

# **Allocation Issues in Marine Environment**

## **Managing Conflicts between Commercial, Artisanal, and Tourism in Tropical Fisheries**

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## Outline:

- **Evolutionary Allocation Principles in Tropical Fisheries**
- **Fisheries Allocation and Conflicts under Different Management Regime**
- **Fishery and Tourism Interaction – Managing Conflicts**
- **Conclusions and Way Forward**



# Evolution of Fisheries Allocation Paradigm

	Time Period			
	1950s – 1960s	1970s – early 1980s	Mid-1980s – early 1990s	Mid-1990s - present
<b>Dominant Paradigm</b>	<b>Freedom of the Seas</b>	<b>Rationalization</b>	<b>Sustainable development</b>	<b>Conservation and Social welfare paradigm</b>
<b>Allocation Principles</b>	<b>Open Access</b>	<b>Sustainable yield &amp; efficiency (MSY, MEY)</b>	<b>Environmental sustainability</b>	<b>Ecosystem health &amp; Biodiversity conservation; Multiple social and economic benefits;</b>
<b>Management Regime</b>	<b>Development Management</b>	<b>Territorial Use Rights (TURFs)</b>  <b>Centralized command and control</b>	<b>Monitoring Control &amp; Surveillance (MCS)</b>  <b>Integrated Coastal Management (ICM)</b>  <b>Rights-based fisheries management</b>	<b>Multiple use and user approach</b>  <b>Marine protected areas (MPAs)</b>  <b>Community-based management</b>  <b>Co-management</b>

# Influence of global policy and institutions on national and local allocation

	Time Period			
	1950s – 1960s	1970s – early 1980s	Mid-1980s – early 1990s	Mid-1990s - present
<b>Global Policies &amp; Institutions</b>	<b>Freedom of the Seas</b>	<b>EEZs, UNCLOS, common heritage of mankind</b>	<b>Brundtland Report CITES</b>	<b>Trade liberalization (e.g. WTO) CCRF-FAO MDG WSSD CBD</b>
<b>National Response</b>	<b>Open Access</b>	<b>Expansion of coastal states jurisdiction;  Joint venture license agreements  Fleet modernization  MCS systems  Aquaculture revolution  Introduction of Western stock assessment &amp; management techniques</b>	<b>Coastal land use planning; Fishing zone; Gear regulations by fishing scale and use category  Fisheries sector review (e.g. Philippines Fisheries Sector Program-World Bank)</b>	<b>Updating of national fisheries development plan (e.g. 1997 Agriculture &amp; Fisheries Modernization Act, 1998 Philippines Fisheries Code, Cambodia's National Fishery Law)  Tariff reduction</b>
<b>Local Response</b>	<b>Open Access</b>	<b>Increased fishing effort  Mangrove conversion to fishponds  Privatization</b>	<b>Fisheries infrastructure development (eg. National Milkfish Breeding Program, Philippines)</b>	<b>CBFM (Bangladesh)  Decentralization (Philippines, Indonesia)  Fishery management council (informal)  Community Fisheries (Cambodia)</b>

# Fishery Allocations under Different Management Regimes

## Traditional Fishery Management

- customary indigenous institutions
- preferential rights of adjacent villagers

## Centralized Fishery Management

- harvest control
- indirect control
- allocation of property rights

## Decentralized Fishery Management

- co-management (shared responsibility between governmental units, communities and user groups)
- management of gear conflicts between small-scale and large-scale fishers (Mozambique; Philippines; Thailand)

## Fisheries Management Regimes/Allocation Principles and Their Response to Conflicts

Management Regime	Allocation Principle	Response to Conflict	
		Type of Conflict Resolved	Type of Conflict Created
Traditional	Open access	Social tension between fishers (conflict on relations)	Resource sustainability
Centralized/Top-Down	Conservation of resource stock	Resource sustainability of selected fish stocks	Social tension across scale of fisheries (e.g., small-scale vs. large-scale fishers)
Decentralized/Bottom-Up	<ul style="list-style-type: none"> <li>• Ecological/environmental considerations</li> <li>• Intergenerational equity</li> <li>• Multiple use</li> </ul>	<ul style="list-style-type: none"> <li>• Resource sustainability</li> <li>• Social tension due to inclusion of local community/resource users in the management process</li> <li>• Multiple-use</li> </ul>	Social tension between managers and users of the resource (e.g., marine users vs. government authorities/fisheries administrators)

