

# **Bioethics of the Sea: Responsible Management of Fisheries**

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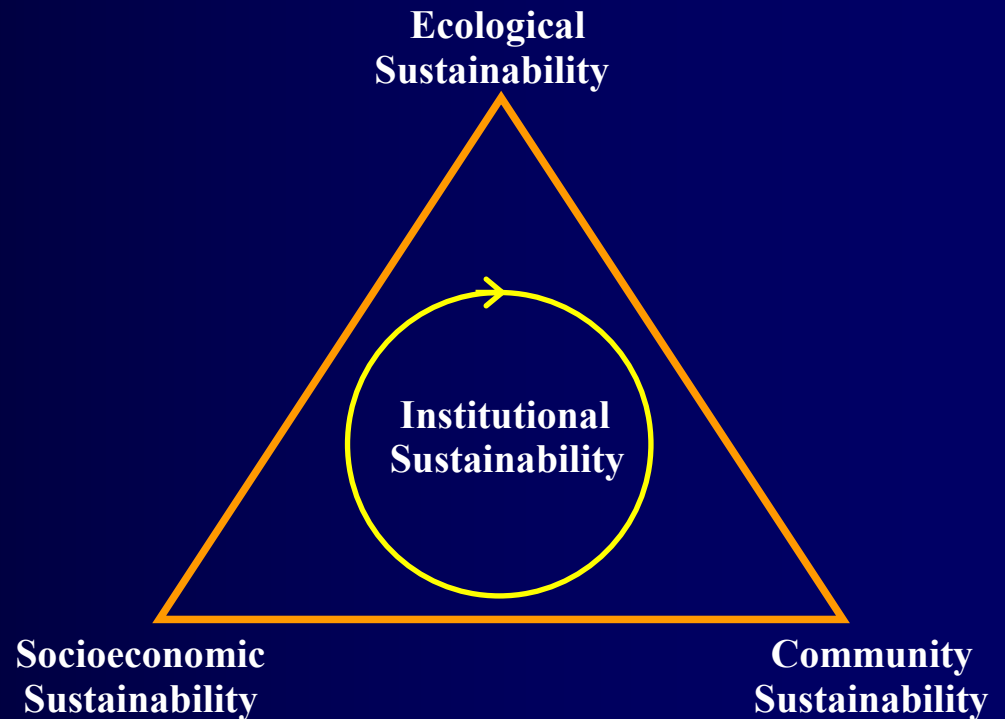


# Rationale for Fisheries Management

- (1) The renewability of fish, forests, wildlife, implies the need to balance how much is caught now with the capability of the resource to reproduce & generate future catches, i.e. to allocate between harvests now and in the future.
- (2) Because fish are limited absolutely, and even more so by the renewability constraint, a second allocation issue is faced: *who* should be allowed to catch the fish? This allocation issue applies from local to international levels.
- (3) The above two realities, combined with the fact that the resources within the EEZ of a nation are the common property of that nation's citizens, implies an unusually powerful role for governments in being able to decide:
  - distribution of fishery access (who can fish?)
  - inter-temporal sharing of the fish (now vs. future)

# Responsible Fisheries Management

The fundamental goal is to achieve the desired balance of society's multiple objectives (environmental, economic, social, cultural, institutional and ethical), doing so in the present & inter-temporally...



# Possible 'Responsibilities' of Fisheries Management

- Be fair to current generations
- Be fair to future generations
- Take care of the fish
- Take care of the ocean
- Take care of fishing communities
- Take care of social and economic values
- Protect intrinsic values of the ocean
- Involve stakeholders and the public in decisions

# Fishery Ethics: Some Issues

Bioethics of the Fishery involve a range of ethics themes:

- Biotechnology ethics (GM fish, aquaculture impact)
- Business ethics (destructive fishing, e.g. dynamite, trawling)
- Environmental ethics (inter-temporal equity, animal welfare)
- Moral Standing... of fish, marine mammals, ecosystems

Ethical issues arise in many specific marine and fishery topics:

- Conserving biodiversity (aquaculture vs. wild fish)
- “Fish for all” (fish for food or a luxury product?)
- Marine mammals (‘out of bounds’ or sustainable harvests?)
- The ocean as a dump (“freedom of the seas”?)
- Decision-making power (what are government’s obligations?)

