



THE GLOBAL PROGRAM ON FISHERIES

STRATEGIC VISION FOR FISHERIES AND AQUACULTURE

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Agriculture and Rural Development Department
The World Bank Group



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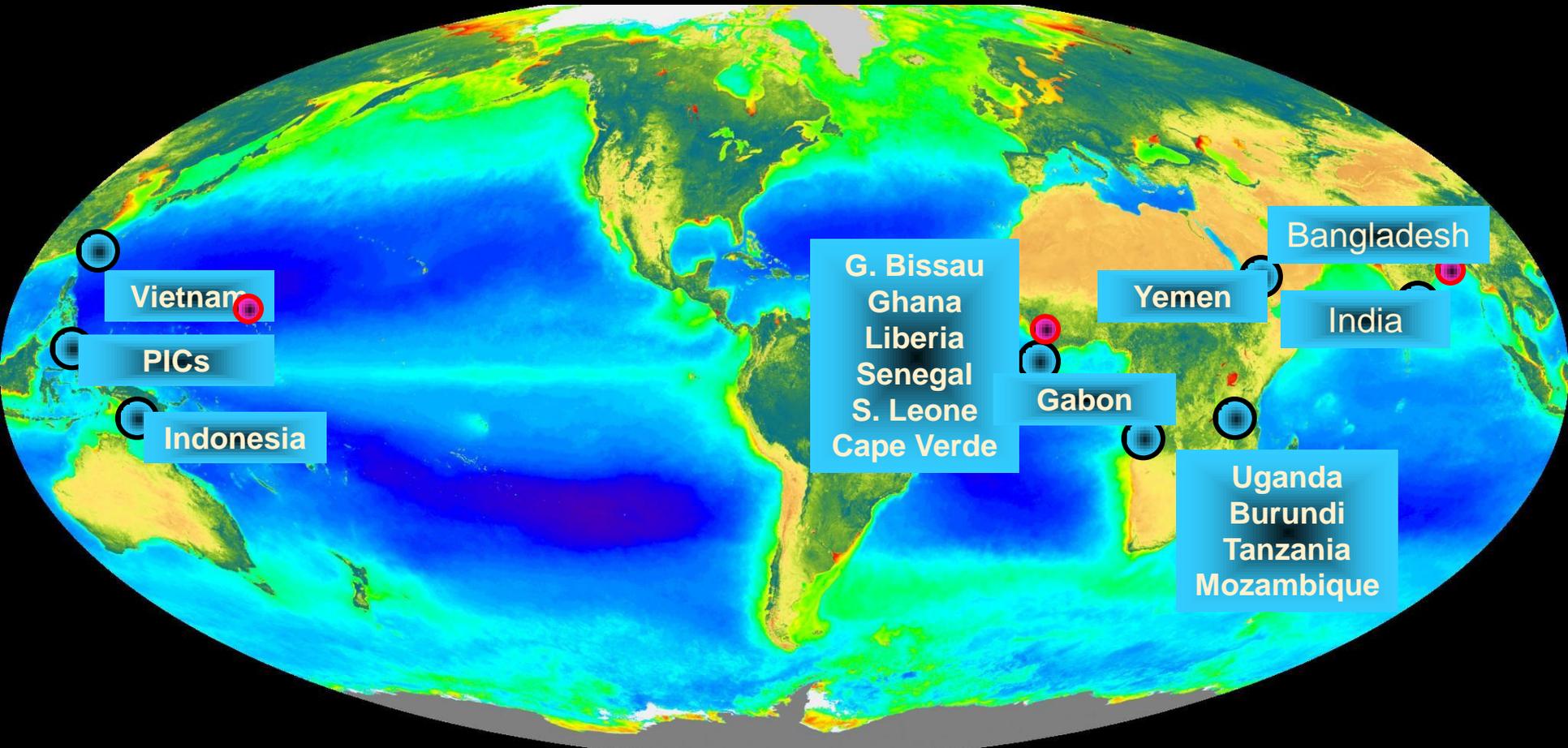
Fisheries Management Reform: experience and practice

**Sustainable Fisheries
Workshop
World Bank/
COREMAP
Jakarta, 13 October
2011**



In preparation

KEY WORLD BANK FISHERIES INVESTMENTS



US\$ 600+ million in dedicated fisheries and aquaculture projects (including pipeline) – over \$1 billion including projects with fisheries components

Outline of presentation

- *Introduction – fisheries reform in diverse political settings*
- *Key tasks*
 - *Case studies – New Zealand / Mexico*
- *Overall recommendations*
- *Next steps*

Introduction - recap

Trends in world fisheries

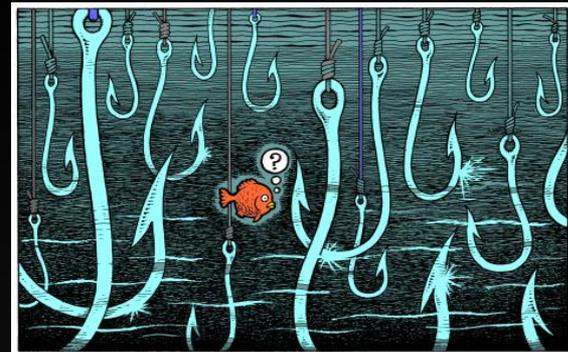
- Widespread biological decline
 - Some scientists predict that all world's capture fisheries will be 'collapsed' by 2048.
 - The fraction of fisheries FAO has declared over-exploited has increased
- Dismal economic performance
 - Potential economic (rent) loss in capture fisheries US\$50B/year (plus);
 - Actual 'rent' is **-\$30B/year (loss)**.

