



ASIA AND PACIFIC COMMISSION ON AGRICULTURAL STATISTICS

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Agenda Item 6.3
Status and Recent Development in Fishery and Aquaculture Statistics

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What is fishing and aquaculture?

ISIC 03 Fishing and Aquaculture

unstats.un.org/unsd/cr/registry/isic-4.asp

- **031 Fishing** -- capture fishery, i.e. **the hunting**, collecting and gathering activities directed at removing or collecting live wild aquatic organisms including plants from the oceanic, coastal or inland waters for human consumption and other purposes by hand or more usually by various types of fishing gear such as nets, lines and stationary traps.
- **032 Aquaculture** -- the production process involving the **culturing or farming** of aquatic organisms using techniques designed to increase the production of the organisms in question **beyond the natural capacity** of the environment. Culturing/farming refers to the rearing up to their juvenile and/or adult phase **under captive conditions** of the above organisms. In addition, aquaculture also encompasses individual, corporate or state **ownership** of the individual organisms throughout the rearing or culture stage, up to and including harvesting.

Fisheries statistics – What need to collect

Impacts of fisheries operations to natural resources/ environment:

- Status and changes of operations
- Status and changes of biological environment (targeted and non-targeted components)
- Status and changes of physical environments

Contribution of fisheries sector:

- Food security
- Social aspects (number of people supported by fishery sector)
- Economic aspect (contribution to national GDP)

Impacts from other sectors/ environment:

- Interaction with other sectors (e.g. inputs, outputs, competitions with aquaculture and agriculture)
- Shift and changes of environments supporting fisheries sector (e.g. habitat deterioration, climate changes impacts)

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Fisheries statistics – Currently collected

FAO Global Statistics:

- Capture production by species
- Aquaculture production and farm-gate price by species
- Aquaculture facilities (size of ponds, cages, etc)/ Land and water areas used for aquaculture
- Number of fishing boats in operation by size and motorization status
- Number of engagements by genders, by subsectors, and by status of engagement
- Import/ Exports/ Production of fish and fisheries commodities
- Disposition (amount used for fish meal/ fish oil etc)

Data collected for fisheries management (Regional Fisheries Bodies):

- Catch by species with detailed catch location
- Efforts - Operational data (gears used, number of fishing days etc)
- Size distribution of fish caught

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Fisheries statistics – Current coverage

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SIAP Training Course

19-20/11/2015

High demand in MCS >> high priority :

international managed fisheries > marine large scale > coastal, aquaculture, inland (mostly small scale) > subsistence, recreational

- Weak in data on social economic aspects and environmental impacts
- Lack of comparability and compatibility with other sectors' statistics

- ✓ No single data collection instrument can collect all data
- ✓ Need the use of different approaches to data collection according to the segment

Economic
Contribution

Employment

Food

■ Large Marine

■ Small Marine

■ Inland

Fisheries statistics – What need to collect

Impacts of fisheries operations to natural resources/ environment:

- Status and changes of operations
- Status and changes of biological environment (targeted and non-targeted components)
- Status and changes of physical environments **Fisheries specific**

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Impacts from other sectors/ environment:

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Global Strategy – cross sectoral data collection

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Improvement effort – small scale/ social economic Guideline of Fisheries and aquaculture surveys

Census/ census-type survey:

Objectives:

- Snapshot of comprehensive picture of operations and contribution of small scale fisheries and aquaculture activities
- Collecting frame information – aquaculture facilities, land/water use, fishing boats/ gears/ fishing grounds, landing areas

Prospect:

- Both commercial and non-commercial activities
- Evaluation of value-added process within a household

Following steps (based on frame information):

- Establishment of administrative records/ registries
- Regular production surveys/ sample-based survey at landing sites
- Communication surveys
- Area frame > Master sampling scheme

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Improvement effort Fisheries module (Theme14) in WCA 2020

- Around 15-20 countries have included items on fisheries in the WCA 2010 round
- Countries decide the items to include based on their own need
 - 1401 ENGAGEMENT IN OWN ACCOUNT CAPTURE FISHING ACTIVITY
 - 1402 NUMBER OF HOUSEHOLD MEMBERS (PERSON MONTHS) ENGAGED IN FISHING AND GENDER
 - 1403 NUMBER OF FISHERS (PERSON MONTHS) EMPLOYED BY THE HOUSEHOLD AND GENDER
 - 1404 TYPE OF FISHING
 - 1405 MAIN PURPOSE OF HOUSEHOLD FISHING ACTIVITY
 - 1406 TYPE OF FISHING VESSEL USED
 - 1407 TYPE OF FISHING GEAR USED: International Standard Classification of Fishing Gears (ISSCFG)

