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 | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Alimentación y la Agricultura | منظمة الأغذية والزراعة للأمم المتحدة

COORDINATING WORKING PARTY ON FISHERY STATISTICS

Intersessional Meetings of Aquaculture and Fisheries Subject Groups – Joint Session

Rome, Italy, 2-5 November 2021

Towards a statistical definition of Small-Scale Fisheries: an update on the use of a matrix scoring approach to the characterization of scale of fishing units

CWP-IS/2021/Pr6.1

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- **Identified** need for standards on Small-Scale Fisheries (SSF) to monitor SDGs (especially 14.b)
- **Noted** FAO VGSSF, recognize a single, global **definition** of "small-scale fisheries" is not possible
- **Reiterated** CWP mandate to provide standards for enabling comparability of global statistics - not yet instructed to address statistics according operational scale
- **Requested** consideration to develop **non-prescriptive guidelines** on common elements to identify SSF:
  - Support development of a standard for SSF statistics
  - Contribute to sector-disaggregated data collection at country level
- **Recommended** countries, regional & subregional organizations choose own definition of small-scale according to their management needs and political incentive
- **Requested** further input and update from FAO CWP Secretariat

Why characterize small-scale fisheries?

- Challenge to practically identify small-scale fisheries
  - to support policy and management, without using restrictive, overly-rigid quantitative metrics
- National level
  - Differentiation of scale of operations may be required for management or for focussed policy objectives
  - SSF definition may appear in management frameworks or national legislation
  - Typically single/limited number of quantitative metrics
- Global level only soft definitions limits comparison between countries and regions
- No individual metric with a cut-off point capable of distinguishing between small-scale and larger-scale fishing activity

Characterization Matrix approach

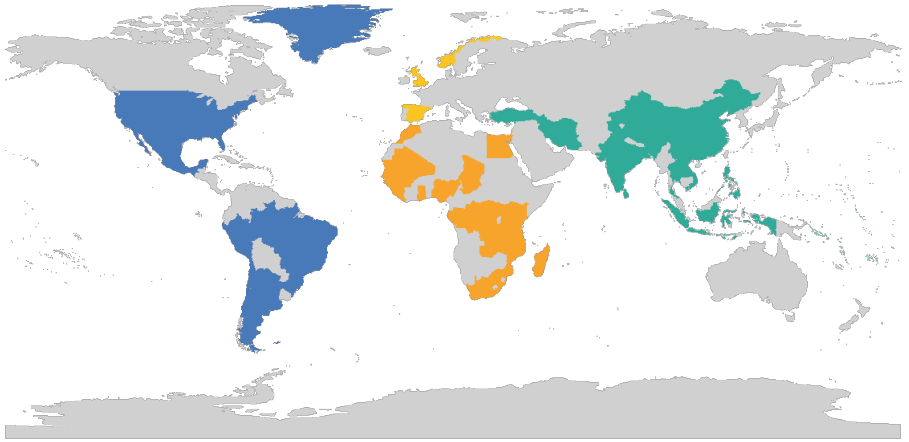
- Applied a range of elements related to fishing units
- Characteristics relate:
  - Vessel size, motorization
  - Gears active/passive, mechanization
  - Storage/refrigeration
  - Crew, type of ownership
  - Time commitment, trip duration/distance
  - Harvesting operation
  - Disposal of catch, value adding
  - Integration in management system/economy
- Each characteristic has 4 levels described across range of scale from small to industrial
- A score is given (0 to 3) - Aggregate score indicates location of the unit on the continuum of SSF to LSF

Update on the matrix

- Since the 27th Meeting of the FS the matrix scoring approach has been applied within the "Illuminating Hidden Harvests" (IHH) global study of SSF.
- IHH commissioned case studies of SSF from 58 countries
- Individual fisheries covered were scored using the matrix.
- Importantly, the fisheries which were identified by the case study authors were those that we considered to be SSF within their national contexts

58 countries and territories span range of economic status and geographic locations. Represented:

- 70% global marine catch
- 65% inland catch
- 77% marine fishers,
- 38% inland fishers and post-harvest inland workers



Example scoring result

- A marine fishing unit with the characteristics as follows, scores 11 which is a typical score of the smaller end of SSF
- Vessels less than 12m length with an outboard engine of less than 100hp
- Using gillnets and traps (passive gear) with no onboard mechanization
- Fishing for less than 6 hours per day, less than 10 km from shore, all year round
- Catch is stored in on deck iceboxes
- The vessel is operated by its owner and family members
- The catch is landed chilled and sold to local traders or locally processed
- The fishers/gear is licensed and the vessel is locally registered, but no landing fees are paid on the catch.