Introduction - the problem

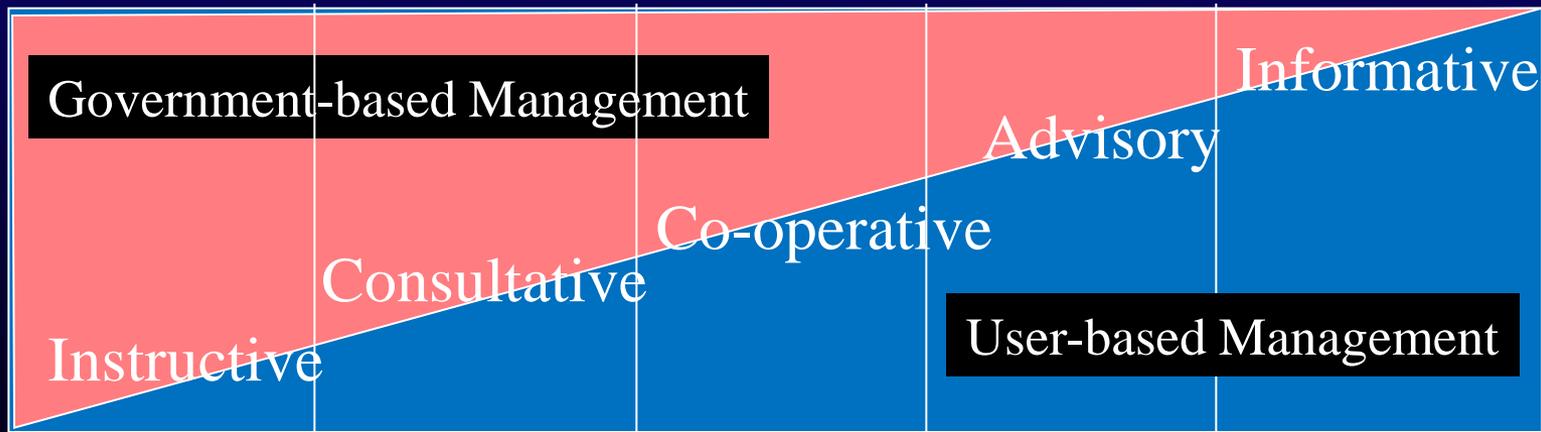
Reasons for both 'tragedies

- Access to fish stocks historically open to all
 - Encourages wasteful race to fish.
 - Eliminates any incentive to protect or steward the resource.
- Sharp contrast to *owned* biological resources
 - Stocks of owned animals (cattle, sheep, etc.) not in danger;
 - Aquaculture is expanding exponentially;
 - Both types of owned resources are generating economic value (rents).

Without ownership, the fishery is prone to the tragedy of the commons in which fishermen compete for an ever decreasing catch



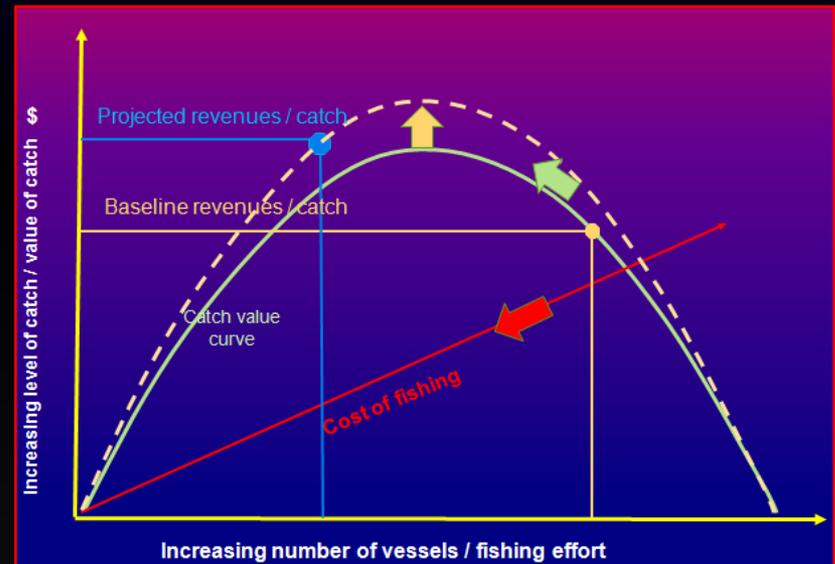
Introduction - the solution



- The figure identifies the various roles that government can take in managing fisheries (i.e. instructive, consultative, cooperative, advisory, informative).
- User based management approaches where government adopts an advisory or informative role and management is done by users work best

