

Will ecosystem approach to fisheries improve our understanding of, and ability to manage, human impacts on variable fish populations?

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PRESENTATION OUTLINE



Introduction



Ecological, social, economic and political realities of resource use



FAO and the ecosystem approach



Managing human impacts



Lessons from EAF management planning in selected African fisheries

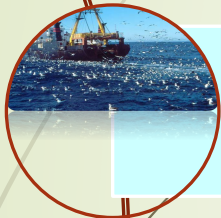


Conclusion

INTRODUCTION



“Management of fish populations” is achieved through management of human impacts on the populations.



The multiple use of the oceans result in stresses from multiple sources hence the need for integrated approaches with specific (sectoral) objectives.



The need to integrate ecological and human aspects of fisheries to improve fisheries management - long recognized – and in line with the principles of sustainable development

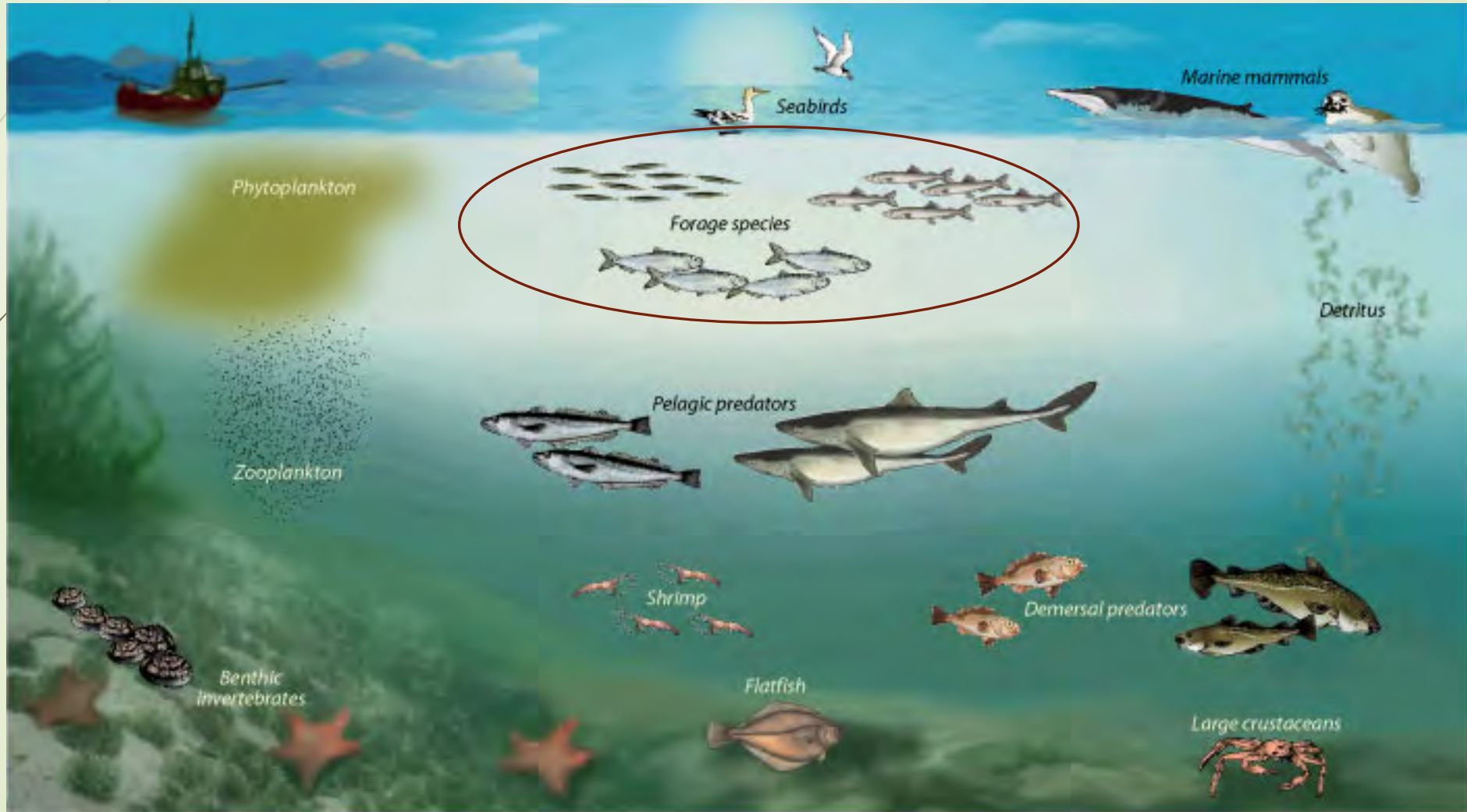


The challenge faced by many developing countries in this is the know-how and good data

