

FishStat

FAO FISHERY AND AQUACULTURE STATISTICS

2. Data collection and sampling

2.1. The importance and use of fisheries information

IOTC species identification and sampling workshop 2025

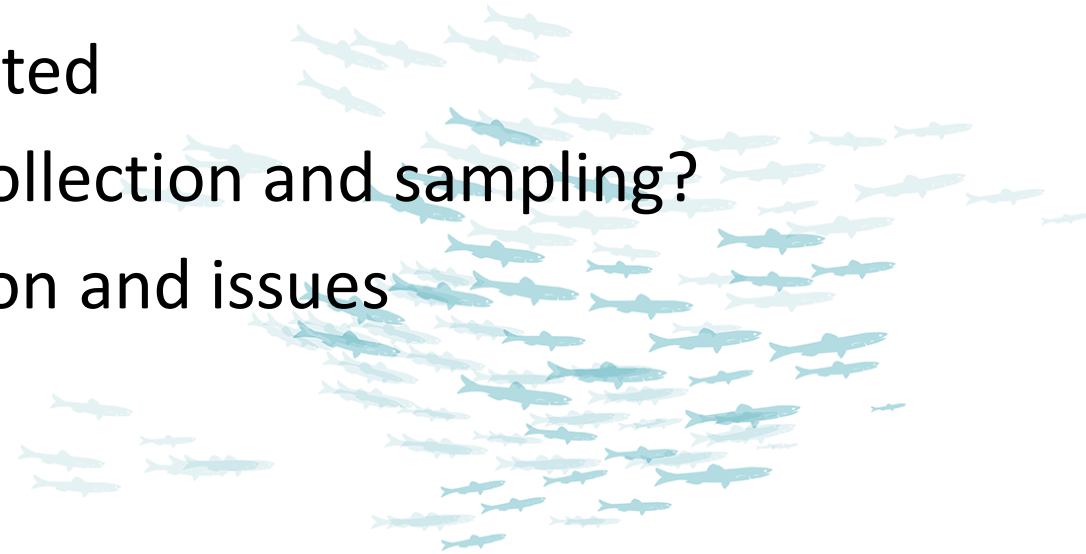
Kochi, India, September 29th to October 3rd, 2025

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OUTLINE OF THE DATA COLLECTION AND SAMPLING MODULE

- Objectives of the module
- Why do we need to collect data?
- What data shall be collected
- How ? Concept of data collection and sampling?
- Data collection supervision and issues



OBJECTIVE OF THE MODULE

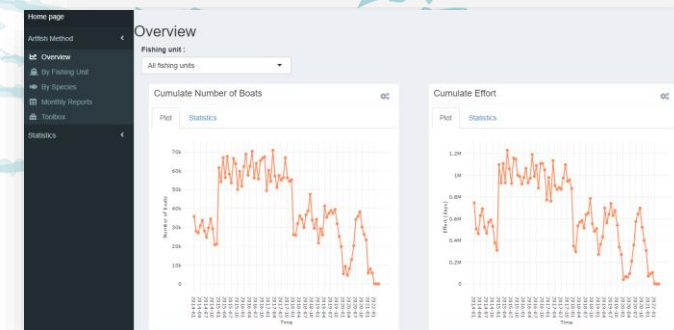
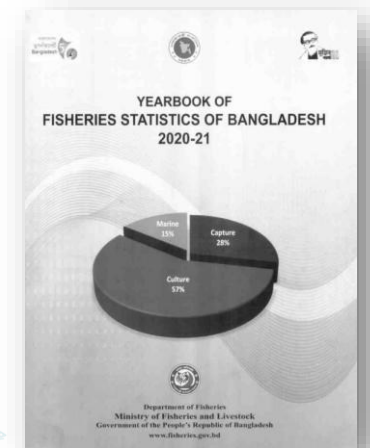
- To understand the need for data collection
- To better design data collection and sampling
- To standardize data
- To review data quality
- To produce statistics at the country level
- To use data in fishery management and policy development and

=> **WHY, WHAT, HOW, WHO** concept of data collection and International settings



INTRODUCTION

- The collection and analysis of fishery data and information is a costly and timely exercise. The way in which different data variables are collected is strongly influenced by:
 - ❖ the budget
 - ❖ personnel available, and
 - ❖ the degree to which fishers and others cooperate.
- Statistical requirements have been increasing dramatically over the last decades, and the objectives of data collection have moved gradually from the production of an annual statistical yearbook (usually on paper) towards a providing data for a Fisheries Management and Statistics Information System (FISMIS).