Introduction – rights based management

- Advisory or informative approaches involve allocating rights to exclusively use and manage defined fishery units to individuals or communities of interest so that they can control fisheries use.
- Rights based systems can have many forms:
 - Quantitative catch rights assigned to individuals (ITQs).
 - Spatially delineated rights (TURFs).
 - Management rights assigned to user groups (coops and associations owned by harvesters and / or community interests)
- Rights-based approaches enable the economic value of fisheries (the profit) to be captured and shared amongst fish users



Introduction - evidence

Evidence of impact of rights based systems

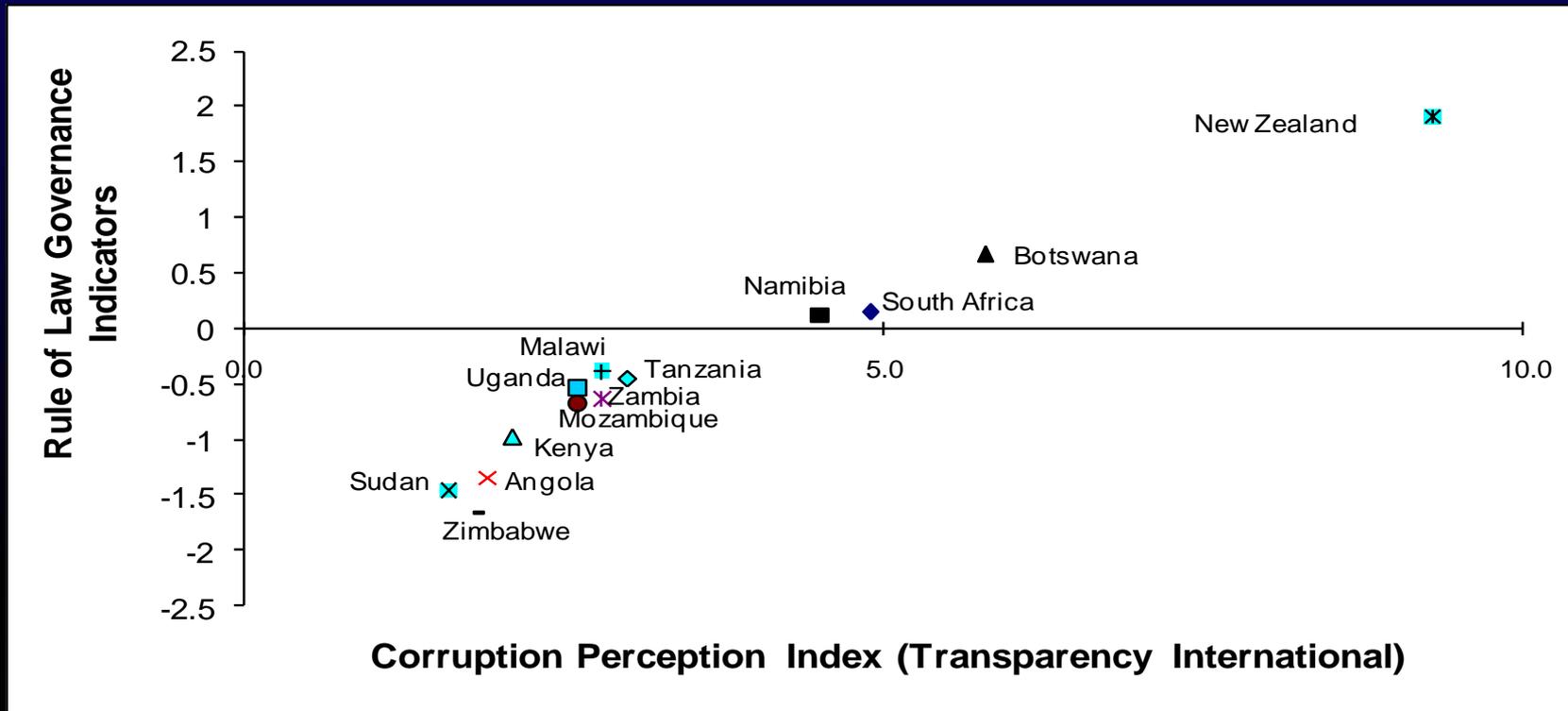
- Biological status
 - Fisheries managed with 'catch shares' show no sign of collapse; stocks stable or improving.
 - Bycatch diminishes when rights based systems are established.
- Economic status
 - Individual transferable quotas (ITQs) generate rents visible in quota prices.
 - Experience with management by coops indicates generation of profits.
 - ITQ and coop management improves product quality for consumers.
 - Rights-based management reduces hazards in fishing and excess costs in processing.