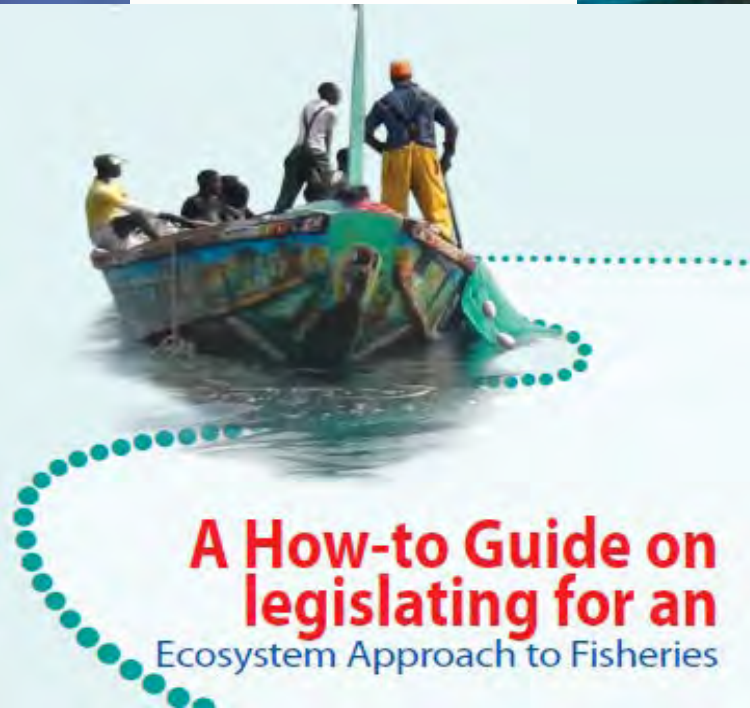
Session 5: Future challenges for ecosystem-based management of highly variable fish populations

- ▶ The Session is intended to feature papers on all aspects of management specific to SPF species:
 - ▶ the inclusion of ecosystem elements in assessment and management;
 - ▶ minimizing impacts on social and economic systems;
 - ▶ The role of SPF species as "forage fish" and their role in the food web;
 - ▶ management in the context of wide distributions and extensive migrations;
 - ▶ etc.