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Improvement effort – environment sustainability Global requirements/ goals

Sustainable Development Goals (SDGs) :

- Theme 14 – special focus on marine environments
- Seven out of 10 goals with relevance with fisheries
- 14.7 focusing on SIDs/ least developing countries; 14b on small scale fisheries;

Aichi biodiversity target:

- Target 6: management fish, invetebrates and aquatic plants
- Target 7: aquaculture area (together with agriculture/ forestry)
- Target 10: vulnerable ecosystem, e.g. coral reef, under climate change and ocean acidifications
- Target 11: protected areas for 17% of inland waters, 10% of coastal and marine waters

Blue Growth Initiatives (BGI) :

- Sustainable development and management of fisheries
- Fact-based, ecosystem approach management
- [Sustainability of fisheries] = [sustainability of supporting ecosystems]
- High monitoring requirements – no single instruments can handle

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Improvement effort – environment sustainability

Corresponding actions – data/ information

Conceptual framework for data integration :

- Global Strategy – Integration of multiple domain data; SPARS; Master sampling framework;

Standard concepts and classifications :

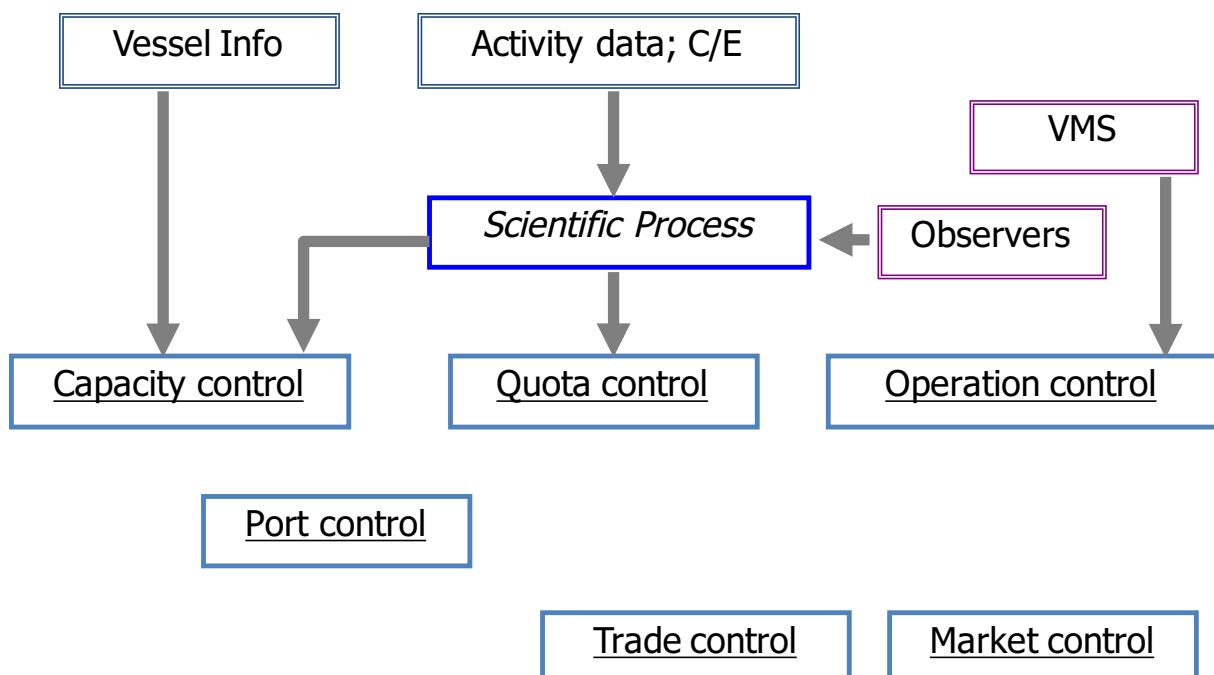
- SEEA land/water use classifications – enhancement in water use components
- CPC v.2.1 – substantial revision in Division 04 Fish and fishing products
 - separation of wild and aquaculture origins;
 - provide standard level of aggregations; consistent with HS/ FAOSTAT
- SDMX registries/ OGC/ UNCEFACT

