

SCBD NBSAP and climate change workshop

3-7 Nov 2008, Port of Spain, Trinidad

Mainstreaming biodiversity concerns into the fisheries sector in the region

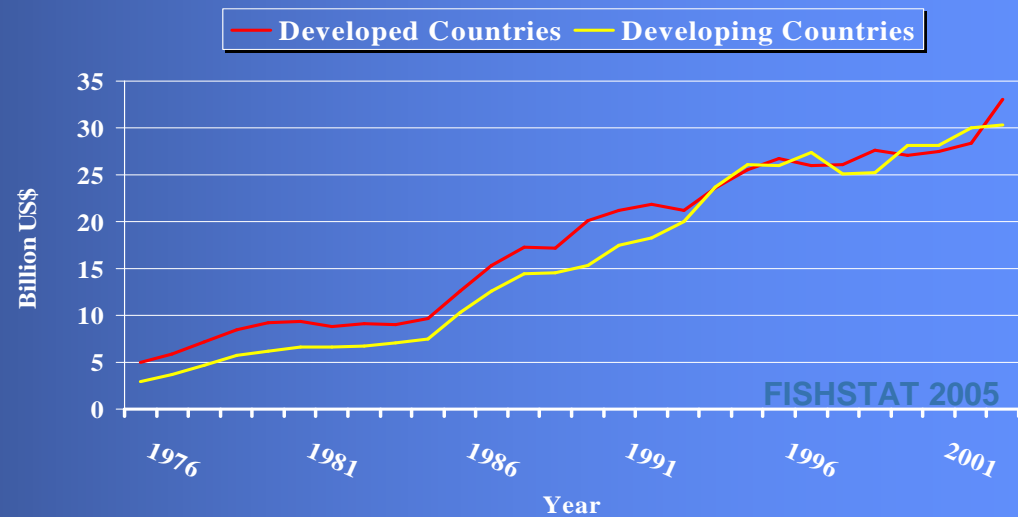
**Bissar Chakalall, Senior Fishery Officer
FAO Subregional Office for the Caribbean
Barbados.**



<http://www.fao.org>

Fisheries as a Contributing Sector

- Food, employment, income
- Trade
- Export value



- Requires sustainable resources

Overfishing

SCIENCE • VOL. 279 • 6 FEBRUARY 1998 • www.sciencemag.org

Fishing Down Marine Food Webs

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Science, Vol 282, Issue 5393, 1383, 20 November 1998
[DOI: 10.1126/science.282.5393.1383a]

◀ Previous Article • Table of Contents • Next

How Pervasive Is "Fishing Down I

In their report (1), and in an earlier paper (2), D. Pauly *et al.* fish stocks with the use of research data fitted to Ecopath with data on global fishery landings collected by the Food Although Pauly *et al.* are to be congratulated for giving this situation with their hypothesis mean trophic level of marine l explanation is solely a result o *al.*, substantiates such a thesis

letters to nature

Rapid worldwide depletion of predatory fish communities

By Sharon A. Guyan and P. Rock Wilson

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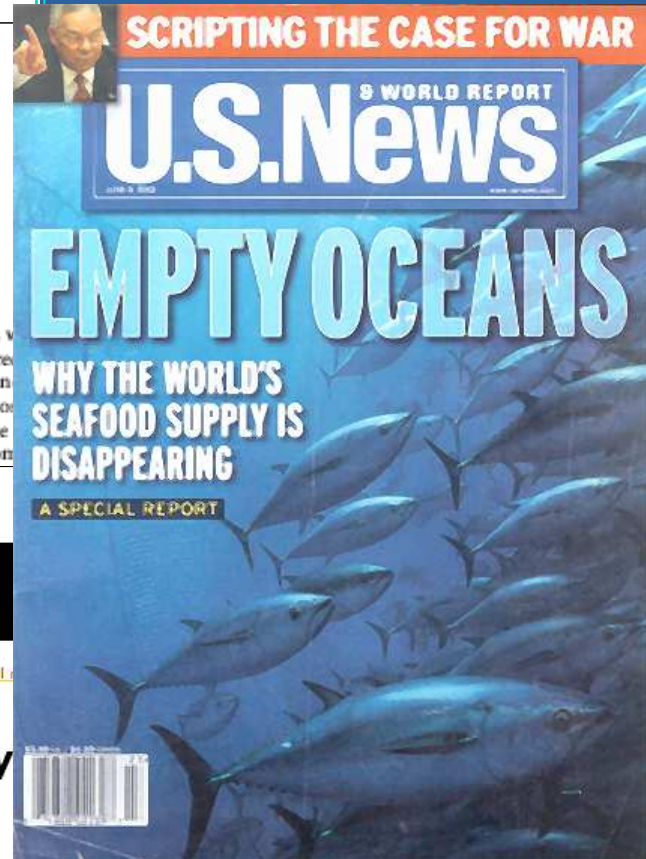
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"Dirty Fishing" Empty Oceans, Experts Say