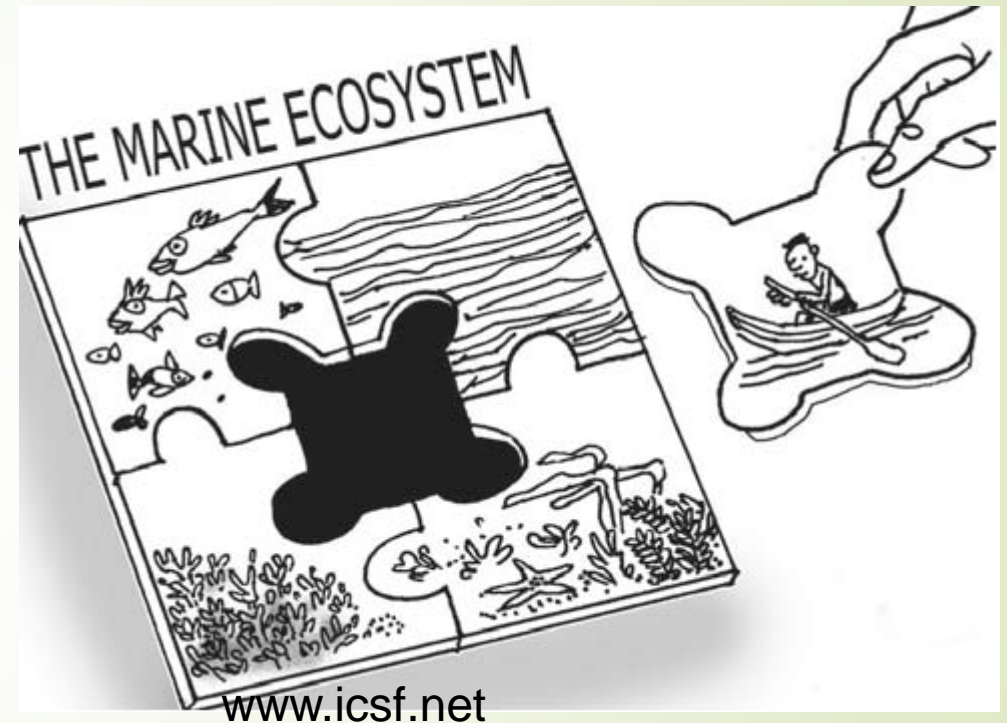
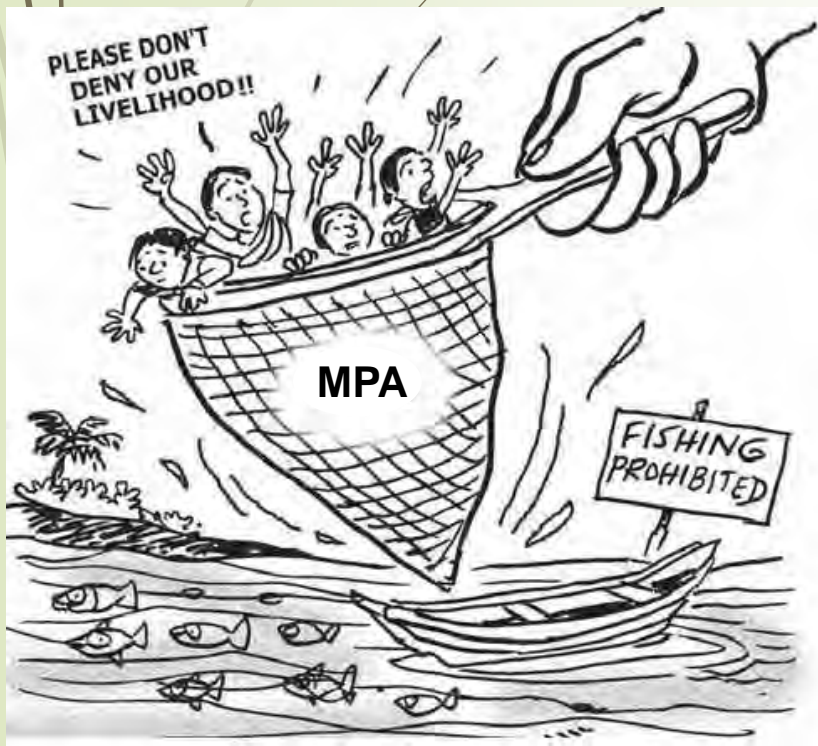
Ecosystem approach - the ecological reality



=> the social, economic and political reality of resource use



Need to recognize that humans are part of the ecosystem
..... and are also affected by management practices



IS THIS A DEPARTURE FROM WHAT YOU HAVE PREPARED FOR THIS SESSION?

The ecosystem approach to fisheries benefits fish, fishers and fishing communities!



The key principles of EAF

- Ecological relationships between species should be maintained.
- Governance should ensure both human and ecosystem well-being and equity.
- Fisheries should be managed to limit their impact on the ecosystem to an acceptable level.
- Management measures should be compatible across the entire distribution of the resource.
- Precaution in decision-making and action is needed because the knowledge on ecosystems is incomplete.