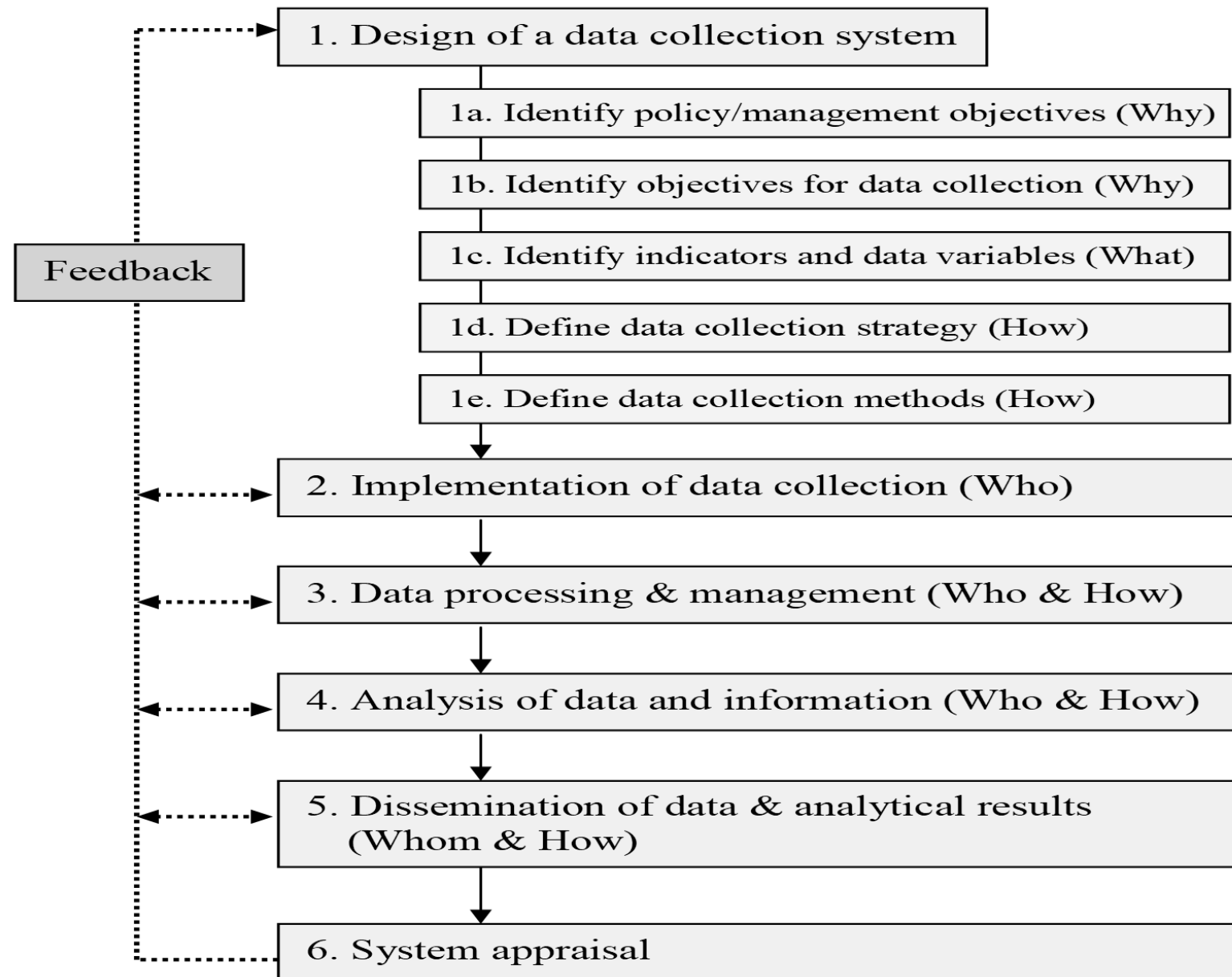
INTRODUCTION CONT.

- Unfortunately, the types of fisheries data are usually adopted from somewhere else and are collected by the fisheries line agency without considering the needs for the data.
- In a budget and staff limited situation it is essential to go back to basics, set the priorities and select the essential variables to be collected.
- Therefore, data collection requires a logically structured approach as described in the guidelines for the routine collection of capture fishery data (FAO, 1999). The structured approach includes a sequential pathway

INTRODUCTION CONT.