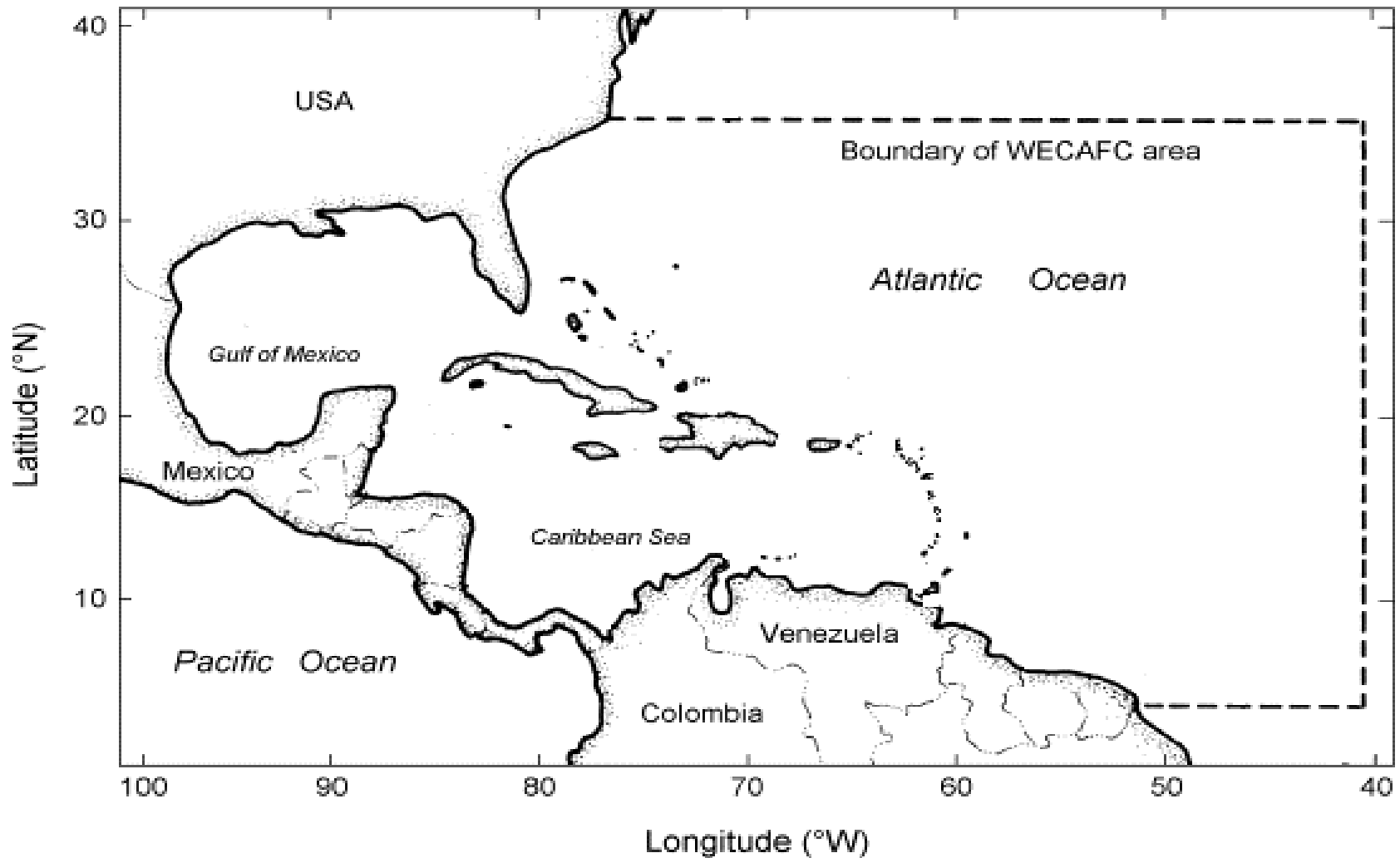
Sharon Guyan
National Geographic Channel
August 11, 2003