THE
EAF-NANSEN
PROJECT

www.eaf-nansen.org

Assisting developing countries to implement the ecosystem approach to fisheries

RATIONALE FOR ECOSYSTEM APPROACH

- “The main purpose of EAF (Ecosystem Approach to Fisheries) is to plan, develop and manage fisheries in a manner that addresses the multiple needs and desires of societies, without jeopardizing the options for future generations to benefit from the full range of goods and services provided by marine ecosystems”

Basic Principles of an Ecosystem Approach to Fisheries

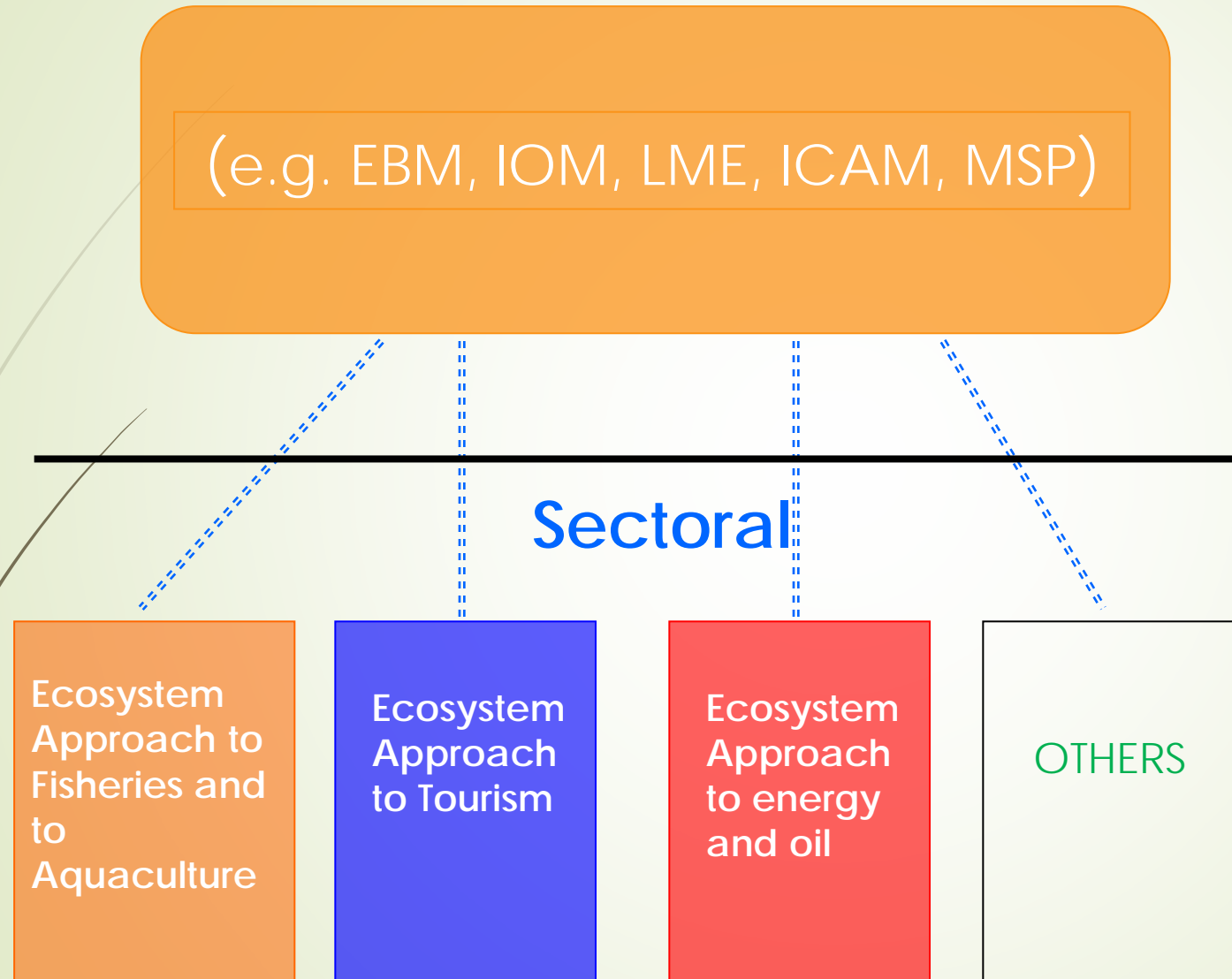
- Maintain ecosystem integrity
- Improve human well-being and equity
- Apply the precautionary approach
- Develop an adaptive management systems
- Ensure compatibility of management measures (across jurisdictions)
- Broaden stakeholder participation and promote sectoral integration
- Improve research to better understand ecosystems in all components
- Conservation and management decisions based on the best available knowledge



... consistent with the CBD Principles for EA in particular Principles 1, 11 and 12 [management as societal choice, value of types of information and involvement of relevant sectors of society in the management process]

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- EAF is seen as a practical implementation of the FAO Code of Conduct for Responsible Fisheries which brings the concept and principles of sustainable development home to fisheries;
 - But, the concept goes back to LOSC, 1982; promoted at the 2002 FAO Technical Consultation and adopted by Member States at Committee on Fisheries (COFI)a year later;
 - Members adopted EAF as preferred alternative to EBFM or EBM.