# Typology of Conflicts

Type 1 – who has control over fishery (access issue)

Type 2 – how fisheries are controlled

Type 3 – Relationships between fishery users (linguistic, religion, ethnic, scale of fishing)

Type 4 – Relationships between fishers and other users of resources (fishing vs. tourism vs. conservation)

Type 5 – Relationship between fishery and non-fishery issues

Bennett et al (2001)

# Conflict Resolutions - Instruments and Policies Under Different Management Regime

Typology of Conflict	Management Regime	Management Instrument
1) Who controls the fishery	Traditional	<ul style="list-style-type: none"> <li>· Traditional claims/preferential rights</li> <li>· Conflict settlement through tradition of mediation and retribution</li> </ul>
2) How are fisheries controlled		<ul style="list-style-type: none"> <li>· Collective fishing rights based on cultural traditions/values</li> <li>· Direct dialogue between various parties</li> <li>· Community policing–Chieftain tradition (Ghana, Africa)</li> </ul>
3) Relations between fishery users		<ul style="list-style-type: none"> <li>· Inter-village disputes settlement through negotiations among village chiefs</li> </ul>
4) Relations between fishers and other users		<ul style="list-style-type: none"> <li>· Inter-village disputes settlement through negotiations among village chiefs</li> </ul>
5) Relations between fishery and non-fishery		<ul style="list-style-type: none"> <li>· Council of Elders</li> </ul>
1) Who controls the fishery	Centralized	<ul style="list-style-type: none"> <li>· Zoning regulation (Republic Act 8850, Philippines) – municipal vs. commercial</li> </ul>
2) How are fisheries controlled		<ul style="list-style-type: none"> <li>· Indirect controls/rights management on fishing effort</li> <li>· Direct controls on catch limit (ITQs – New Zealand)</li> </ul>
3) Relations between fishery users		<ul style="list-style-type: none"> <li>· Indirect controls on fishing effort</li> </ul>
4) Relations between fishers and other users		<ul style="list-style-type: none"> <li>· Recreational regulations – bag and size limits, method and gear restrictions, closed areas and closed seasons (Australia)</li> </ul>
5) Relations between fishery and non-fishery		<ul style="list-style-type: none"> <li>· Use of industry liaison for arbitration</li> <li>· Monitoring and enforcement of fisheries regulations, public strategic policy, and economic planning usually based in government agencies</li> </ul>
1) Who controls the fishery	Decentralized	<ul style="list-style-type: none"> <li>· Zoning agreement based on sustainable use, integrated and co-management of the marine resource and multiple use (Caribbean)</li> </ul>
2) How are fisheries controlled		<ul style="list-style-type: none"> <li>· Social inclusion and industrial organization</li> <li>· Amicable settlement through payment of damages (Philippines)</li> <li>· Rational harvesting between scallop and oyster (New Zealand)</li> <li>· Build non-fishery capacity and alternative livelihood</li> </ul>
3) Relations between fishery users		<ul style="list-style-type: none"> <li>· Community-Based Fisheries Management Programme operating hand-in-hand with the traditional institution (Ghana, Africa)</li> </ul>
4) Relations between fishers and other users		<ul style="list-style-type: none"> <li>· Establishment of MPAs (Sulawesi Sea) – small scale vs. tourists</li> <li>· Information, education, and communication to create and enhance awareness</li> </ul>
5) Relations between fishery and non-fishery		<ul style="list-style-type: none"> <li>· Industrial organization (i.e., power sharing and balanced fisheries management)</li> <li>· Empowering co-management (i.e., empowerment of fishing communities)</li> </ul>



## **Origin of Conflicts in the Philippines, Thailand and India**

### **Philippines –small-scale municipal fisheries versus large-scale trawl fisheries**

Republic Act (RA) 8550 is a zoning regulation that restricts fishing activities of commercial fishers to waters beyond 15 kilometers from the municipality's coastline.