May 2005

WESTERN CENTRAL ATLANTIC FISHERY COMMISSION (WECAFC)

<http://www.fao.org/fishery/rfb/wecafo>



WESTERN CENTRAL ATLANTIC FISHERY COMMISSION (WECAFC)

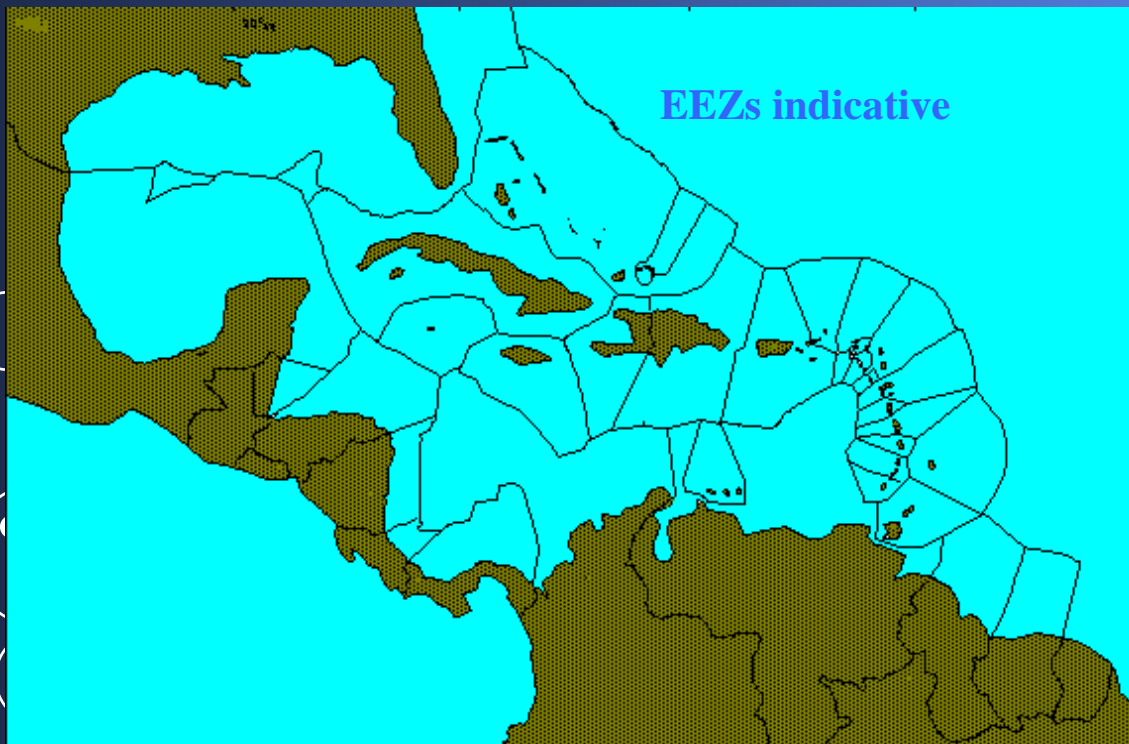
- **Established by Resolution 4/61 of the FAO Council in 1973**
- **Area of competence is the Wider Caribbean, which coincides with FAO Fisheries Statistical Area No. 31; CLME; and UNEP-CEP**
- **Has the competence to deal with all living marine resources**
- **An FAO Regional Fishery Body**