Multi-(cross-) sectoral



- Develop integrated plans (across sectors) for a given region/ecosystem
- Set common conservation and development objectives

- Each sector is managed in a way that is consistent with overall principles and broad objectives set for the given region

KNOWLEDGE-BASE FOR FISHERIES MANAGEMENT

- Need to have the right knowledge about the system to be managed.
- Many gaps exist in our knowledge of ecosystems resulting in uncertainties about the impact of fishing activities.
- Exacerbated by climate variability and change, particularly with respect to variable resources (e.g. SPF species).
- But uncertainty should not lead to inaction (need to improve human well-being and the status of the ecosystem itself)
- Hence EAF – its principles and expected outcomes

MANAGING HUMAN IMPACTS

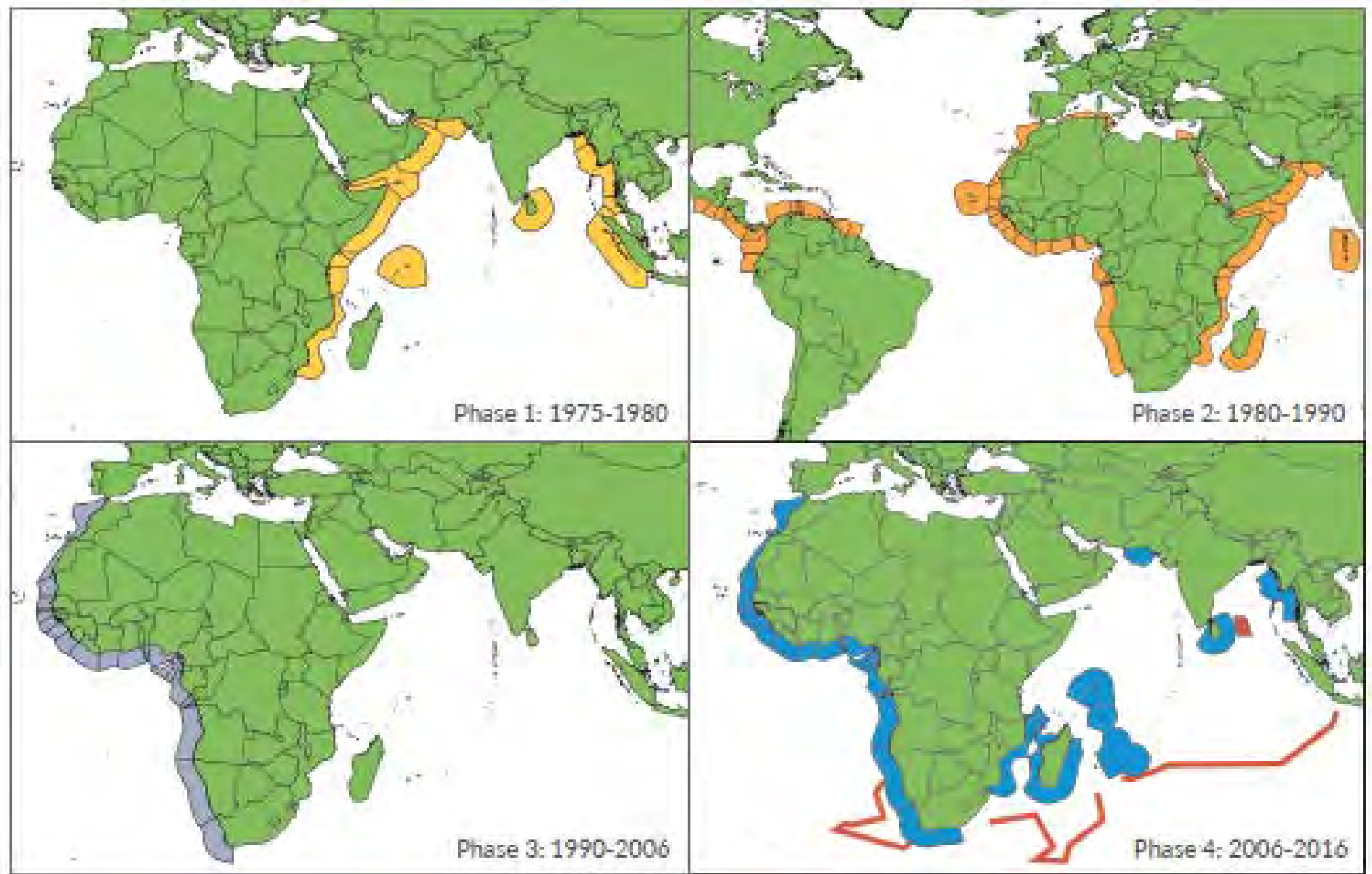
- Under EAF a fishery is considered as “a socio-ecological system whose sustainability depends on all its parts”.
- EAF planning and implementation should take into account the three dimensions of sustainability (ecological, social and economic).
- For fisheries an ecosystem approach requires coordination, consultation, cooperation and joint decision-making to achieve sustainable use
- “Sustainable” means “fishers and fishing communities can generate sufficient financial resources from their operations to cover basic needs with minimum adverse impact on the ecological system itself”.

