SDG 14.4.1 quality assurance indicates stock definitions are the 2nd most common error in reporting

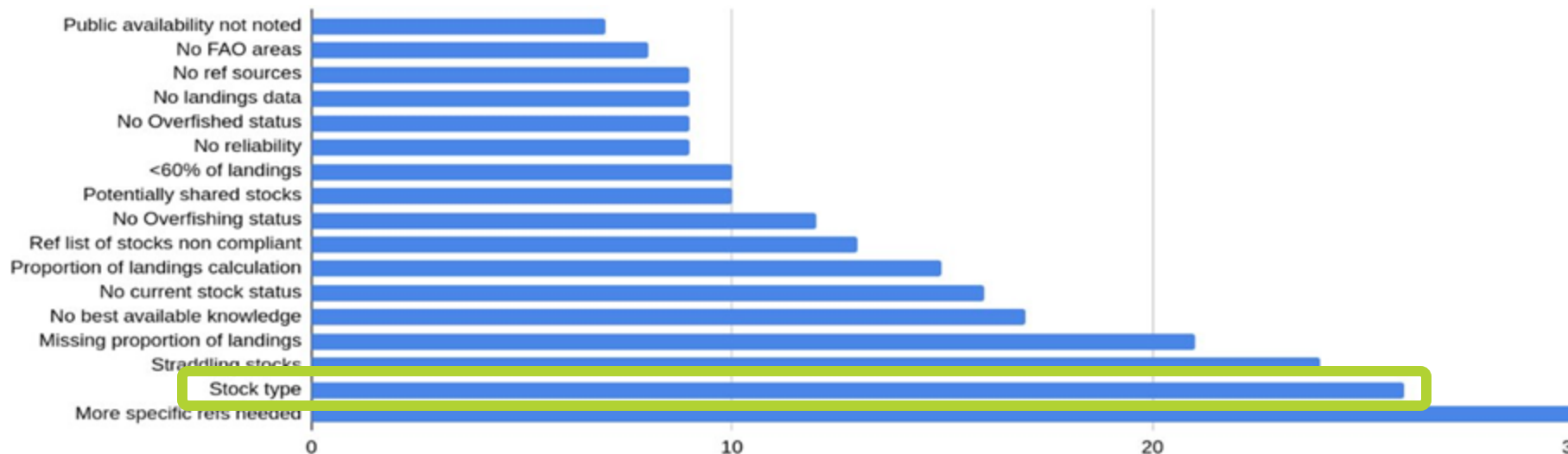
Within the instructions page of the **SDG 14.4.1 questionnaire**, aligns with FIRMS definition

| | |
|---|--|
| <p>215. Management unit</p> | <p>The area where the fish is caught and which is targeted by a unique set of measures. This unit (i.e., one [or more] species in a particular area) has generally been defined at a regional, national or local scale by a management authority, including through stakeholder consultation. For example, the Management unit uses the assessment done in the Assessment unit to define management regulations.</p> |
|---|--|

Within the data sheet of the SDG 14.4.1 questionnaire, no longer clear if unit is Area or Species+Area

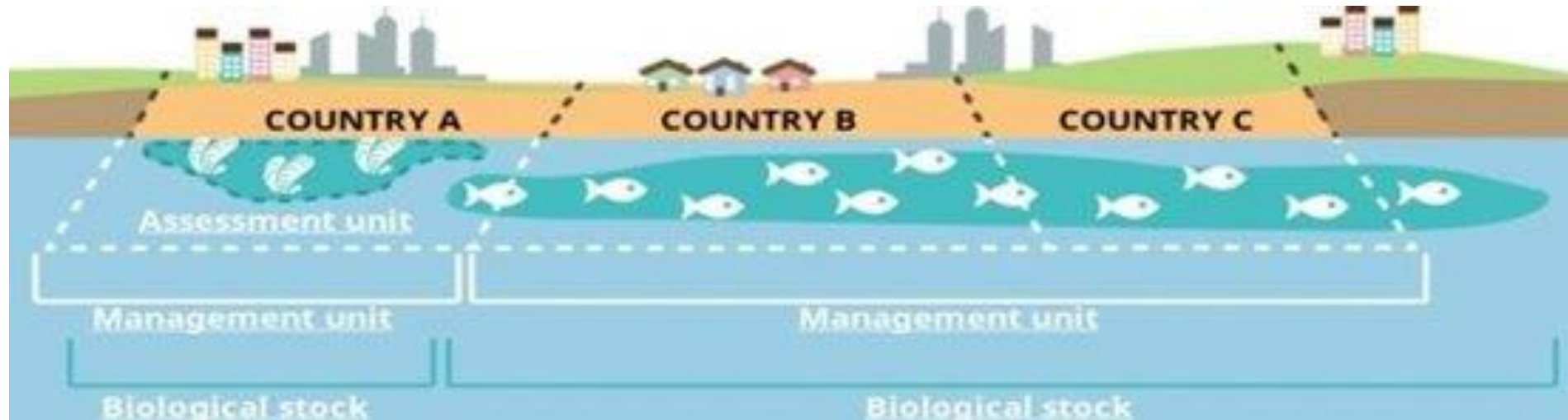
| | |
|--|--|
| | <p>... Assessment Unit (for stocks with an available official stock assessment)</p> |
| <p>215. Stock is considered as ... (possible to select multiple answers, place "X" in the relevant cell(s))</p> | <p>... Management Unit (Unit that is used to implement management measures based on a stock assessment or not)</p> |
| | <p>... Other (i.e., Species x Area) unit (if none of the above)</p> |