WECAFC FISHERY SECTOR

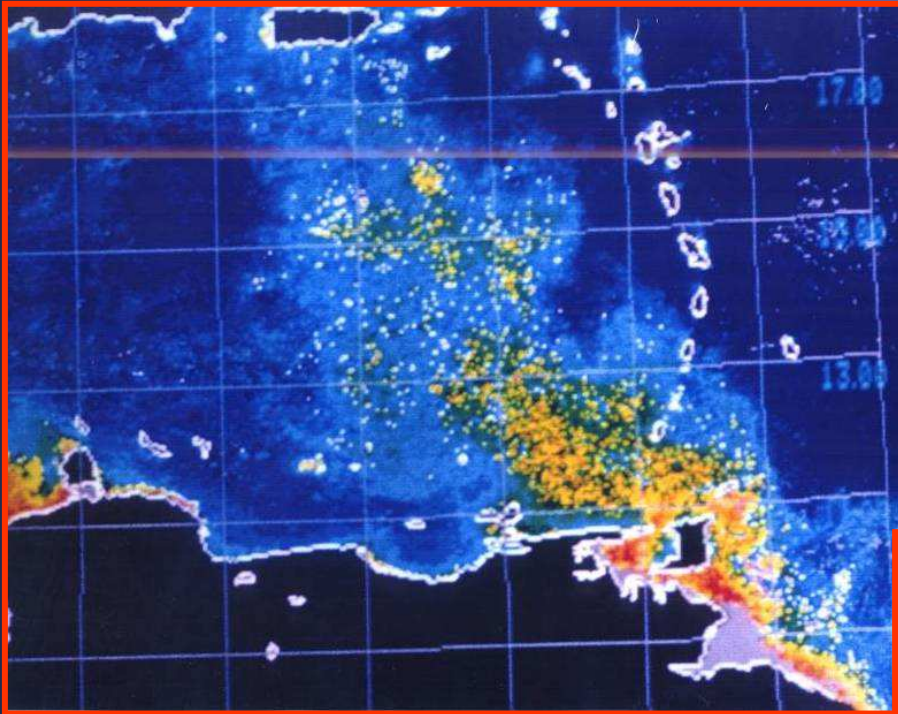
- Assortment of development stages
- Open Access
- Small-scale, artisanal fishery
- Resources are fully or over-exploited
- Social and economically important; food security
- Juxtaposed nature of EEZs
- Shared living marine resources
- Straddling/migratory fish stocks
- Oceanographic and ecological linkages

Region is complex and geographically and politically diverse

- **Geopolitical**
 - 33 states
- **Cultural**
 - Ethnicity, Language
- **Size**
 - smallest to largest
- **Development**
 - richest to poorest
- **Natural Resources**
- **Capacity**
- **Many regional, sub- regional groupings**
- **SIDs**