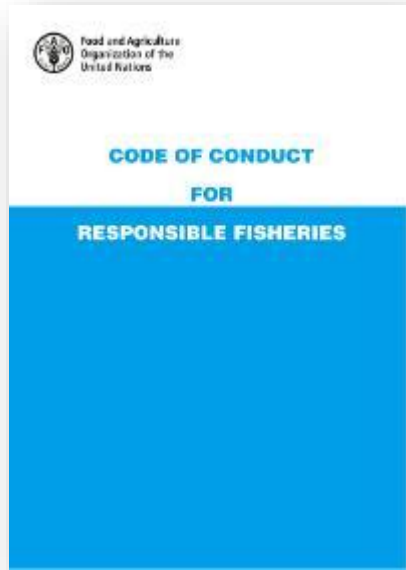
In line with the Generic Statistical Business Process Model

Overarching Processes							
Specify needs	Design	Build	Collect	Process	Analyse	Disseminate	Evaluate
1.1 Identify needs	2.1 Design outputs	3.1 Reuse or build collection instruments	4.1 Create frame and select sample	5.1 Integrate data	6.1 Prepare draft outputs	7.1 Update output systems	8.1 Gather evaluation inputs
1.2 Consult and confirm needs	2.2 Design variable descriptions	3.2 Reuse or build processing and analysis components	4.2 Set up collection	5.2 Classify and code	6.2 Validate outputs	7.2 Produce dissemination products	8.2 Conduct evaluation
1.3 Establish output objectives	2.3 Design collection	3.3 Reuse or build dissemination components	4.3 Run collection	5.3 Review and validate	6.3 Interpret and explain outputs	7.3 Manage release of dissemination products	8.3 Agree an action plan
1.4 Identify concepts	2.4 Design frame and sample	3.4 Configure workflows	4.4 Finalise collection	5.4 Edit and impute	6.4 Apply disclosure control	7.4 Promote dissemination products	
1.5 Check data availability	2.5 Design processing and analysis	3.5 Test production systems		5.5 Derive new variables and units	6.5 Finalise outputs	7.5 Manage user support	
1.6 Prepare and submit business case	2.6 Design production systems and workflow	3.6 Test statistical business process		5.6 Calculate weights			
		3.7 Finalise production systems		5.7 Calculate aggregates			
				5.8 Finalise data files			



Starting from the understanding on “Why data are needed?” through the “What data need to be collected?”, and the consideration of “How data will be collected?” and ‘Who should collect the data?’ and ‘to whom?’ **Data Collection**

WHY DO WE COLLECT DATA



- The first question to address is “**Why do we collect data?**” The Code of Conduct for Responsible Fisheries (CCRF) provides the overall framework:
- “In order to ensure sustainable management of fisheries and to enable social and economic objectives to be achieved, sufficient knowledge of social, economic and institutional factors be developed through data gathering, analysis and research.” (CCRF 7.4.5)



SDG – Goal 14



Goal 14:
Conserve and sustainably use the oceans, seas
and marine resources for sustainable
development

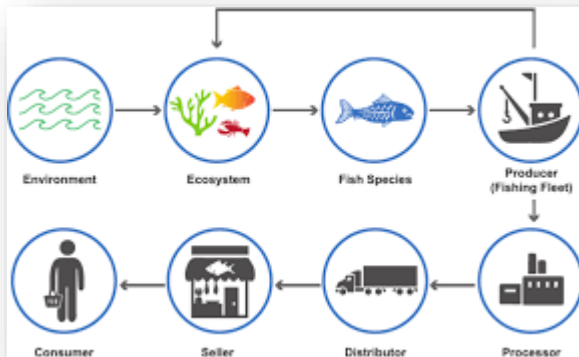


- Goes beyond conservation to focus on the **people** and **coastal communities**,
- Provides a special focus to **small scale fisheries** and the fisheries and populations reliant on this subsector;
- Makes **achieving food security** and ending malnutrition a global priority.
- The importance of fisheries in local and global food systems and its contribution to nutrition and health, particularly for the poor are overlooked and undervalued.
- **End overfishing** and **combat IUU**

FAO custodian of four SDG indicators under Goal 14

WHY DO WE COLLECT DATA (CONT.)

- If we have sufficient knowledge, then we are able to formulate useful policies for the whole fisheries sector and effective management plans for particular fisheries.
 - Fishery policies and management plans should address the fishery sector as a contributor to the food supply and economy at local and national levels, and as a critical component of the ecosystem. Hence, data collection should cover all aspects of a fishery, from the natural resources, via exploitation to the local consumers, industry and trade.