# Fishery Ethics: The Focus

“Just Fish: Ethics and Canadian Marine Fisheries”

Coward, Ommer and Pitcher, editors (2000) ISER Books

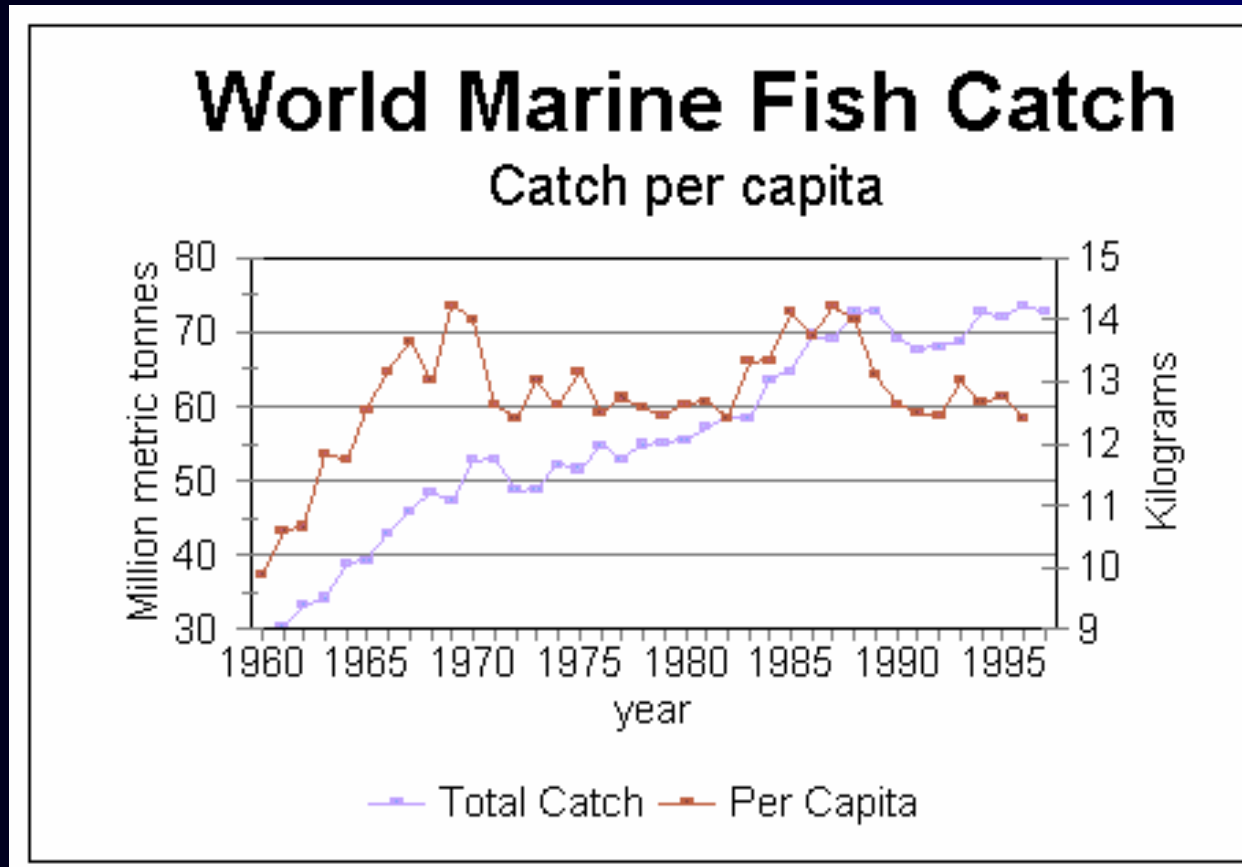
**Good:** Adjacency, Alternatives, Equity in access, Just management, Values

**Bad:** Habitat destruction, Ecosystem damage, Illegal fishing, Waste at sea

Here we focus on 3 major socio-economic themes:

1. *The ethics of over-fishing and inter-temporal justice*
2. *The impacts of fisheries on non-fishery values, such as biodiversity and the integrity of the ocean habitat*
3. *Access to fisheries: equity and distributional issues.*

# 1. The Ethics of Over-Fishing and Inter-Temporal Justice



# Eastern Baltic Cod

- Recommended Total Allowable Catch suggested by ICES scientists = 0 tonnes
- Total Allowable Catch set by the Baltic Fishery Commission = 40,000 tonnes
- Actual Catch Taken in the Eastern Baltic cod fishery = 70,000 tonnes (estimated)



# Underlying Attitudes in the Fishery

## ROLE OF THE REGULATOR

*'Spirit of Free Enterprise'*

*'Total Control'*

*No Place for the Public*

*No Place for Community*

## BURDEN OF PROOF

*The Scientific Method*

*The Technology Debate*

## “CONSERVATION CAN WAIT”

*Avoiding Disruption*

*The Annual Business Plan*

## “THE SYSTEM WORKS”

*Blaming the Ocean*

*We Are All at Fault*

*Too Many People*

*Fishing by Numbers*

# Fishery Management Solutions

- Adjust the Burden of Proof
- Avoid reliance on Quota Management
- Overcome the Illusion of Certainty
- Overcome the Fallacy of Controllability
- Move toward Robust Management
- Consumers and Conservation