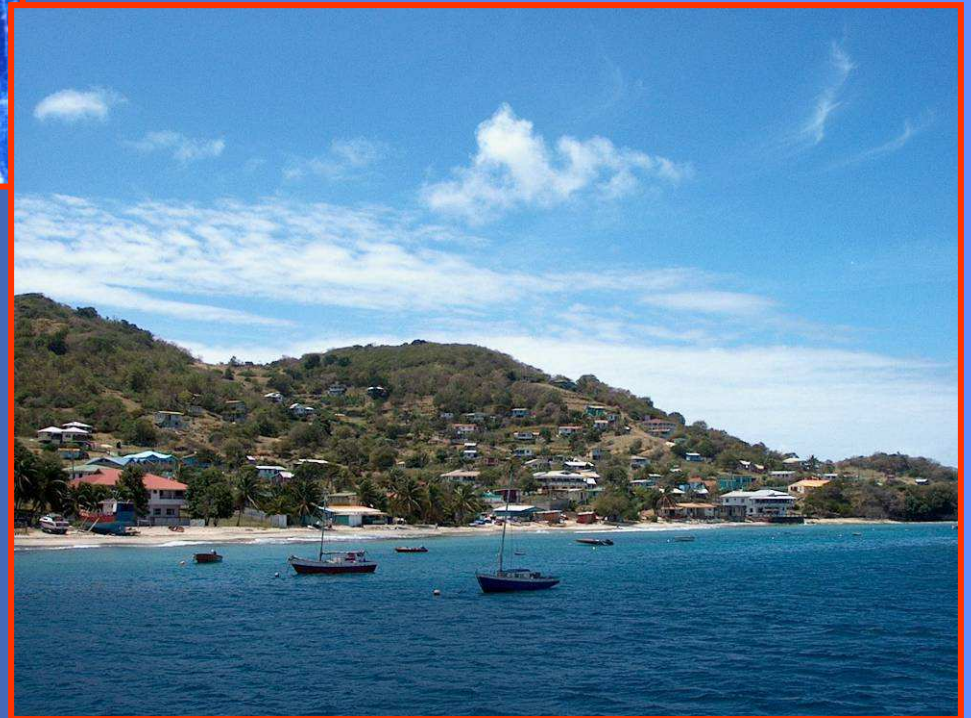


Complex land/sea interfaces



Numerous large river inputs bringing nutrients and pollutants that cross boundaries

Much human activity in the coastal zone that impacts the marine environments



The living marine resources of the Caribbean Large Marine Ecosystem are the basis for much of the region's economy

Fisheries



Tourism



Fish Production – WECAFRC Region

- Total – 8.2 million tonnes (2005); [plus 1 million tonnes from aquaculture]
- Stable since mid 1980's at 1.8 % of total world marine catch
- US portion also stabilised around 43% of total production

SOCIO-ECONOMIC IMPORTANCE

Spiny Lobster Fisheries (FAO, 2006)

- Average recorded landings
 - **1992 - 2005: 36 827 tonnes**
- Estimated Value (ex vessel)
 - **500 million US\$**
- Fishers (estimated): **58 700**
- Other workers (estimated): **194 600**



Estimated status of Caribbean spiny lobster (FAO, 2006)

Status of Stock	Countries
Under-exploited	Venezuela (some areas)
Fully-exploited or stable	Puerto Rico & US Virgin Islands; Turks & Caicos; United States of America; Belize; Mexico; Costa Rica; Cuba; Antigua & Barbuda; Venezuela (some areas)
Over-exploited	Nicaragua; Jamaica; Dominican Republic; Brazil; Colombia; Honduras

WECAFC Working groups:

Focus on few key species and areas

- Caribbean Spiny Lobster
- Queen conch
- Eastern Caribbean flyingfish
- Shrimp and groundfish, Guiana-Brazil shelf
- Moored FADs

Projects

- Lesser Antilles Pelagic Ecosystem project
- IPM- Intergrated rice/fish production
(restoring biodiversity of rice fields)