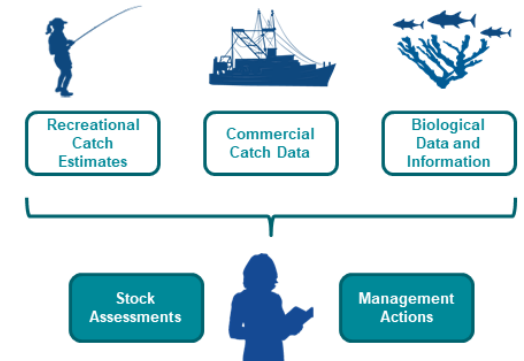
THREE LEVELS OF DATA/INFORMATION REQUIRED



It can be recognized that data and information are required at three levels:

- Policy formulation level (conservation, economic development ...)
- Formulation of management plan
- Determination of management actions to implement policy and plans

NB: These will overlap and each influenced by what happens at other two levels

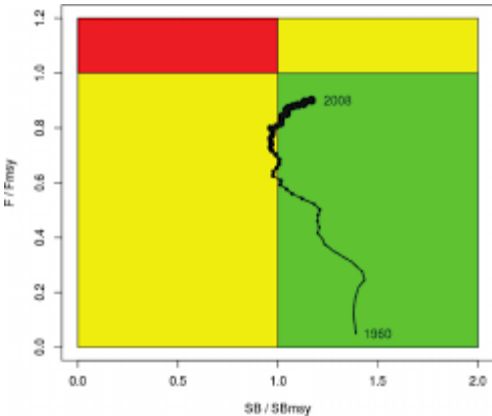


Critical role of statistics

- Knowledge of the status and trends of the sector, not limited to production, but **encompassing the entire value chain**, is key to both **sound policy-making** and to **assess and track** the performance of responsible fisheries management.
- Fisheries and aquaculture statistics are also essential as a basis for describing **the contribution of the sector** to national food supply, to the economy (e.g. through the system of national economic accounts), to employment and poverty alleviation.
- The limited availability of information often constrains policy-making and planning.
- They need to be **accurate, timely** and **detailed** as possible
- Need to use **comparable/ international standards**

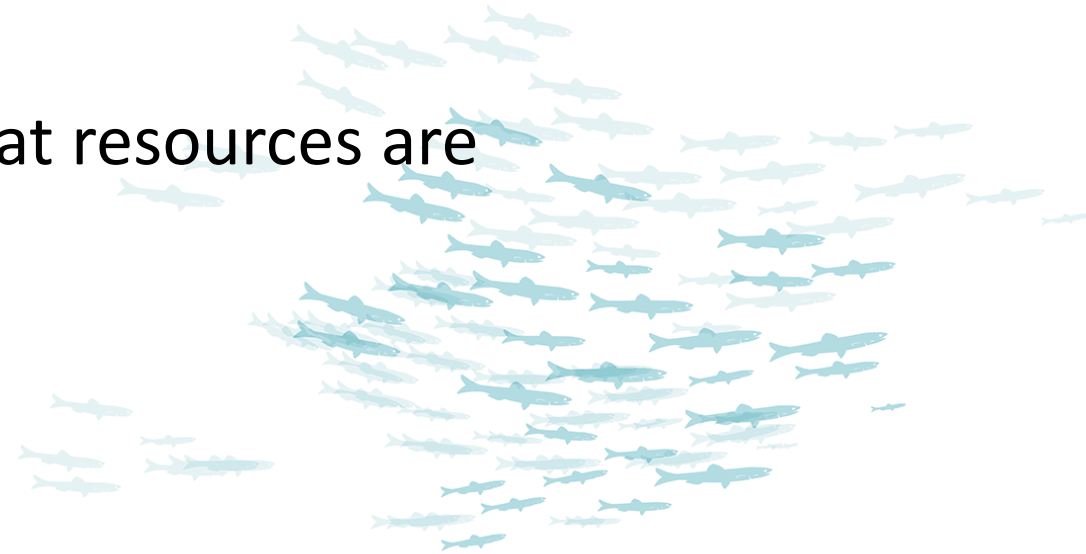
Why do we collect data?