Introduction – political context

- Choice of rights based strategy depends critically on the distribution of political power in Government:
 - If political power is broadly distributed, government power is used to provide public goods (e.g. courts, police, general rule of law);
- If political power is concentrated, government power can be used to enrich political elites. This might involve:
 - Transfer of resources to political elites
 - Rule of law is absent or weak
 - Corruption is possible
- Choice can also depend on ecology
 - TURFs vs. ITQs for sedentary vs. mobile species.

References: Acemoglu and Johnson, *JPE*, 2001; Bueno de Mesquita, *et al*, Cambridge Univ. Press, 2003; LaPorta, *et al*, *JLEO*, 1998; Lizzeri and Persico, *AER*, 2001; Milesi-Ferretti, *et al*, *QJE*, 2002; Putnam, Princeton Univ. Press, 1993.

Policy processes for reform will differ depending on political context



- African states' political characteristics discourage production of public goods

Findings from case studies

- Rights based systems that use government managed catch share systems are rare in developing countries
 - require strong rule of law and central government funding and capacity to effectively enforce
- Rights based systems in developing and developed countries that empower users / communities to set and enforce rules through cooperative type systems work best
 - Can leverage customs and culture and incentives for self governance and enforcement
- Cooperative type systems can be directly supported by NGO and private sector initiatives

Distinguishing features of “coops”

- Rights assigned to a well defined *group*, e.g. a cooperative, association, company
- Beneficiaries of “coops” are seen to be fair
- Group assignment enables collective decision making
- Coop controls members’ actions to some degree
- Collective control enables:
 - Coordinated fishing for greater efficiency;
 - Stock enhancement, conservation, collective investments.

Necessary condition for success: Right to exclude outsiders.

Key tasks for fisheries reform

- Define the fishery system that is to be managed (the management unit)
- Determine responsibilities for fisheries management and use
 - Must assign tasks to align incentives for efficiency and resource stewardship
- Delineate who has rights to harvest and who will receive the benefits of fishing
- Design management systems and processes
- Build capacity and capability to implement

Examine key tasks for reform
with reference to real world
examples from New Zealand and
Mexico

N Location of NEW ZEALAND in
World Map



Mexico

New Zealand

Map not to Scale

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Defining fisheries management units

New Zealand

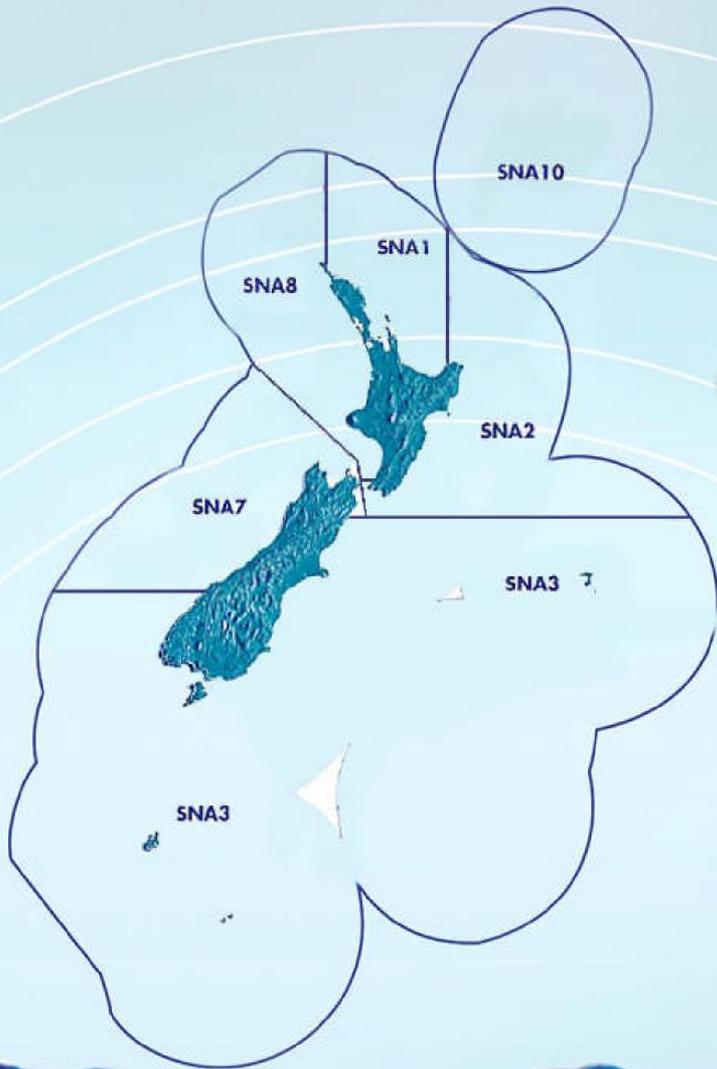
- Fisheries managed by Quota Management Areas

- (QMAs) These are usually 1 or more combinations of the 10 Fisheries Management Areas in NZ's EEZ