Most common errors
(1st review)



Reminder of FIRMS definitions

- "Stock" in GRSF/FIRMS is defined by the **Species + Area**
- Define a stock as an :
 - Assessment unit : ***Species + Assessment Area***
 - Management unit : ***Species + Management Area***
 - Other, e.g. marine resource, biological stock : ***Species + other area definition***



Diverse experiences with management unit in FIRMS

Within the **FIRMS IMP** georeferencing standards

| | |
|-----------------------------------|---------------|
| RFB groups | rfb |
| ICCAT geo-references | iccat_geo |
| ICCAT spatial management units | iccat_smu |
| ICCAT management units - Albacore | iccat_smu_alb |

Species * assessment-management areas

Within the **GRSF knowledge base**, e.g.

- ICES advice is given by Functional Units (*groupings of ICES statistical rectangles*)
- New Zealand assessment/management areas based on biology, i.e. shifting boundaries of species distribution

Species * assessment areas, considered management units under certain criteria, e.g. TAC

Species * assessment-management areas

| | |
|--|-----------------|
| Reporting areas | rep |
| Pacific tuna and tuna-like reporting areas | pac_tuna_rep |
| Pacific tuna east-west reporting areas | pac_tuna_ew_rep |

Exists in FIRMS, used by IATTC

Issues with stock definitions

Required improvements on standards – New concept/definitions - Traceability units

Seafood industry actively requiring an ID to identify fisheries:

- Identification of their sources throughout supply chain
- Support evaluations of sustainability

To meet this requirement, **3 main needs** in relation to fishing units:

1. Fishery linked to a single stock record
2. **Define management units via “management or reporting areas” instead of “fishing areas”**
3. Resolve how to identify the Marine Resource type of Stock record - where no assessment is conducted

The proposed **Traceability Unit** semantic ID is structured as follows:

<Species> + <Assessment Area(s)> + <Management or Reporting Area(s)> + <Management Authority(ies)> + <Gear type> + <Flag State>

Example of a semantic ID:

asfis:HAD + FAO: 27.4, 27.6.a, 27.3.a.20 + eu: HAD/5BC6A + authority: int:EC, NEAFC + isscfg:OTB + iso3:ESP

Proposed definitions

- **Assessment area** – geographical delineation/boundary for the area over which the stock is assessed.
 - Geographic boundaries based on – Statistical areas, ecological areas such as LMEs or ecoregions, ICES functional units
- **Management area** – geographical delineation/boundary for the area where specific management measures apply
 - Boundaries based on – RFB competence areas, Jurisdictional areas, species specific management areas, such as for ICCAT.

Developing criteria to build definitions

An example using ICES Sandeel Functional Units

| Application of TAC as a management measure | Management Unit | | |
|---|--------------------|-------------------|-------------------------------|
| | ICES understanding | SFP understanding | FIRMS/SDG14.4.1 understanding |
| TAC (perfect alignment to assessment unit) | yes | yes | yes |
| No TAC | no | unknown* | unknown* |
| No TAC set for the stock, but set by country EEZ (imperfect alignment) | no | unknown | yes |
| Stock a subset of a bigger TAC area (imperfect alignment) | no | unknown | yes |
| Stock overlays multiple TAC areas (imperfect alignment) | no | unknown | no** |
| unilateral TAC imposed by one country (perfect alignment) | no | yes | yes |
| TACs set for multiple species if there are assessments one at the single species level (e.g. Lophius spp) | - | unknown | yes |

The criteria for deciding whether a stock is considered a management unit - Yes/No/Unknown - should be clearly listed

*Unknown as a different management measure could be in effect

** No as management measures should be unique set

Criteria for discussion : A Management Unit should:

- perfectly align with the assessment unit (does not align to SDG 14.4.1 definition);

- have a unique set of management measures

- give information on the area; and

- give information on the organization(s) setting the management measures

Proposed adjustment to management unit definition

- **Original:** “The area where the fish was caught and which is targeted by a unique set of measures. This unit (i.e. one - or more - species in a particular area) has generally been defined at regional, national or local scale by a management authority including through stakeholder consultation.”
 - Note: Management units may be used for setting the basis for stock status determination, and may not correspond to the biological stock.
- **Proposed:** “*A group of individuals of one (or more) species in an area* where the fish were caught and which is targeted by a unique set of measures. This unit ~~(i.e. one - or more - species in a particular area)~~ has generally been defined at regional, national or local scale *and includes information of the* management authorities *that set the measure* including through stakeholder consultation.”
 - Note: Management units may be used for setting the basis for stock status determination, and may not correspond to the biological stock.

Action for FSC12

FIRMS Secretariat brings this as a follow-up to the GRSF TWG recommendation 6: *"Recommendation to review the proposed Traceability Unit standard in conjunction with the planned revision of the SDG questionnaire."*

This recommendation may lead:

- FSC to make straight decisions on the definitions of
 - **Assessment Area**
 - **Management Area**
 - **Management Unit**
- Or consider setting up a TWG on this question in the following intersession
 - Dec-Jan



Thank you ▪ Merci
Благодарю ▪ ¡Muchas gracias!
謝謝 ▪ شكرا

FIRMS-Secretariat@fao.org