## 2. Access to Fisheries: Equity and Distribution



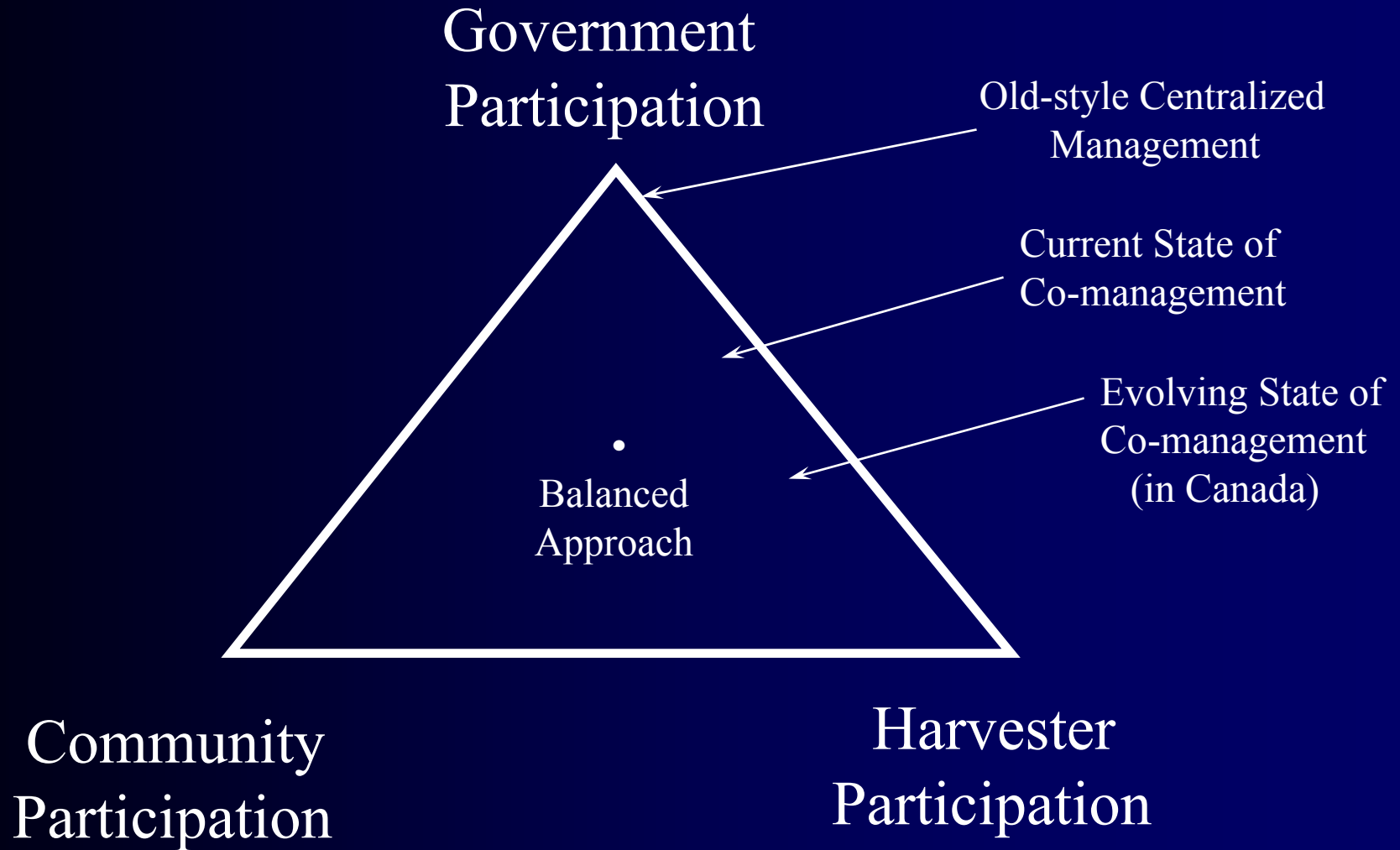
# North Sea and Baltic Sea

- Fisheries are unusual in that, because the fish resources belong to ‘the people’, governments have the capability, and responsibility, to decide who gets the fish.
- Within the EU, what circumstances would lead to the desirability of adjusting national shares of TACs?
- What is the balance in each nation between small-scale (community) fisheries and large-scale (industrial) ones?
- How are non-fishery values (e.g., healthy communities and regional economic development) balanced against strictly fishery ones, e.g. maximum profits (rents)?

# Distributional Issues

- What is a fair distribution of access to fishery resources internationally?
  - e.g., Overall allocation of Baltic fishery resources
- What is a fair distribution of access to fishery resources among current user groups within one jurisdiction?
  - e.g., commercial fishers vs. sport-fishing vs. aboriginal fishers
- What is a fair distribution of access to fishery resources among those in the fishery and those outside?
  - e.g., those with licenses or fish quota, and those without, including current crew members as well as youth wishing to enter the fishery
- Also important is the right to participate in management of the fishery, since this affects fishery livelihoods...

# Co-Management Triangle



# Community-Based Management

- Development, implementation, enforcement of management jointly by government, resource users, communities and the public.
- Local-level fishers and communities, those living closest to the fish resources, have a large responsibility for managing those resources.
- A traditional management approach in many aboriginal societies, reflecting aboriginal values linking together humans and nature.
- Can improve: use of local ecological knowledge; compliance with management; conflict resolution; ocean conservation.



### 3. Fisheries, Biodiversity and the Ocean Habitat





# Wild Salmon in the Baltic

- Wild salmon populations have been depleted in the Baltic, from fishing, environmental contaminants.
- Artificial rearing of salmon attempts to compensate for the loss of wild stocks, but is this helping or hurting?
- NGOs such as Coalition Clean Baltic raise the profile of the issue, but fishing and pollution continues
- What are the biodiversity and ethical implications?

# The Ocean Beyond the Fishery

- We have come to realize that classical fishery management focused too narrowly – on assessing individual fish stocks, not dealing with the state of the ecosystem as a whole
- The Ecosystem Approach is a way to broaden the perspective.
- The key idea is that fishery management must consider not only impacts of fishing on the target fish stocks, but also on other fisheries, the ocean habitat and overall ecosystem health.
- Similarly, other ocean and terrestrial industries should be taking into account their impacts on fisheries.