MARINE	SCORE			
Characteristics	0	1	2	3
Indicative gears				
1) Fishing gear	Labour intensive gear	Passive gear	Gear with aggregating devices	Highly active gear
2) Mechanization	No mechanization	Small power winch/hauler powered off engine	Independently powered gear deployment/hauling	Fully mechanized gear deployment & hauling
Vessel				
3) Size of fishing vessel	No vessel	<12m, <10GT	24m, <50GT	>24m, >50GT
4) Motorization	No engine	Outboard engine/inboard engine ≤100hp	inboard engine <400hp	inboard >400hp
Operations				
5) Daily trip/multi-day	< 6 hours	day trip (< 24 hours)	< 4 days	> 4 days
6) Fishing grounds / zone / distance from shore	< 100 m from shoreline/ baseline/ high-water mark	< 10 km from shoreline	< 20 km	>20 km from shoreline/ baselines
Storage / Preservation				
7)Refrigeration / storage	No (cold) storage	Ice box (i.e., on deck)	Ice hold (i.e., below deck)	Refrigerated hold
Employment / Labour				
8) Labour / crew	Individual and/or family members	Cooperative group	≤ 2 paid crew	> 2 paid crew
9) Ownership	Owner / operator	Leased arrangement	Owner	Corporate business
10) Time commitment	Occasional	Full-time, but seasonal	Part-time all year	Full-time
Use of catch				
11) Disposal of catch	Household consumption / barter (exchange for payment in goods or services)	Local direct sale at landing site (exchange for monetary payment)	Sale to traders	Onboard processing and/or delivery to processors
12) Utilization of catch, value adding / preservation	For direct human consumption	Chilled/locally processed/cured	Frozen	Frozen/chilled for factory processing (for human consumption or fishmeal)
13) Integration into economy and/or management system	Informal not integrated (no fees required)	Integrated (registered, untaxed)	Formal, integrated (licensed fisher, payment of landing fees)	Formal, integrated (licensed, taxed)

Some preliminary findings of the IHH study (1)