### **Thailand – gear conflict versus weak enforcement of zoning regulations**

The long-standing conflicts in Songkhla Province, Thailand can be traced to the a) difference in the type of gear used by local small-scale fishers and those used migrant large-scale anchovy fishers

### **India – Tamil Nadu State Fisheries Act 1983 versus fishing practices**

The key conflicts arose from the resource sharing and indiscriminate fishing practices of the rival groups of fishers. Specifically, conflicts were due to use of smaller mesh-sized nets, trawling in breeding grounds, and weak marketing structure. The use of mechanized boats encroaching in areas allocated for traditional fishers was one of the most common conflicts not only in the study area, but also in adjoining fishing areas. The dispute was being linked to state government-led implementation of the Tamil Nadu Marine Fisheries Regulation Act 1983 aimed at curbing the excess capacity of mechanized fishing boats by creating separate fishing zones for the different sub-sectors

# Fisheries Conflicts in the Philippines, Thailand, and India

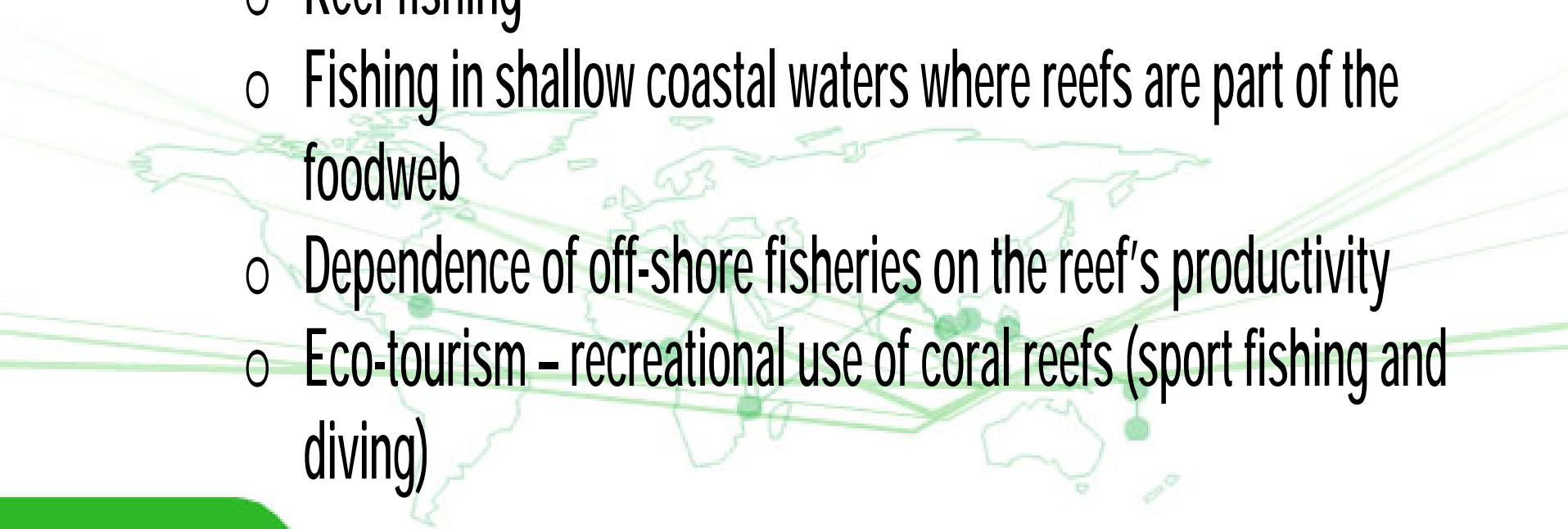
(Salayo *et al* 2005a)

Typology of Conflicts	Philippines	Thailand	India
Who controls the fishery (access issues)	Small-scale fishers vs commercial fishers and fishery regulatory bodies over zoning of fishing grounds to delineate access by category of fishers	Large vs small-scale fishers over rights and access to designated zones by type of fishery and use of light luring and modern fishing gears by large scale fishers	Traditional vs mechanized fishers who venture in 8km inshore waters allocated for traditional fishers
How are the fisheries controlled	Small-scale fishers vs commercial fishers and sea patrols over variable levels of patrolling and enforcement of the latter that favor commercial fishers who can afford penalties	Commercial trawlers, push netters, vs regulatory agencies over lack of enforcement to control the number of fishing vessels and limit entry and operation of destructive gears	Fishers vs state government on mesh size regulation
Relations between the fishery users (linguistic, religion, ethnic, scale of fishing)	Local artisanal vs migrant commercial fishermen over access and competition on fishing zones	Rivalry between resident small-scale vs migrant large-scale anchovy fishers over legitimacy of access and destruction of gears	Traditional fishers complain over use of ring seines by mechanized fishers
Relations between fishers and other users of the aquatic environment (fishing vs tourism and similar water resource-based industries)	Fishery and sectors such as tourism, navigation/ docking, sand quarrying and mariculture over varying use of aquatic resources	Rice farmers vs prawn breeders over resource use	Traditional vs mechanized fishers and hatchery operators over collection of prawn brooders  Fishers vs government and industries on discharge of effluents; also tourism
Relationship between fishers and non-fishery issues	Fishers vs government authorities over variable standards in management and enforcement arising from devolution of functions and overlapping institutional structures	Fishers vs government authorities over lack of proper management and enforcement	Fishers vs government on overlapping functions of agencies and weak structure at various government levels