# **(a) Destruction of Ocean Habitat**

***Myth:***

**A Dead Fish is A Dead Fish**

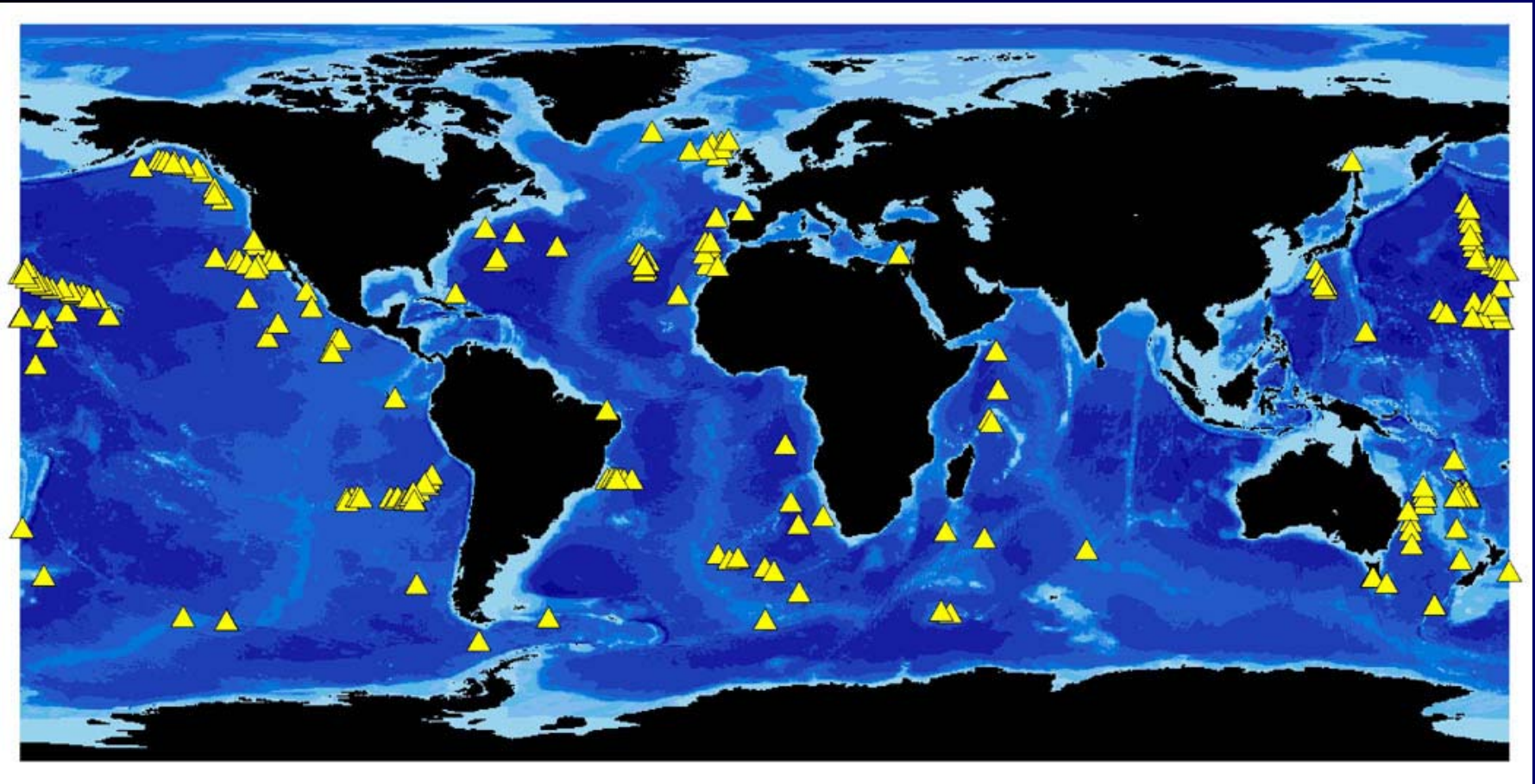
**(It doesn't matter how you catch them, just that you killed them)**