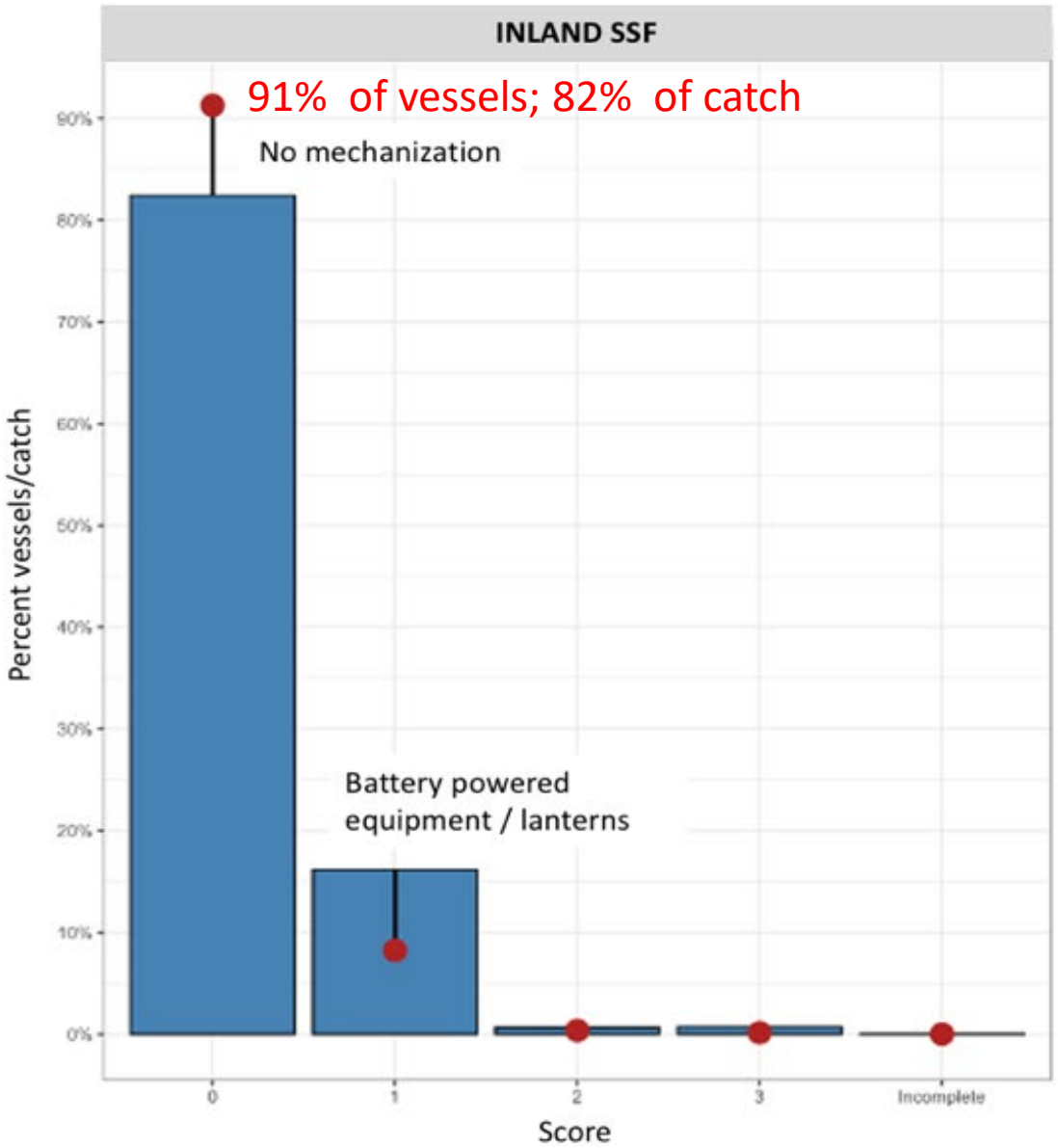
- Matrix provides a standardized approach
- Can be applied to any fishery to understand where it lies along the continuum of small-scale to large scale fishing.
- Quite sizeable spread of scoring across the SSF described in the 58 cases studies
- Confirming there is a continuum of SSF
- Although each of the characteristics in the matrix are described across a range of scale from small to industrial (separated into four bands for each characteristic) some SSF scored in the higher bands for some characteristics
- Matrix approach is suitable for data-limited fisheries.

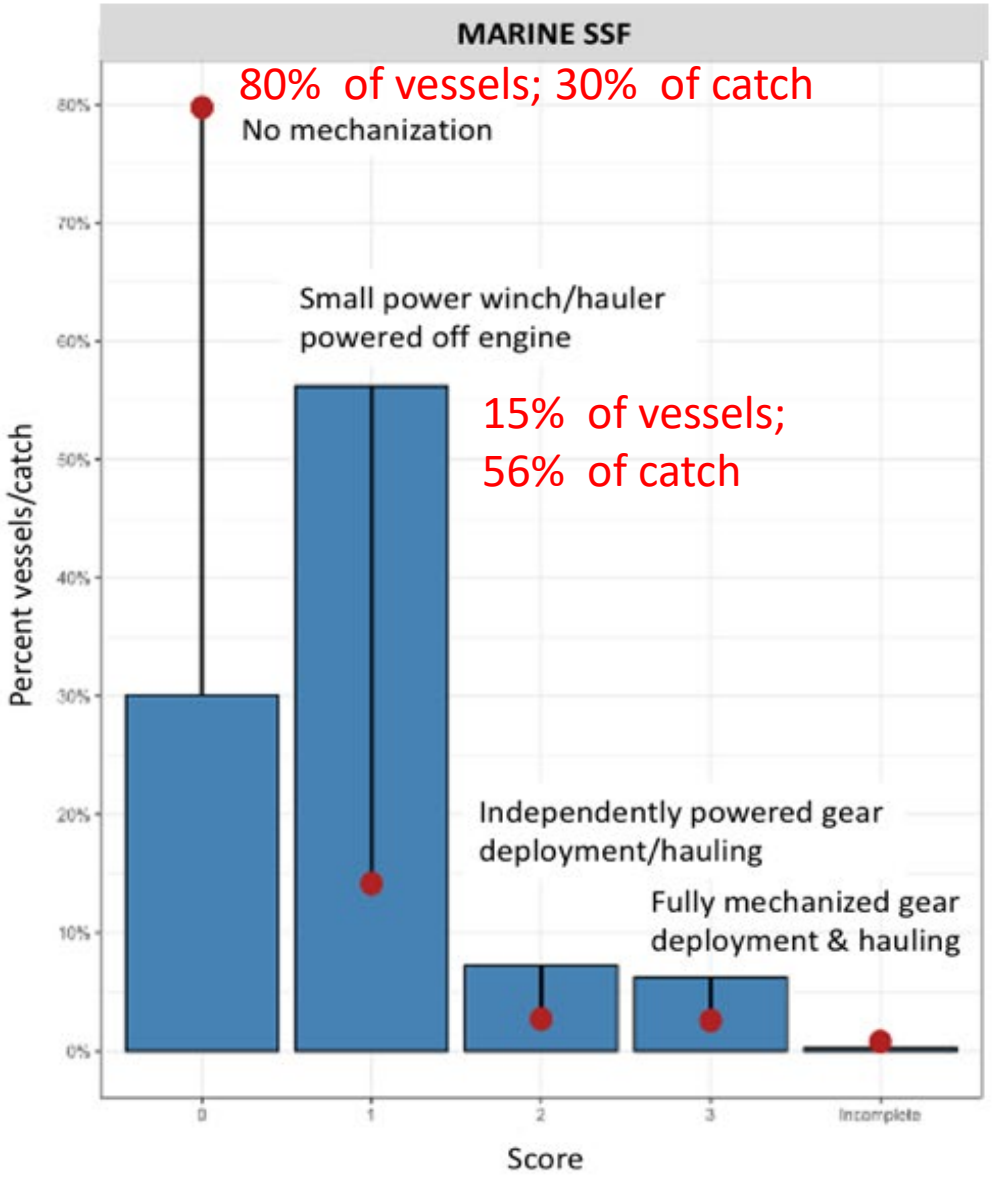
Some preliminary findings of the IHH study (2)