EAF MANAGEMENT PLANNING – EXAMPLES FROM AFRICA

- Since 2007, the EAF-Nansen Project of FAO has assisted countries in Africa to develop national and regional frameworks for the implementation of EAF.
- **The Project activities include:**
 - ecosystem assessments and monitoring (to acquire additional knowledge on the marine ecosystems),
 - fisheries policy formulation and implementation,
 - fisheries management in line with EAF.
 - Etc.



RV Dr Fridtjof Nansen surveys.





The key features of the EAF framework proposed by FAO include:

- ▶ a management plan is developed as interface between policy and actions of the fishers;
 - ▶ builds on existing management institutions and practices.
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- **National and regional baby projects involving 22 countries in Africa**
 - Nigeria, Cameroon, Gabon, DRC and R. Congo - management of industrial shrimp fisheries
 - Benin, Côte d'Ivoire, Ghana and Togo – reducing the impact of beach seine fisheries,
 - Small and medium pelagic fisheries management in Tanzania, Kenya
 - Also various fisheries in Comoros, Liberia, Mauritius, Mozambique, Madagascar, Seychelles, Sierra Leone.
 - Small pelagic fisheries in Morocco, Mauritania, Senegal and the Gambia



HIGH LEVEL POLICY GOALS

1. Initiation and Planning
Scoping and Baseline Information
Broad Objectives

2. Identify and prioritize Issues
Risk Assessment

3. Develop Management System
Set Operational Objectives
Select Indicators
Evaluation/Selection of Mgmt Options

4. Implement and Monitor
Formalize Management Plan
Execute Operational Plan
Review Performance
Report and Communicate

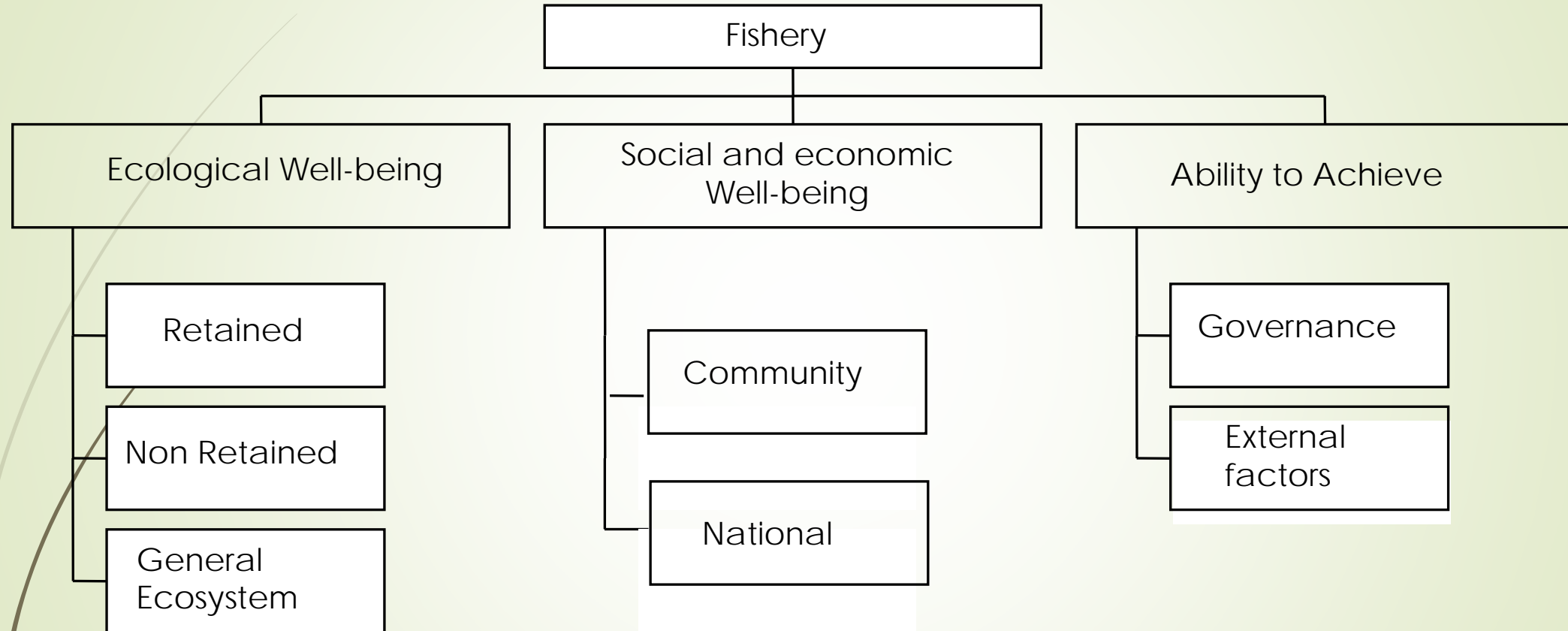
Consultation with stakeholders

Best available knowledge

5-10 years

1 year

The generic component tree for issue identification



Many of the papers in Session 5 look at the ecological dimension of EAF