***Reality:***

**How We Fish Matters**

**(The ways of fishing have varying effects on other species and on fish habitat)**

# **(b) Seamounts and Biodiversity Threatened by Uncontrolled Fishing**



## 4. Toward Responsible Fishery Management

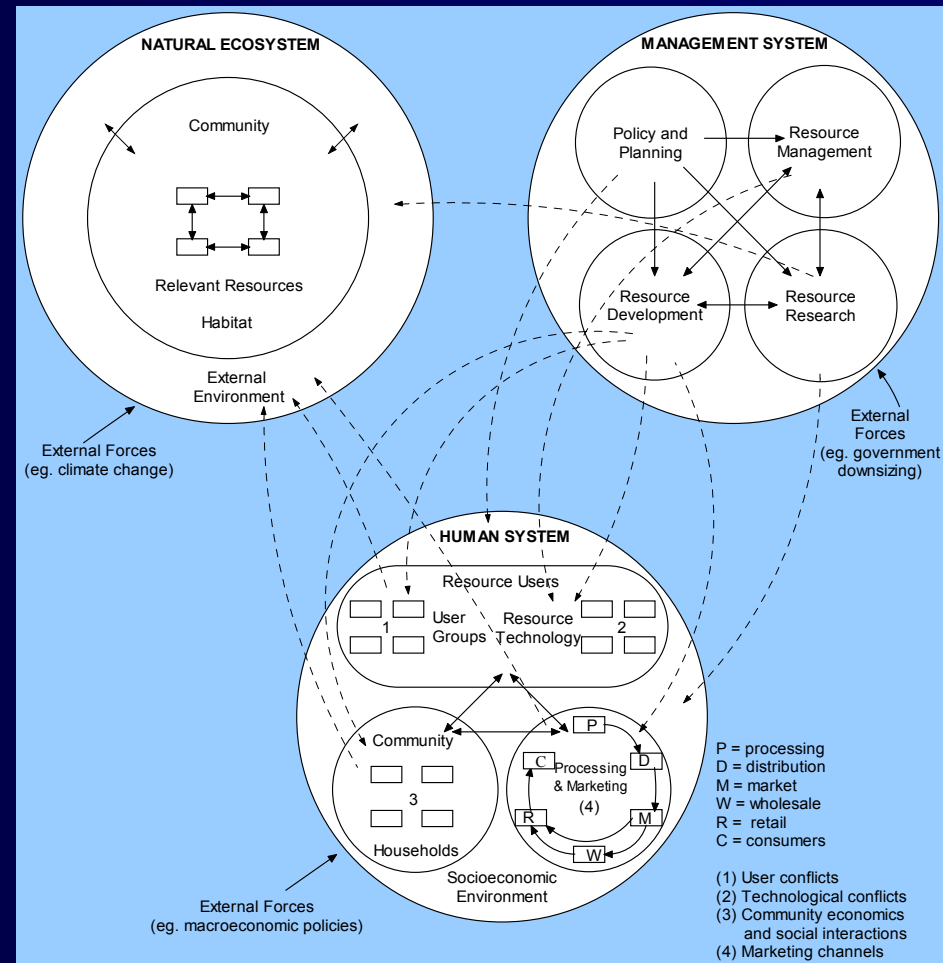


# Trends in Fishery Management

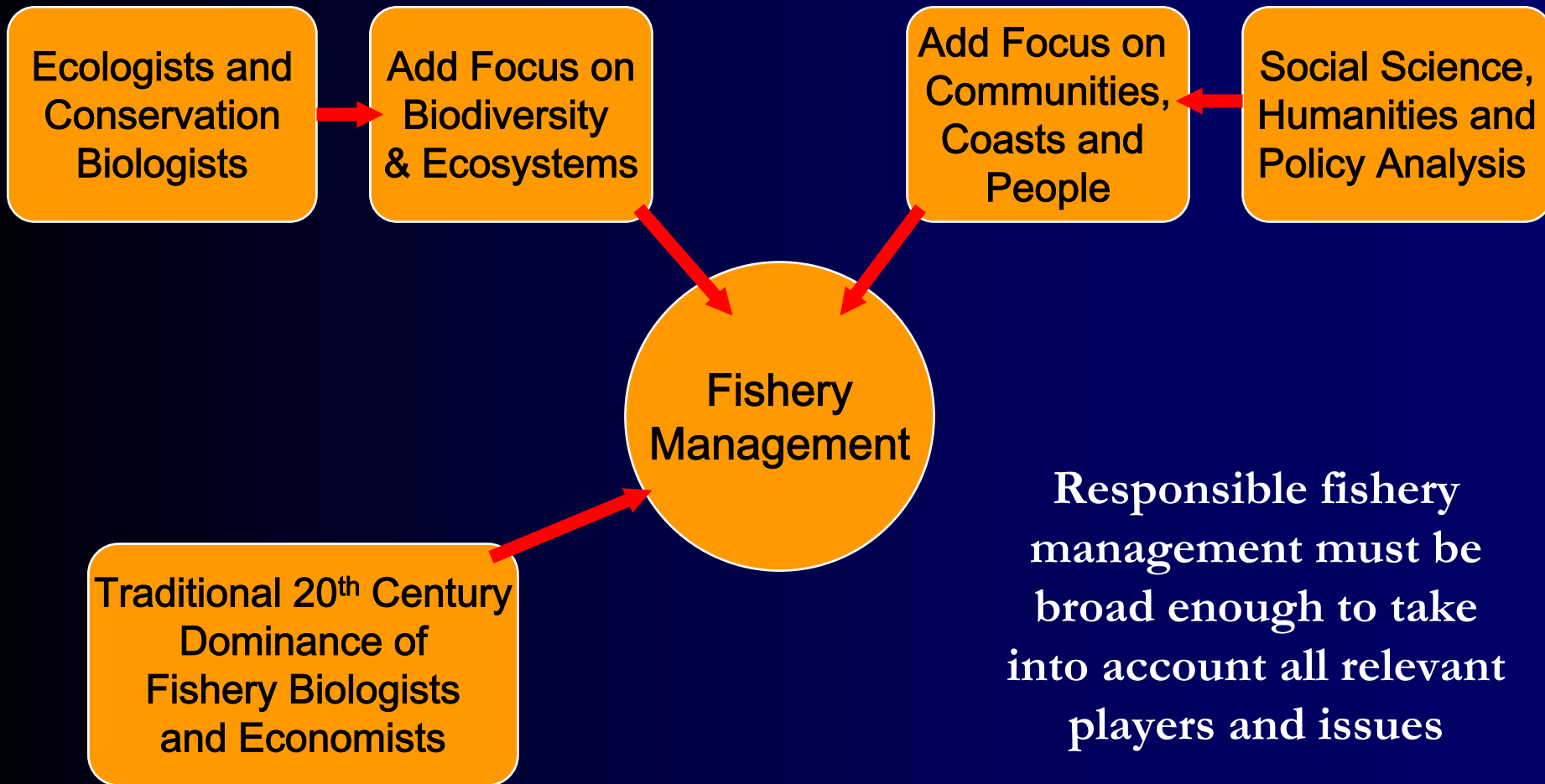
- In fishery management, the narrow approach of the past, that neglected interactions with other fisheries, fishing communities and society at large, is now evolving...
- There is increasing involvement of environmental NGOs and others in examining the broader impacts of fishery decisions
- More attention is being paid to the broader aquatic ecosystem, with an ecosystem approach
- Governments are more and more seeing fishery issues within a broader ocean & coastal context, to deal with interactions among multiple coastal uses, multiple stakeholders (coastal communities, industries, etc.) and among multiple levels of government...

# The Fishery-System Approach

- *Natural System:*
  - Natural Resources
  - The Ecosystem
  - Biophysical Environment
- *Human System:*
  - Resource Users
  - Households, Communities
  - Social/Economic Environment
- *Resource Management System:*
  - Policy and Planning
  - Integrated Management
  - Development and Research



# Broadening Fishery Management...





# Toward Responsible Fishery Management

## Challenges:

1. Inter-temporal justice: the ethics of over-fishing
2. Beyond the fishery: biodiversity and the ocean habitat
3. Access to fisheries: equity and distributional issues.

## Responses:

- ✓ Fishery System Approach – a broader perspective for management
- ✓ Participation, Co-management, Community-based Management
- ✓ Attention to Ocean Ecosystems and Coastal Human Systems
- ✓ Robust Management for Resilient Fisheries and Oceans
- ✓ Diversification of Livelihoods and Resource Uses
- ✓ Adaptive Management, Precautionary Approach