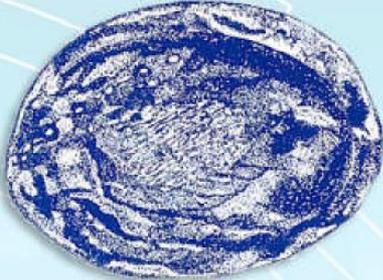
- Each QMA is the area of sea that holds the total population of a fishstock – it corresponds to the fish biology



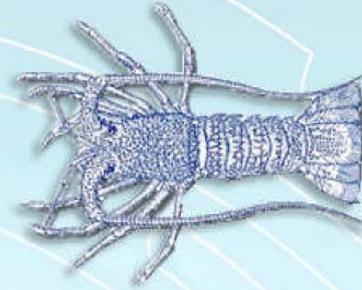
- For example
- SNA
- (snapper)



For example PAU (abalone)



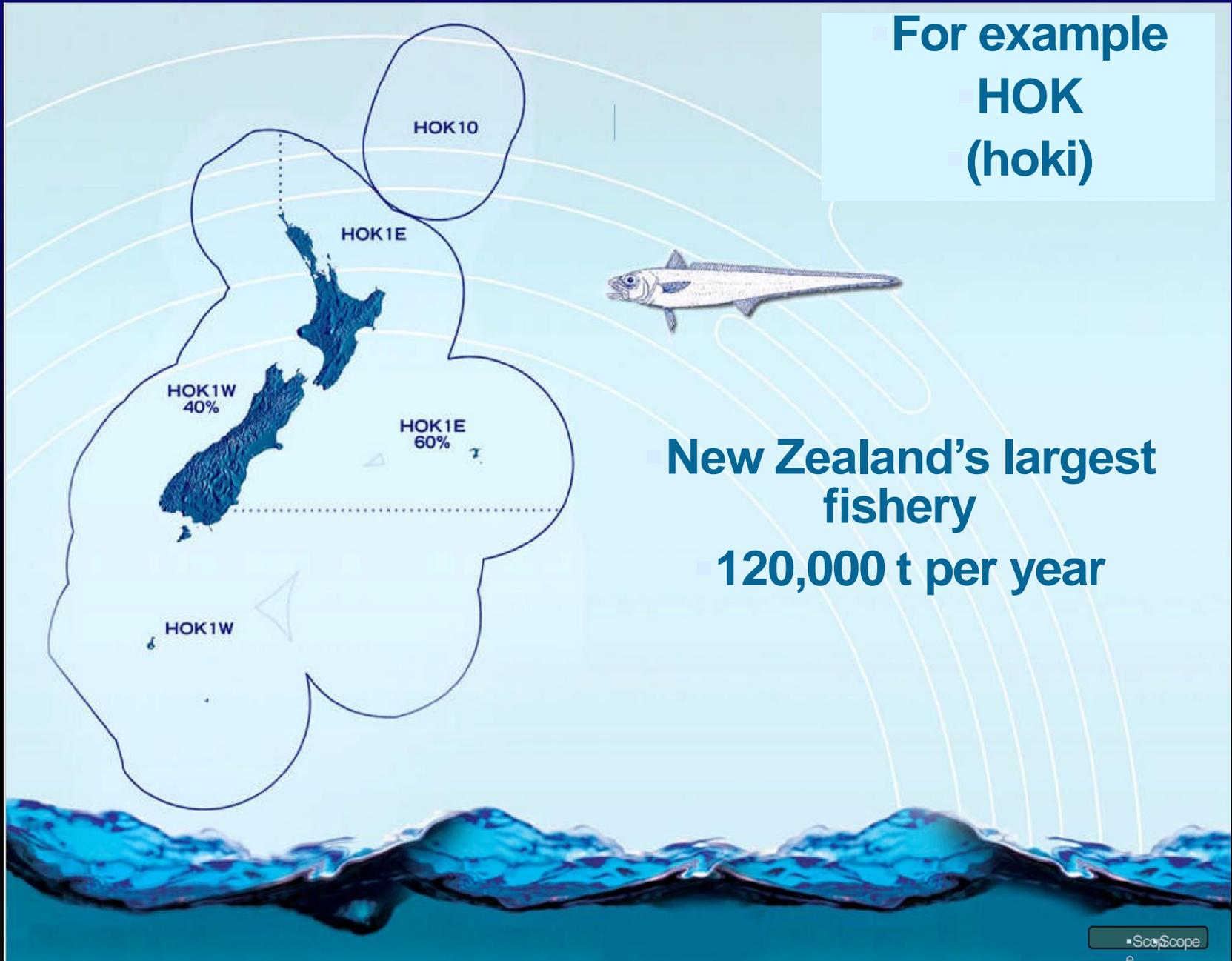
■ For example
■ CRA
■ (lobster)



- For example
 - HOK
 - (hoki)