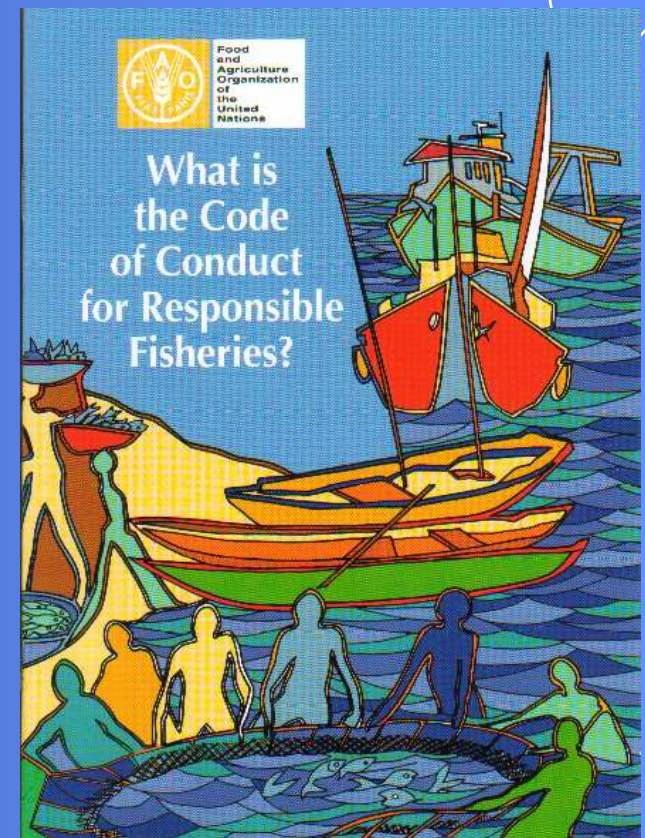
International Norms/Agreements

- **1972, World Conference on Human Development**
- **1982, UN Law of the Sea Convention**
- **1992, UNCED - Agenda 21**
- **1993, Biodiversity Convention**
- **1995, FAO Code of Conduct for Responsible Fisheries**
- **2001, Reykjavik Declaration on Responsible Fisheries in the marine Ecosystem**
- **2002, World Summit on Sustainable Development**

1995 FAO Code of Conduct for Responsible Fisheries

States and users of living aquatic resources should conserve aquatic ecosystems.

The right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and management of the living aquatic resources.



FAO Code

- is an authoritative digest of principles on sustainable fisheries.
- wide-ranging; applicable to all situations - national, local communities/groups, regional (RFBs),
- cover all aspects of fisheries (fisheries management, fishing operations, aquaculture.
- integration of fisheries in ICAM, post harvest and trade, research)
- Blueprint for sustainable use of aquatic biodiversity
- Voluntary

Article 6- Guiding principles

- **Maintain *biodiversity***
- **Use ecosystem approaches to management**
- **Manage fishing capacity and fishing methods to facilitate resource sustainability**
- **Use precautionary approaches to sustainable use, management and exploitation**
- **Protect and rehabilitate critical fisheries habitats and the environment**
- **Use post-harvest practices that maintain nutritional value and quality of products;**
- **Include fisheries interests in all aspects of management planning and development**

Article 6- Guiding principles

- **Recognise the contribution of small-scale fisheries to employment, income and food security**
- **Cooperate with States to prevent disputes or resolve them in a peaceful manner**
- **Establish effective mechanisms for monitoring, control and surveillance**
- **Collect and provide data including sharing, pooling and information exchange**



Biodiversity in the Code

Article 6.6

- Selective and environmentally safe fishing gear and practices, to the extent practicable, in order to maintain *biodiversity* and to conserve the population structure and aquatic ecosystems and protect fish quality.
- States and users of aquatic ecosystems should minimize: waste, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species.

Article Seven- Fisheries Management

Deals with biodiversity related issues

- excess fishing capacity
- the conservation of habitats and ecosystems,
- effects of humans on habitat
- aquaculture,
- by-catch and selective harvest
- the need to base management on the biological and genetic characteristics of stocks,
- the need for gathering knowledge on social and economic impacts of fisheries management and conservation,
- coastal zone management
- the need to adopt a precautionary approach.
- the special requirements of developing countries and small-scale, subsistence and artisanal fisheries,

FAO Code of Conduct for Responsible Fisheries

- **Tool for managing fisheries to conserve biodiversity**
- **Supported by FAO Technical Guidelines for Responsible Fisheries**
- **General, provides a framework for crafting more specific tools on biodiversity to meet specific**