## Examples of Integrated Management Options for Resolving Conflicts (Salayo et al 2005a)

<b>Country</b>	<b>Management Options</b>
<b>Philippines</b>	<ul style="list-style-type: none"><li>▪ <b>Limit new entrants</b></li><li>▪ <b>Review provisions on zoning</b></li><li>▪ <b>Alternative livelihood options</b></li></ul>
<b>Thailand</b>	<ul style="list-style-type: none"><li>▪ <b>Fishing zones</b></li><li>▪ <b>Promote community-based fisheries management</b></li><li>▪ <b>Limit fishing effort (improve licensing systems)</b></li></ul>

# Fishery-Tourism Interaction

- Fish no longer just a source of food
  - Huge sports and recreational benefits
  - Coral reefs central to fishery-tourism interaction
    - Reef fishing
    - Fishing in shallow coastal waters where reefs are part of the foodweb
    - Dependence of off-shore fisheries on the reef's productivity
    - Eco-tourism – recreational use of coral reefs (sport fishing and diving)
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# Origin of Fishery-Tourism Conflicts

- Traditional fishers unable to reap the tourism benefits
  - Eco-tourism directly restricts fishing access displacing livelihoods of traditional fishers
  - Unregulated growth of fishing and tourism created a complex allocation problem
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# Fishery-Tourism Interaction - Allocation Issues and Conflicts Resolution in the Caribbean

Issues	Allocation Principles	Management Approach
<p><b>Soufriere, St Lucia (ICRI, nd)</b></p> <ul style="list-style-type: none"> <li>• Dive operators vs. fishers over coral reefs</li> <li>• Yachts vs. fishermen over anchoring in fishing areas</li> <li>• Local community vs. hoteliers over access to beaches</li> <li>• Fishermen vs. authorities over a jetty in a fishing priority area;</li> <li>• Fishermen vs. hoteliers on over the use of beaches</li> </ul>	<ul style="list-style-type: none"> <li>• Zoning Agreement - (marine reserves, fishing priority areas, multiple use areas, recreational areas, and yacht mooring sites)</li> <li>• National and Local development - sustainable use, institutional collaboration, active and enlightened participation,</li> <li>• Equitable Sharing of Benefits and Responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Decentralized/participatory management</b></li> <li>❖ Creation of Zones of Local Fisheries Management Area</li> <li>❖ Creation of Soufriere Marine Management Association (SMMA) comprising all the agencies with management functions in the Area,</li> <li>❖ SMMA's facilitating role to link user groups</li> <li>• <b>Key Success Factors</b></li> <li>❖ Direct participation of resource users,</li> <li>❖ Direct communication among stakeholder groups</li> </ul>
<p><b>Barbados and Negril, Jamaica (CANARI, 2005)</b></p> <ul style="list-style-type: none"> <li>• <b>Beach access</b> – landing and seine net operation by fishers</li> <li>• <b>Trap fishing</b> - traps catching underage fish vs. divers cutting lines/damage traps to release fish</li> <li>• <b>Zoning</b> - both sectors fight over MPA zoning</li> <li>• <b>Impact on fish stocks</b> - pollution and sedimentation from tourism vs. reduced fishing</li> </ul>	<ul style="list-style-type: none"> <li>• Mesh size law - legal fish trap mesh size to protect young stocks</li> <li>• Promoting information programme on how the mesh size law protects young fish</li> <li>• Protected nursery areas Protect and enhance local livelihoods</li> <li>• Allocation of beaches to adjacent landowners (ignoring traditional rights of local users)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Co-management arrangement</b></li> <li>❖ Cooperation of fishers, park authority and tourism operators</li> <li>❖ Marine Park Management Authority - NGO</li> <li>• <b>Unresolved Issues:</b></li> <li>❖ Uncontrolled coastal development - developer dredging through a sea grass bed within a protected nursery area</li> <li>❖ Tourism expansion squeezing fishers out of traditional landing beaches</li> </ul>