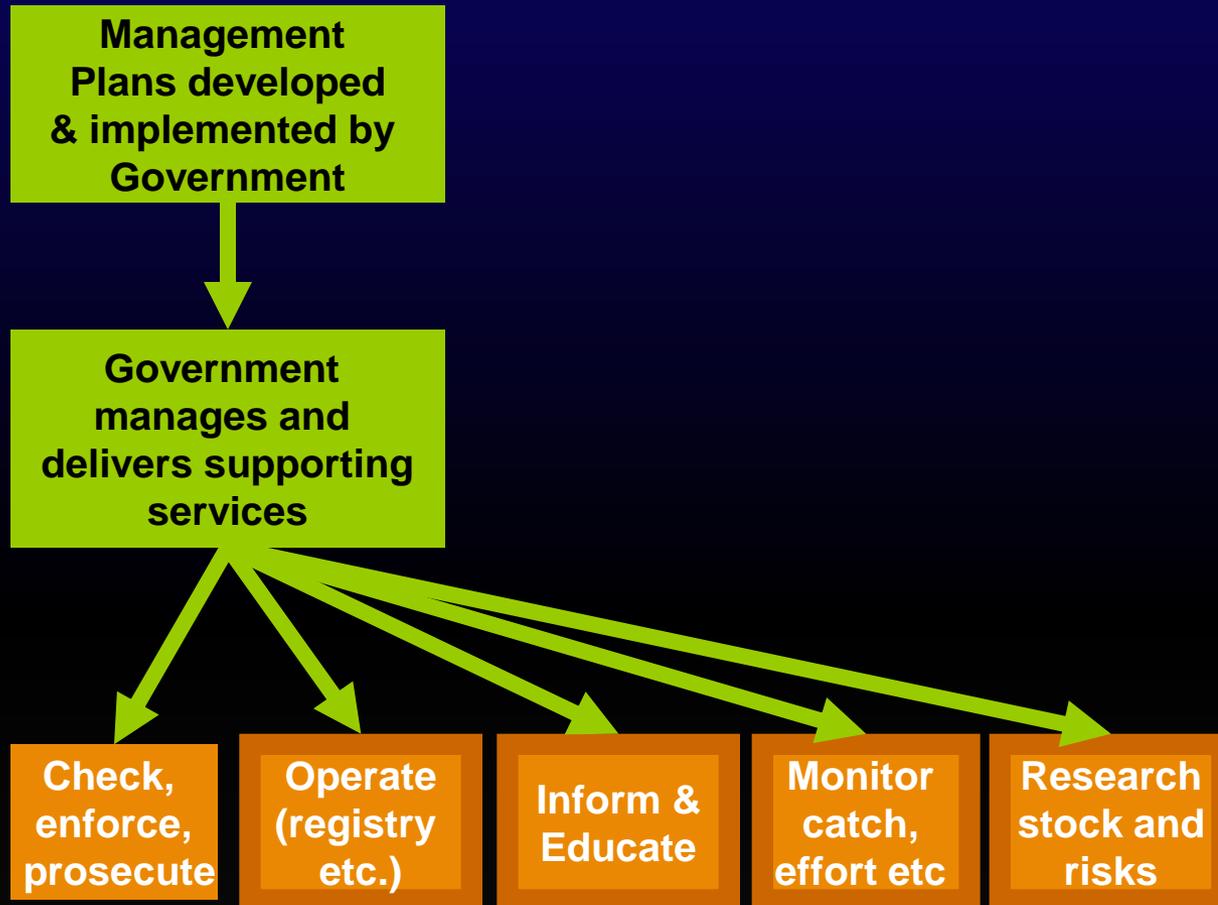


- New Zealand's largest fishery
 - 120,000 t per year

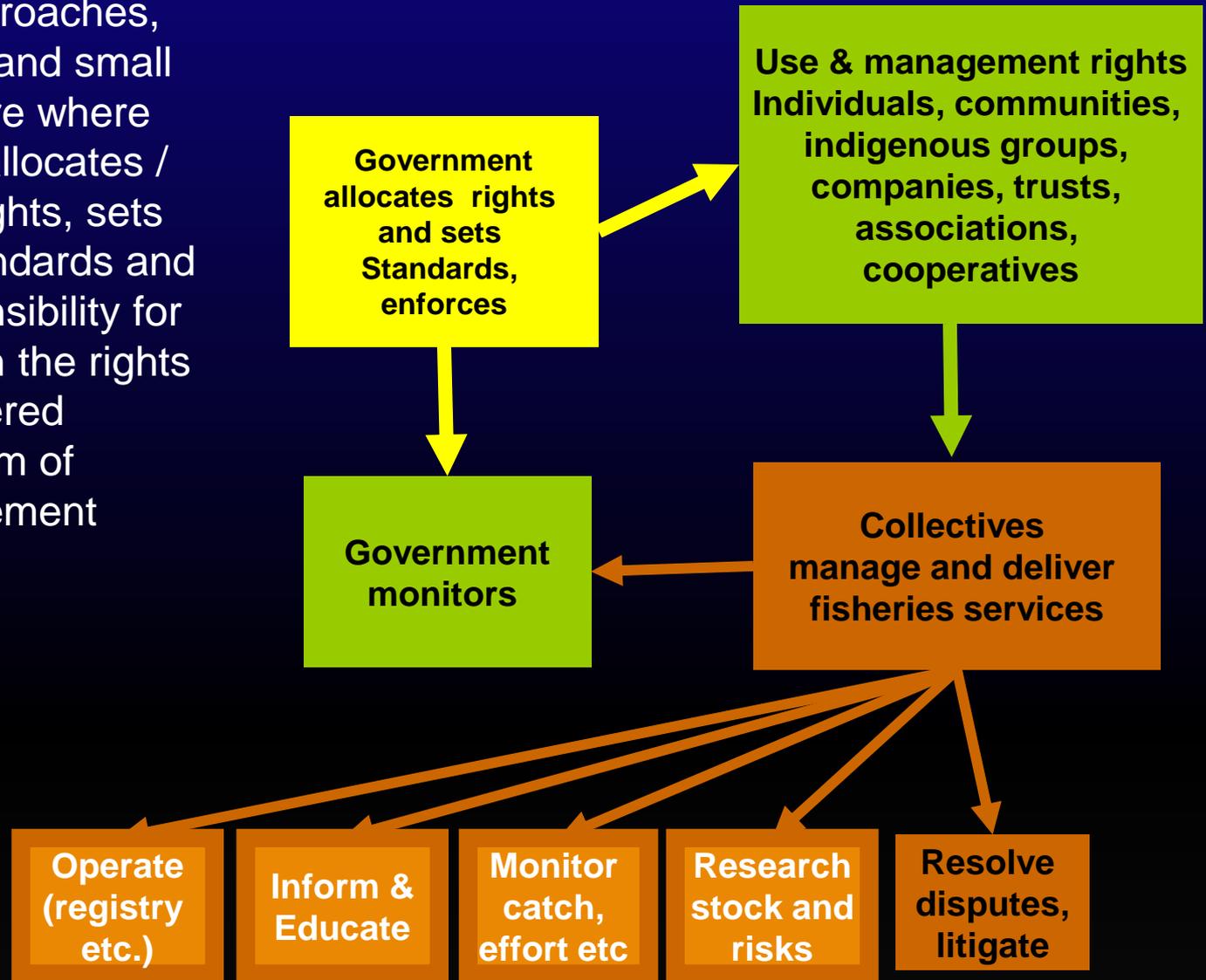


Determining responsibilities for
management

Government-based management (the conventional approach to fisheries management)



Best practice approaches, both in industrial and small scale fisheries, are where the government allocates / recognizes the rights, sets and enforces standards and leaves the responsibility for management with the rights holders administered through some form of collective arrangement



Successful management increasingly focused on development of cooperative systems (lease based, catch share based)