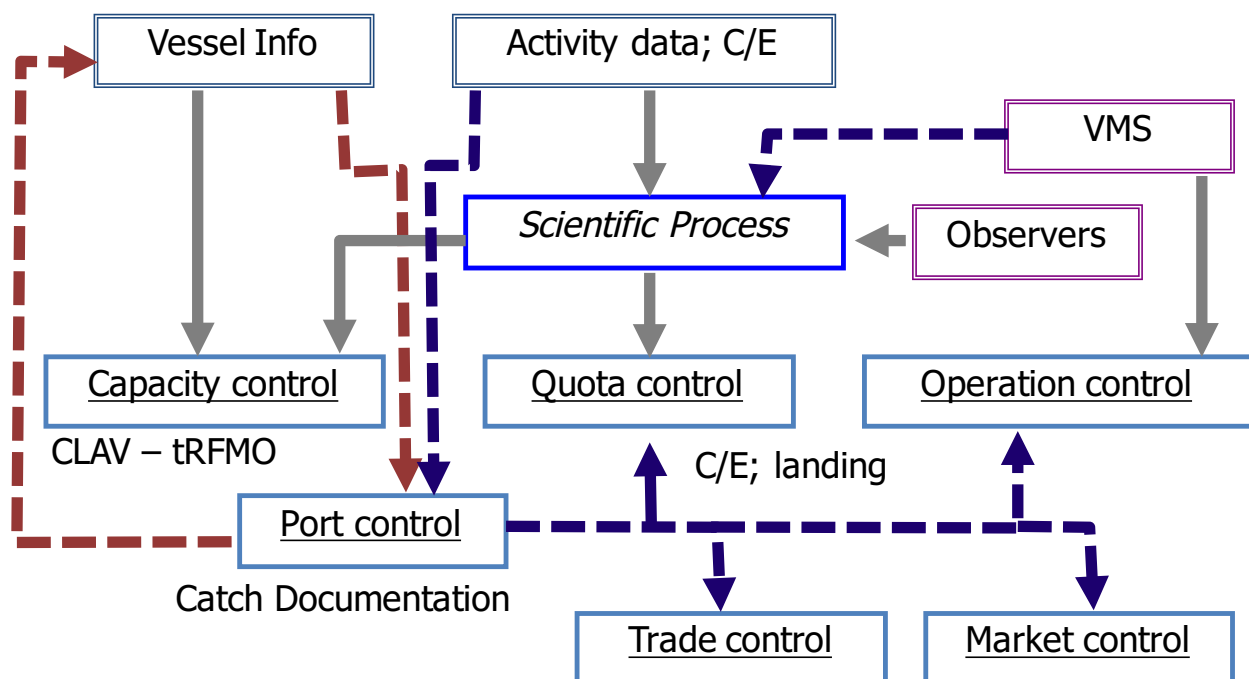
Global IT platform :

- [Google Earth Outreach](#)
- i-Marine data sharing platform
- Fisheries management communication tools (capacity enhancement project)

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Improvement effort – environment sustainability Corresponding actions – methodologies/ concept

Guideline of small scale fisheries survey (Global Strategy) :