- Development of Fisheries management plans
- Formulation of relevant policies
- Predict and assess management outcomes
- Assess status of the resource
- Estimation of yield
- Provide basis for fishing controls
- Assessment of economic efficiency
- Assessment of social performance
- Meet regional collaborative data needs



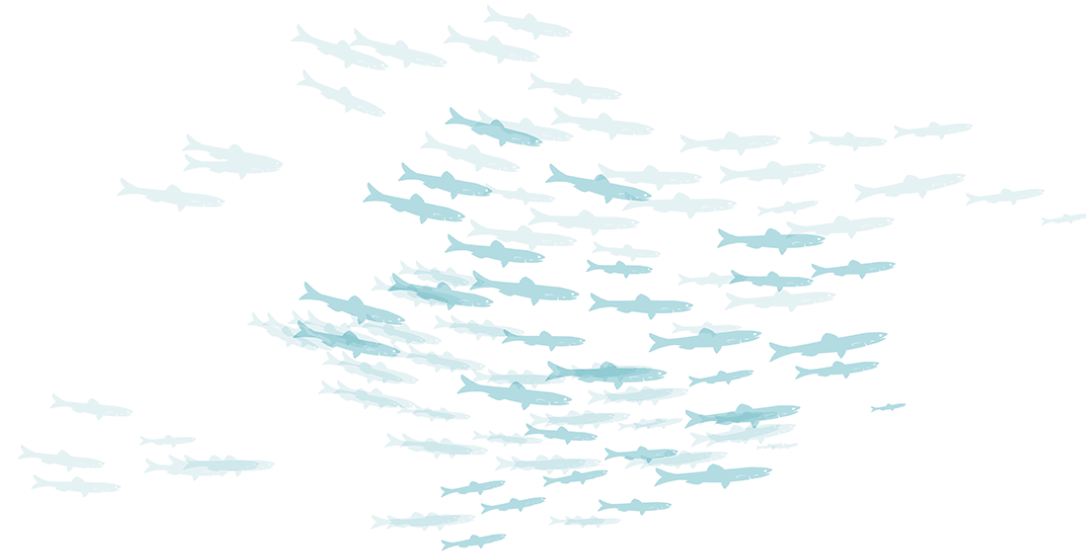
CONCLUSION

- The collection of data and information is not an end in itself but essential for informed decision-making for management and policy making
- Therefore data should be collected and analyzed correctly and disseminated
- Information also ensures that resources are managed responsibly



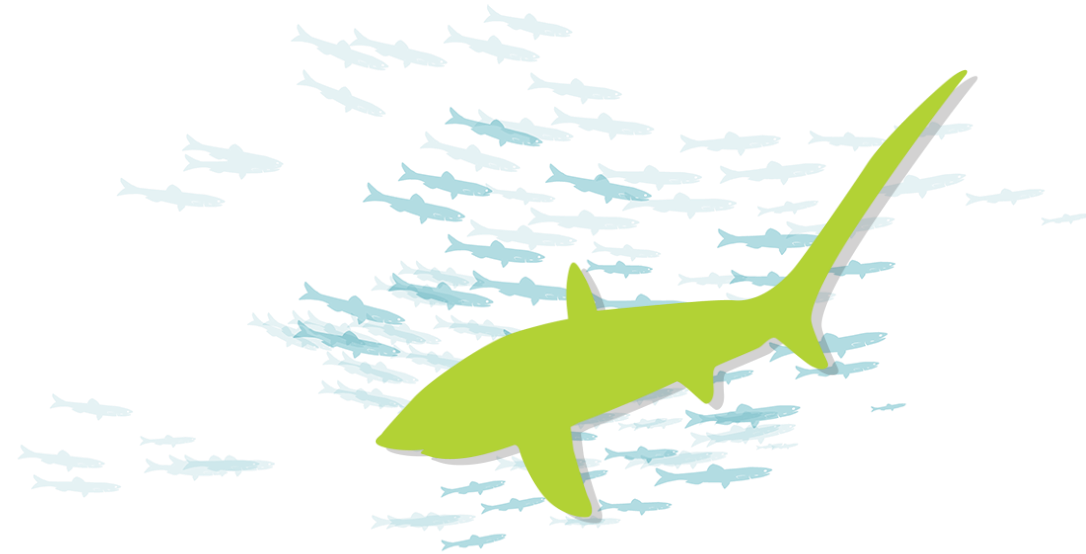
PRACTICE

1. List three reasons why you are collecting data in your country.
2. What are your needs?



REFERENCES

- FAO. Code of Conduct for Responsible Fisheries Rome, FAO. 1995. 41 p.
(<https://www.fao.org/3/v9878e/v9878e.pdf>)
- Generic Statistical Business Process Mode:
<https://statswiki.unece.org/display/GSBPM>





Food and Agriculture
Organization of the
United Nations

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

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