ISSN 1106-5220

**FAO
TECHNICAL
GUIDELINES FOR
RESPONSIBLE
FISHERIES**

4

Suppl. 2



Food
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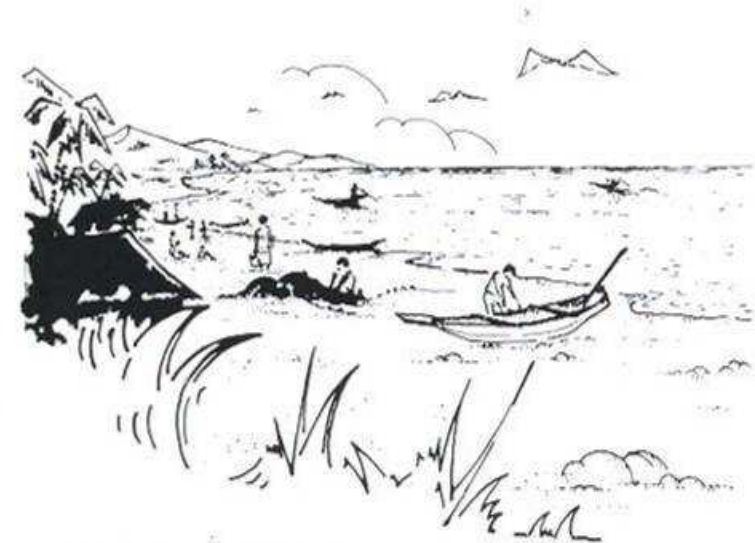
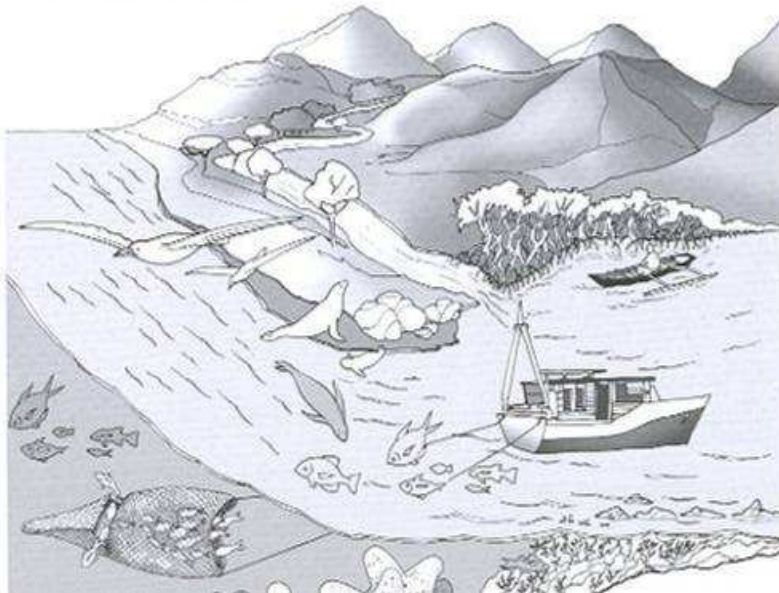
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**FAO
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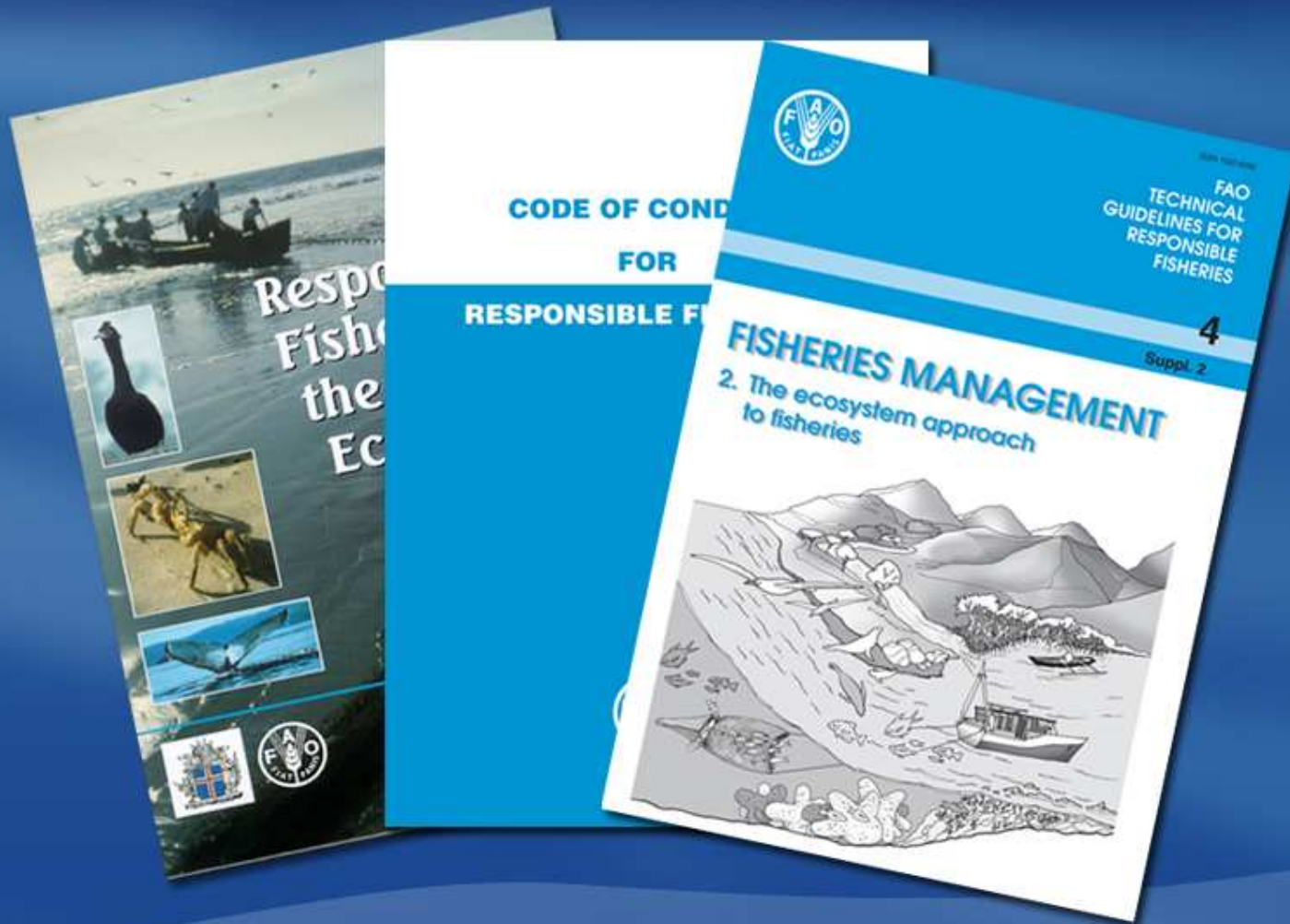
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FISHERIES MANAGEMENT

