



# **RECOFI Technical Workshop on Spatial Planning for Marine Capture Fisheries and Aquaculture Doha, Qatar 24–28 October 2010**



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# The role of spatial tools for an Ecosystem Approach to Fisheries

RECOFI Workshop on Spatial Planning for Marine  
Capture Fisheries and Aquaculture  
Doha, Qatar  
24–28 October 2010



# Purpose

- Understanding EAF
- Understanding how spatial tools (GIS, remote sensing, mapping) can support EAF

to:

- Use EAF principles to develop our regional strategy





# Presentation outline

- **EAF concepts and principles**
- **GIS showcase and its role in EAF**
- **Challenges and opportunities**



# EAf concepts and principles – Why EAf?

- **Increasing societal awareness of the impacts of fisheries on marine ecosystems**
- **Advances in science (environmental effects on fishery resources and effects of fishing on non-target species and habitats, food-chain effects and biodiversity)**
- **Poor performance of current management practices**
- **Recognition of a wide range of societal interests in marine ecosystems**



# Concept development

1972

1982

1992

1995

2001

2006



**UNCLOS**

UN Convention on  
the Law of the Sea

UN Fish Stock  
Agreement

UNICPOLOS

**UNCED**

UN Conference on  
the Human  
Environment

Jakarta Mandate

UN Conference on  
Environment and  
Development

Malawi  
Principles

WSSD

- Rio Declaration
- CBD
- Agenda 21 (Chapter 17)

**FAO**

Cancun Declaration

Code of Conduct for  
Responsible Fisheries

Reykjavik  
Declaration

*Ecosystem Approach to  
Fisheries*



# EAF Definition



“An Ecosystem Approach to Fisheries strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries.”

FAO guidelines  
(FAO, 2003)



# Principles background

- None of the principles that underlie the EAF are new. They can all be traced in earlier instruments, agreements, declarations.
- Implementation of these principles lags behind in relation to their formulation in agreed international instruments
- The EAF highlights and reorganizes the principles of sustainable development making their application more imperative





# Principles (Normative)



- Maintaining ecosystem integrity
- Improving human well-being and equity
- intra-generational equity



# Principles (Operational/implementation)

- Apply the precautionary approach
- Developing adaptive systems
- Ensure compatibility of management measures (across jurisdictions)
- Broaden stakeholder participation
- Use incentives
- Promote sectoral integration



# Principles (Cognitive)



- Improve research to better understand ecosystems in all its components
- Conservation and management decisions should be based on the best available knowledge
- Encourage research towards selective and environmentally safe fishing gear and practices

# The extension concept

## Conventional approach

***Extension***

## Ecosystem approach

Few objectives

Sectoral

Target / non target species

Stock / fishery scale

Predictive

Scientific knowledge

Prescriptions

Top-down

Corporate

Multiple objectives

Integrated, cross sectoral

Biodiversity & environment

Multiple (nested) scales

Adaptive

Extended knowledge

Incentives

Interactive /Participatory

Public / Transparent



# Key steps in an EAF





# The spatial dimension of EAF

- Spatial considerations have become more manifest
- GIS is becoming increasingly embedded in fishery and wider ecosystem management processes
- Ability to generate visual representations of complex ecosystem processes and
- Facilitate communication with and among stakeholders.
- Spatial tools can interact with the EAF processes by providing a platform for
  - mapping,
  - modelling,
  - management and
  - communication.



# next...

- how spatial tools have been used in marine fisheries and in support of an EAF...