# Fishery-Tourism Interaction - Allocation Issues and Conflicts

## Resolution in ECUADOR and MALDIVES

Issues/Conflicts	Allocation Principles	Management Approach
<p style="text-align: right;"><b>Galapagos, ECUADOR (Oviedo 1999)</b></p> <p><b>Beginning of the Conflicts</b></p> <ul style="list-style-type: none"> <li>• The zoning of the marine reserve by Executive Decree, without the support of law, created conflicts among interest groups (Coello, 1996)               <ol style="list-style-type: none"> <li>1. Conservation interests vs. Small-scale and commercial fishers;</li> <li>2. Local fishers vs. mainland fishers</li> <li>3. Small-scale fishers vs. tourism</li> <li>4. Commercial vs. small-scale fishers, the authorities, and tourism</li> <li>5. Conservation authorities vs. fishing authorities vs. military/police</li> </ol> </li> <li>• Feeling of exclusion brought about by restrictions on access to fishing resources (closed seasons; freeze on fleet size and capacity)</li> <li>• Popular uprising by fishers in 1986</li> </ul> <p><b>Deepening the Crisis</b></p> <ol style="list-style-type: none"> <li>1. Perception of a tacit alliance between the conservationists and tourism industry to displace fishers from coastal areas</li> <li>2. Growing crisis among local tourism operators, who had invested heavily in infrastructure that remained underoccupied</li> <li>3. Lack of local government funds for rapidly growing human settlements</li> <li>4. The inequitable distribution among the islands of the benefits of tourism, which had been concentrated primarily on one island;</li> <li>5. The influx from the mainland - increase in illegal fishing in the marine reserve, and the fines and penalties exacted against violators.</li> </ol>	<ul style="list-style-type: none"> <li>• Marine reserves with multiple uses</li> <li>• Conservation and sustainable use</li> <li>• Zoning structure for fishing activities;</li> <li>• Confinement of the extraction of marine resources to the local, small-scale fishery</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Decentralized/participatory management</b> <ul style="list-style-type: none"> <li>❖ Special legislation - <i>Regime for the Province of Galapagos</i> (Congreso Nacional 1998) clarified the legal regime.</li> <li>❖ Participatory management body - recognition of local management capabilities</li> <li>❖ Conservation and sustainable development – national park, marine reserves, human settlements</li> </ul> </li> <li><b>Success Factors:</b> <ul style="list-style-type: none"> <li>❖ Legitimacy of the new law</li> <li>❖ Participatory process to revise management plan of marine reserves</li> <li>❖ Empowerment of national park authorities - collect, administer, and allocate tax revenues for marine reserve's management plan</li> <li>❖ Adaptive management</li> </ul> </li> </ul>
<p style="text-align: right;"><b>MALDIVES (MMT 2005)</b></p> <ul style="list-style-type: none"> <li>• <b>Conflict of interests between divers and fishers using the same marine areas</b></li> </ul>	<ul style="list-style-type: none"> <li>• Zoning regulations</li> <li>• MPA establishment</li> <li>• Promote eco-tourism</li> </ul>	<ul style="list-style-type: none"> <li>❖ Regulatory management of inter-sectors</li> <li>❖ In-situ conservation -</li> </ul>

# Summary and Conclusion

## Paradigm Shifts and Management Objectives – WSSD goals and MDGs

- Preserving Integrity of the Ecosystem
  - Conservation of Biological Diversity
  - Drastic action on reducing overcapacity
  - Allocation of Equitable Use Rights
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# Summary and Conclusion (contd..)

## Challenges for Tropical Developing Countries

- Changing dynamics - allocating resource rights, and use rights
  - Equity benefits
  - Managing multi-stakeholder conflicts
  - Devolving institutions and strengthening their capacities
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# Summary and Conclusion (contd..)

## Way forward -Vertical and Horizontal Integration of Management

- Combination of Conservation/ MPA management along with TURF-type of allocations
  - Linking ecotourism with community-based management
  - Harnessing and managing non-extractive use of marine resources for equity benefit to communities
  - Managing the value chain and ecological footprints for coastal community development
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