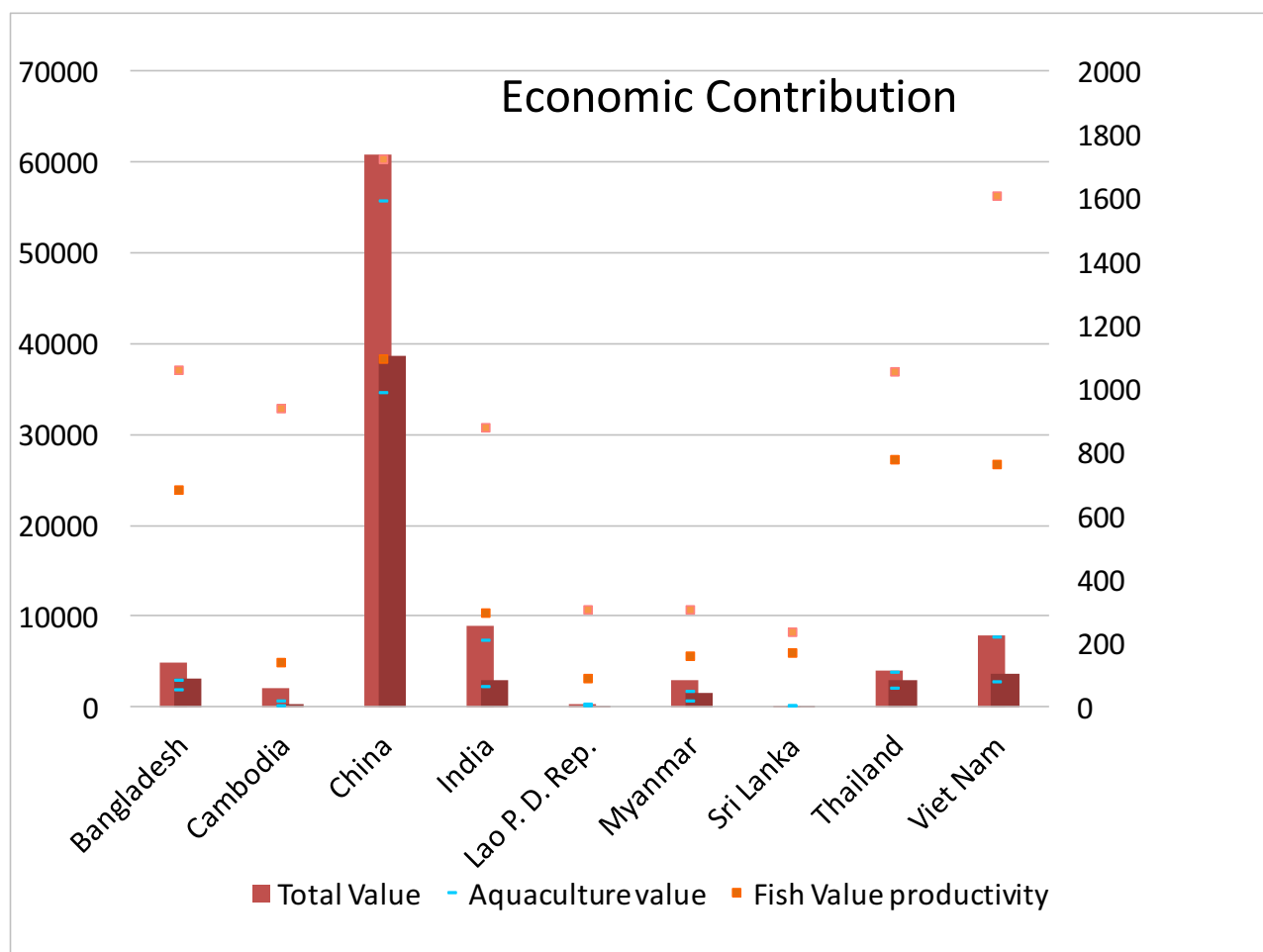
- Evaluation of impacts/ contribution of non-commercial fisheries activities;
- Linkage with natural resource use

SEEA – Fisheries (still under developing):

- Economic and biological performance measure (fish asset tables)
- Overall evaluation of natural fish asset
- Evaluation of water needs for fisheries (water flow/ land use/ ecosystem tables)
- Monitoring aquatic ecosystem health (ecosystem account)

Fisheries inland water use indicators (assemblage of existing information) :

- 14 indicators based on existing information
- Initial compilation for 18 countries (9 Africa, 9 Asia)
- Two publications (in printing): guideline and databook



Improvement effort Fisheries statistics project in the Region

Bangladesh (pipeline):

- Global Strategy – inclusion of fisheries module in the agriculture census
- Well established system but based on 1980s frame information, essential for update
- Blue Growth Initiative implementation fund -- request of technical support on fisheries and aquaculture frame survey

Myanmar:

- Joint evaluation with Global Strategy in 2015 – problem in fisheries production statistics
- Good structural data from 2010 Agriculture Census
- 2016 TCP – Experimental implementation of sample-based landing surveys in the Yangon Region
- Translation and delivery of the the FAO standard training course in fishery statistics in collaboration with the Univ. Yangon (pipeline)

Regional Workshop (7-8 March, Jakarta)

Prospects:

- Introduction of the Guideline of small scale fisheries census/ surveys
- Share the country experience on fisheries census/ survey and use of the results for improving regular surveys
- Brain-storming session:
 - Improvement of regular data collection based on the census/ survey results
 - Integration of fisheries and aquaculture data collection into the national master sampling framework
 - Strategy for addressing SDGs, BGI and other social/economic/environmental monitoring needs
- Participation: one from fisheries agencies and one from National Statistical Office of Asian countries having relevance with fisheries and aquaculture
- Organized by Global Strategy Asia Pacific, FAO FIAS, BPS, MMAF