	Industrial Fisheries	Artisanal Fisheries
Ecological Wellbeing	<ol style="list-style-type: none">1. Possible depletion of fish stocks due to excessive fishing pressure activities of artisanal fishers (illegal nets)2. Bycatch3. Marine litter and ghost fishing4. Inadequate knowledge about the resources (e.g. biology of the target fish species)5. Poor information about catches and fishing effort	<ol style="list-style-type: none">1. Industrial vessels fishing in zones reserved for artisanal fishers (hence destruction of nursery grounds)2. IUU fishing and piracy3. High exploitation of juvenile fishes4. Drop in catches due to bad fishing practices (e.g. use of light, dynamite and monofilament nets)5. Decline in number of species types in catches6. Effect of dams on estuaries and their role in recruitment7. Plastics at sea and litter on beaches8. Discards by industrial vessel9. No knowledge about protected areas and species

	Industrial Fisheries	Artisanal Fisheries
Human Wellbeing (Social and Economic)	<ol style="list-style-type: none">1. Employment2. Safety at sea (poor conditions on board the vessels)3. Lower catches and declining profits leading to loss of jobs4. Conflicts with artisanal fleets and other sectors5. Lack of detailed economic analysis of the fishing industry6. Unfavourable environment for investment in new technologies7. High prices of fishing inputs due to exchange rates	<ol style="list-style-type: none">1. Lack of alternative livelihood2. Conflict among fishing units during fishing3. Low level of education in fisheries communities4. Child labour in fisheries5. Separation from family, polygamy and high incidence of HIV in fishing communities6. Conflicts with other sectors (e.g. oil and gas)7. Gender roles in the fishing industry8. Lack of credit facility to buy better (approved) fishing gear