2. The ecosystem approach to fisheries



INTEGRATION OF FISHERIES INTO COASTAL AREA MANAGEMENT



May 2005







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, 2003)













EAF

- An extension of the conventional principles of sustainable fisheries development to cover the ecosystem as a whole
 - The aim is to ensure that, despite variability, uncertainty, and likely natural changes in the ecosystem, **the capacity of the aquatic ecosystem to produce food fish, revenues, employment and other essential services and livelihood, are maintained indefinitely for the benefit of present and future generations**
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EAF

- The main implication is to cater for the well being of both **human beings** and the **ecosystem**.
 - This means conservation of ecosystem structures, processes and interaction through sustainable use
 - It entails consideration of conflicting objectives depending on **users and stakeholders**
 - **Consensus** and an **equitable** distribution of benefits
 - Great **uncertainty** as to how to put an effective ecosystem management system into practice
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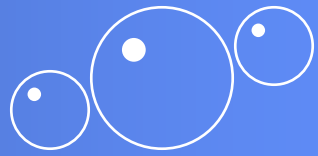


Implementing EAF

- Institutional arrangements will have to be strengthened and broadened to include non-fishery stakeholders
 - Extra effort in research will be required; not only targeted at verifying indicators and reference points, but also on economic and social implications of ecosystem management
 - Greater assistance to developing countries to increasing their capacity to introduce this fishery management concept in their fisheries
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Implementing EAF

- **Implicit is the recognition that cannot manage the ecosystem as such, but only the human activities**
 - **Fisheries authorities do not have the mandate nor authority for ecosystem management; require co-ordination between all sectors using or impacting on the marine ecosystem**
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Implementing EAF and Maintain Biodiversity

- Much can be achieved since fisheries management always had as its foundations the need to maintain stocks at the highest level of productivity and the principle of rebuilding accidentally depleted stocks

Lionfish Invaded Range

- Mediterranean Sea
- Southeast coast of USA
- Bahamian archipelago
- Turks & Caicos
- Mexico
- Puerto Rico
- St. Kitts
- Cuba
- Dominican Republic



Photo credit: Paula Whitfield, NOAA

QUESTIONS??