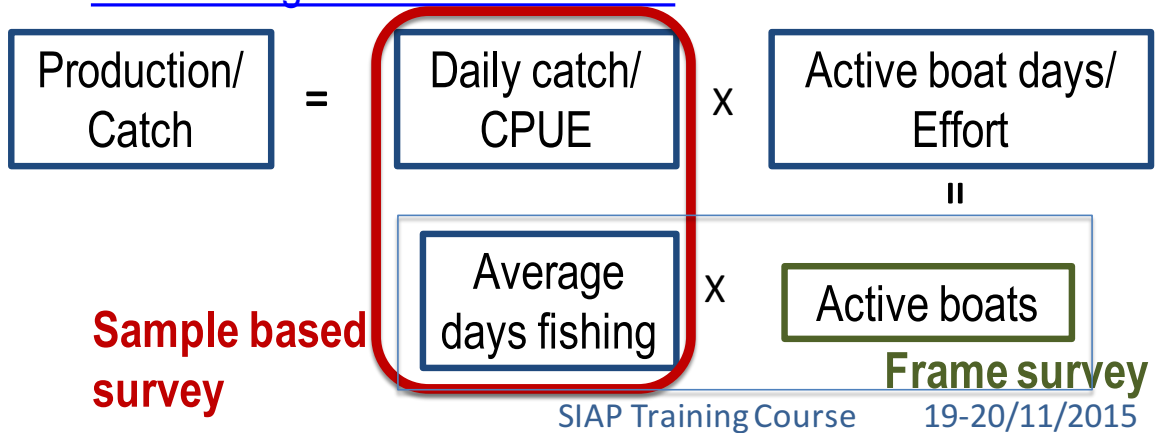
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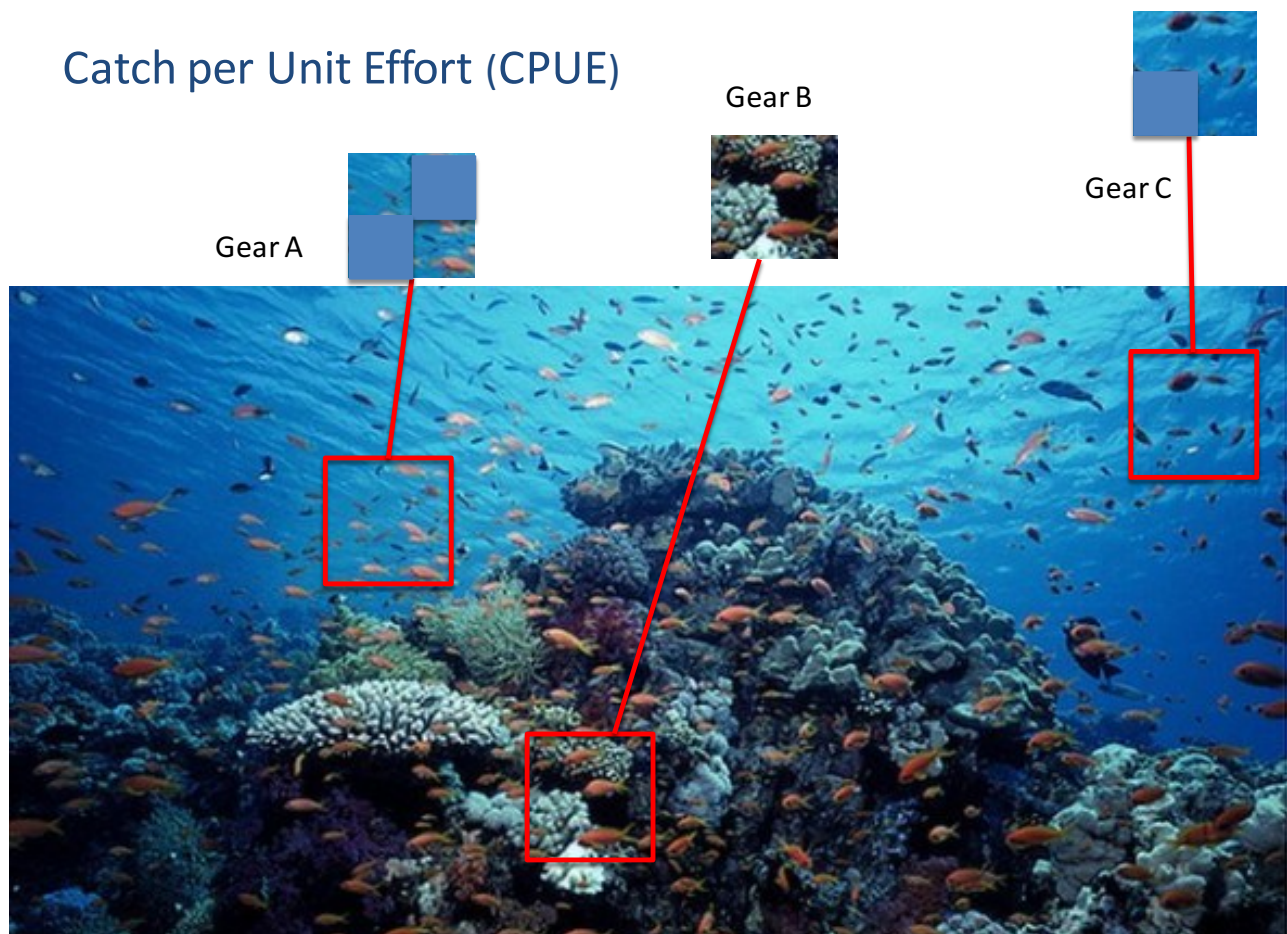