	Industrial Fisheries	Artisanal Fisheries
Ability to Achieve (Governance and External factors)	<ol style="list-style-type: none"> 1. Ineffective legal instruments and poor enforcement of laws and regulation 2. Lack of fisheries management plans and clear management objectives 3. Lack of effective MCS (e.g. no catch controls) 4. Conflict with conservation objectives 5. Lack of/or weak inter-agency and stakeholder consultations and communication 6. Climate effect on catches 	<ol style="list-style-type: none"> 1. Inadequate coverage of certain gears in the fisheries law (e.g. beach seines) 2. Open-access (fishers consider fishing as a birth right) 3. Fisheries sector not accorded required priority in national development agenda 4. Weak institutional framework for decision making 5. Poor coordination and consultation with stakeholders 6. Need to acknowledge traditional management of fisheries 7. Climate change resulting in coastal erosion hence affecting operations 8. Economic shocks (e.g. exchange rates and prices of fishing input)

- From here management measures are proposed to address the risks and a plan developed (with indicators, targets, responsibilities).
- Data and information needs to implement the plan are discussed.



Samuel Gicheru Njora, Chair of the Kenya national task group and representative of Aquarium Fisheries Wholesalers, Mombasa, Kenya

"Coming from industry, I have seen the benefits of joining with government and scientists to understand more completely the resource and management issues of fisheries. On our own, we would never have had the knowledge and resources to undertake this kind of work. The project has given us a new outlook and new opportunities. For example, as a result of working with the project we have identified a new fishery for Kenya (for small and medium pelagic species)."

WHAT HAVE WE LEARNT FROM THESE PROJECTS?

- ▶ EAF is not rocket science but adoption and implementation hindered by several factors, including lack of common understanding of what it is (or is not) and how much information is required in application.
- ▶ Many fisheries institutions lack the means to provide the right data and information for EAF implementation;
- ▶ Research and data collection efforts are often not targeted; good social and economic information are generally lacking.
- ▶ Often there are no clear objectives for the fishery; and lack of policy coherence (economic, social and ecological sustainability).
- ▶ For any type of fishery, many issues are common (country to country and region to region) so are the proposed management measures. A situation that augurs well for the management of fisheries for shared stocks (e.g. SPF).
- ▶ Many issues of relevance to artisanal fisheries also apply to the industrial sector, especially when common species are exploited.

Mr Yao Kingston, Chief of a fishing community in Côte d'Ivoire and owner of a beach seine unit

"Before the EAF-Nansen project, beach seine communities were not involved in any discussion about fisheries. Now we have been included in the consultation process for the national management plan, and our livelihoods have been recognised as important. One of the key things we have learned through the project is the impact of catching juvenile fish on fish stocks. Now that we have switched to using larger mesh size in our nets, we are looking forward to improving the composition of mature fish in our catch and thus increasing our revenue."



- Stakeholders want to see their suggested management measures implemented;
- Broad stakeholder participation (e.g. through the EAF National and Regional Task Groups) provides an effective forum to develop a common understanding of EAF, the issues related to the fisheries, the necessary interventions, and need for knowledge and good data.

In the Nansen Programme, in particular....

First survey with the new research vessel will look at issues related to pelagic fish and fisheries in Eastern Central Atlantic (Atlantic coast of Africa)

- Shared stocks; zonal attachment of main resources
- Critical habitats (spawning and recruitment)
- Interactions
- Etc.



CONCLUDING REMARKS

- ▶ A vision for EAF - reconciled management objectives for all stakeholders (including scientists and managers) is achievable
- ▶ High-level policy objectives can be made comprehensible through an effective participatory process.
- ▶ Each management approach has a place and is usually complementary with the others (e.g. use EAF in fisheries component of LME - this has been demonstrated through a partnership between the EAF-Nansen Project and all LME projects in Africa); also EAF and MSP (Ghana case)





- The participatory process can strengthen the objective and need for the other approaches.
- Once the EAF process is in place the limited human and financial resources available are focussed on what actually matters and scientists and managers are compelled to re-think and sharpen the objectives for the fisheries.
- The participatory process pays off - an issue like zonal attachment of shared pelagic resources could be common knowledge necessary to stimulate ecological research.



VISIT

- Website: www.fao.org/in-action/eaf-nansen/
- Flickr: <https://www.flickr.com/photos/67578091@N08/>
- YouTube: <https://www.youtube.com/user/eafnansen>