- Scoring fishery characteristics using value ranges can be informed from a variety of sources (e.g. ranging between official census, surveys to expert elicitation)
- Identifiable differences in characteristics (e.g. mechanization, engine power, paid crew, level of on-board chilling or preservation) developed, developing and least developed countries
- Total landings from non-mechanized and non-motorized marine SSF are low, compared to mechanized and motorized marine SSF. The reverse is true for inland SSF

Some preliminary findings of the IHH study (3)

- Clear differences between inland and marine SSF
  - Inland SSF tending towards lower scoring across most characteristics
- Matrix approach able to highlight fishing operations/units which lie at interface of small-scale and large-scale
  - i.e. a small vessel with a high-powered engine and large-scale level of fishing effort
- Catch landed entered different value chains including exports
- Relatively little was expressly for household consumption.


INLAND SSF
91% of vessels; 82% of catch
No mechanization
Battery powered equipment / lanterns
Percent vessels/catch
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
Incomplete
Score


MARINE SSF
80% of vessels; 30% of catch
No mechanization
Small power winch/hauler powered off engine
15% of vessels;
56% of catch
Independently powered gear deployment/hauling
Fully mechanized gear deployment & hauling
Percent vessels/catch
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
Incomplete
Score

From the preliminary results of the IHH study

- Evident that **rapid, and objective classification** of fishing operations based on multiple characteristics **is possible**
- **Helpful in data poor fisheries**, where comprehensive, statistical fleet data may not be collected or available
- Deeper analysis of the IHH data is expected to yield some more concrete conclusions regarding the **utility of the matrix approach as a tool for identifying key features of SSF at national level**

Will this move us towards a statistical definition?

- Matrix can assist with **developing national definitions**
- Will it support development of a standard for SSF statistics?
  - The matrix approach can provide **a common framework for attributing a score** to a fishing operation that links it to its scale of operation
  - **As part of non-prescriptive guideline** on common elements to identify SSF to contribute to sector-disaggregated data collection at country level are very possible
  - Potential to use the matrix to **identify regional metrics** and **move towards harmonization** at regional level.
- Globally-endorsed, quantitative statistical definition **seems unlikely**
  - Regional differences and those between developed and developing countries means that agreement on a definitive cut-off score is likely to be contentious.

Feedback sought from CWP

- Is there interest in further testing of the matrix?
- Comparative analysis in its applications as research tool for Regional organizations?
- Possible next steps?