Sample based survey at landing sites

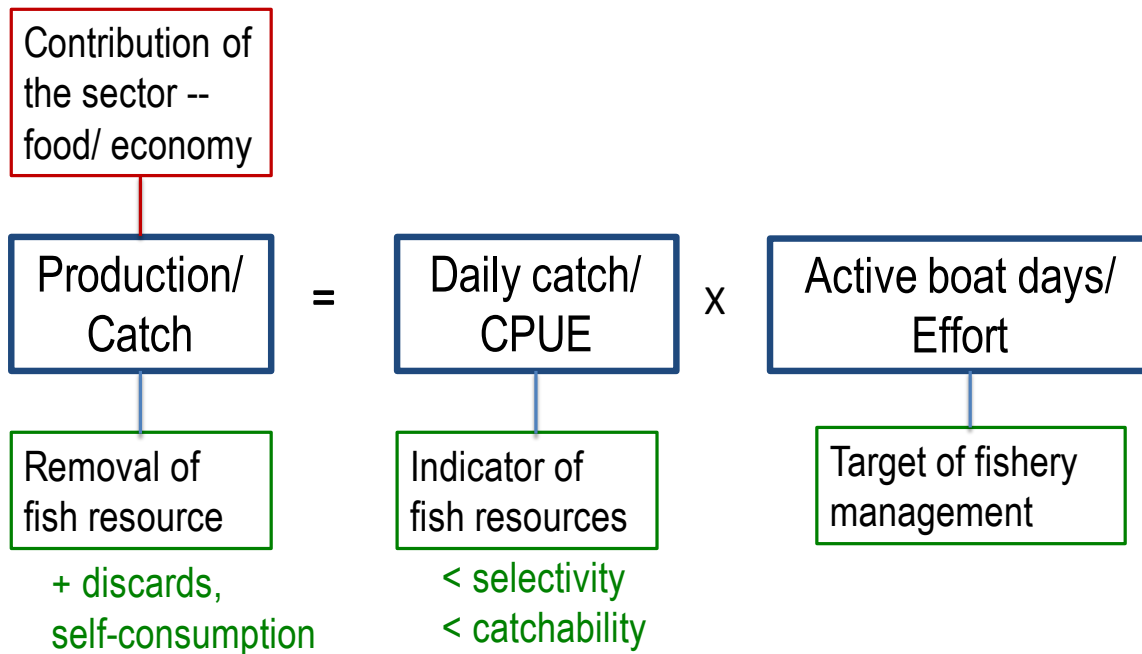
- Well-established standard methods
 - FAO Technical Paper 382
www.fao.org/docrep/003/X2465E/X2465E00.HTM
 - FAO Fisheries and Aquaculture Circular C1091
www.fao.org/3/a-i3639e/index.html



Catch per Unit Effort (CPUE)



Dual purposes of observed statistics



Sample based survey at landing

- Weakness
 - Only good for landed catch
 - Filtered with commercial (landing) component
 - No good for monitoring subsistent use, valueless discards
 - No direct link to social/ household aspects << frame (census) survey
- Comparison with other surveys
 - Logbook
 - Market survey