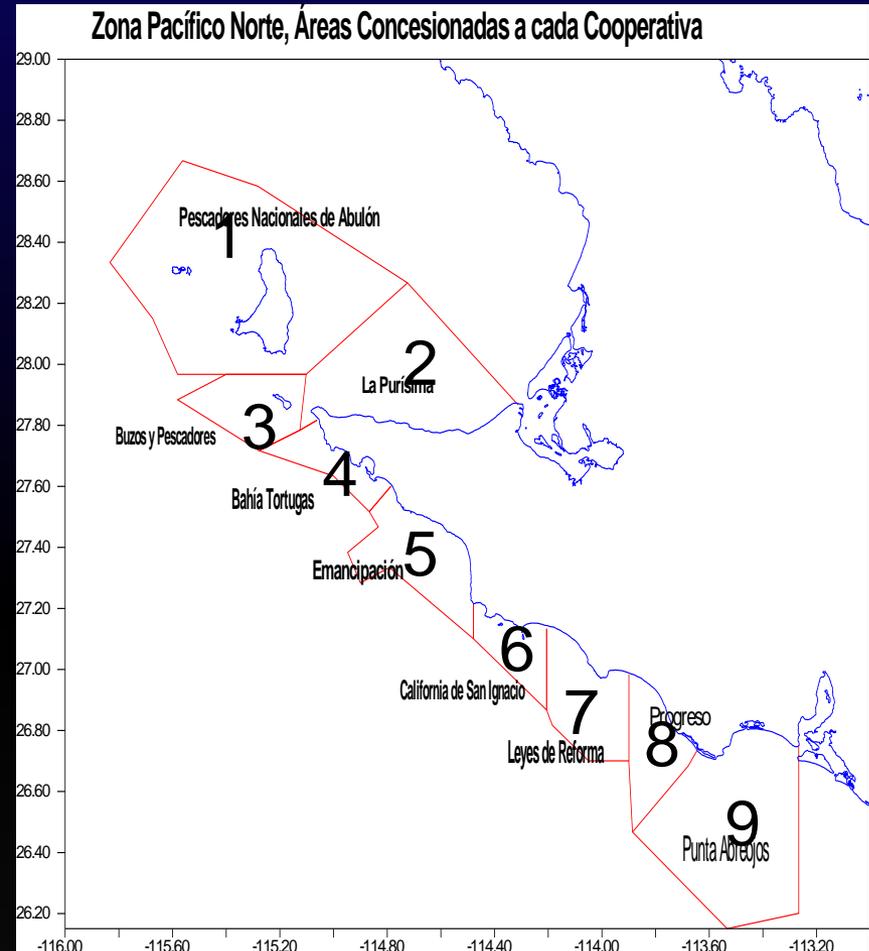
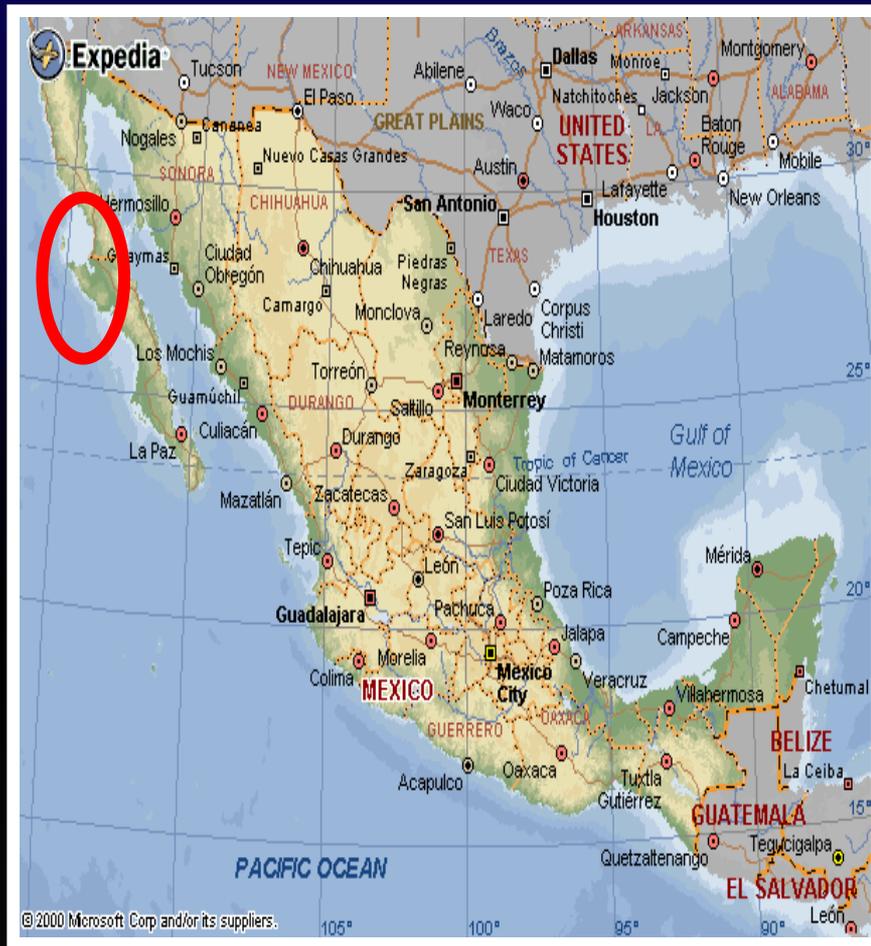
E.g. developing countries

- Chilean coops
- Mexican coops
- Korean cooperatives
- Bangladesh CBFM
- Lao / Cambodia CBFM
- Korean coops
-

E.g. developed countries

- Japanese coops
- NZ Maori trusts / Fish Management Co's
- Alaskan halibut coops
- Shetland fisheries coops
-

E.g. Mexico cooperatives Baja California-9



Locally managed by co-ops

- Each co-op has exclusive access to lobster in a TURF through a government lease for 20 years
- Each cooperative is made up technical staff and fishing members from nearby communities
- Limited gov't. presence; co-op sets the rules of fishing and monitors and enforces them

Successes are well-documented

- Lobster fishery generates \$2 million each year; new markets.
- The 9 co-ops pay lion's share of monitoring and enforcement
- The lobster fishery was given Marine Stewardship Council certification for sustainable practices

Delineating who are the beneficiaries of allocation (NZ Maori example)

What?

Cash, quota, and shares of parent company (Aotearoa Fisheries Limited)

- approx. NZ\$1 billion of assets

Who to?

57 Iwi (traditional Tribes)

680,000 beneficiaries

- 15% New Zealand pop



Allocation to Iwi

When?

- When Iwi have systems
 - governance arrangements
 - constitutions
 - structures
 - register of members
- When iwi members have ratified those systems; and
- When Te Ohu Kai Moana (Fisheries Commission) recognises that these meet Maori Fisheries Act requirements

Example

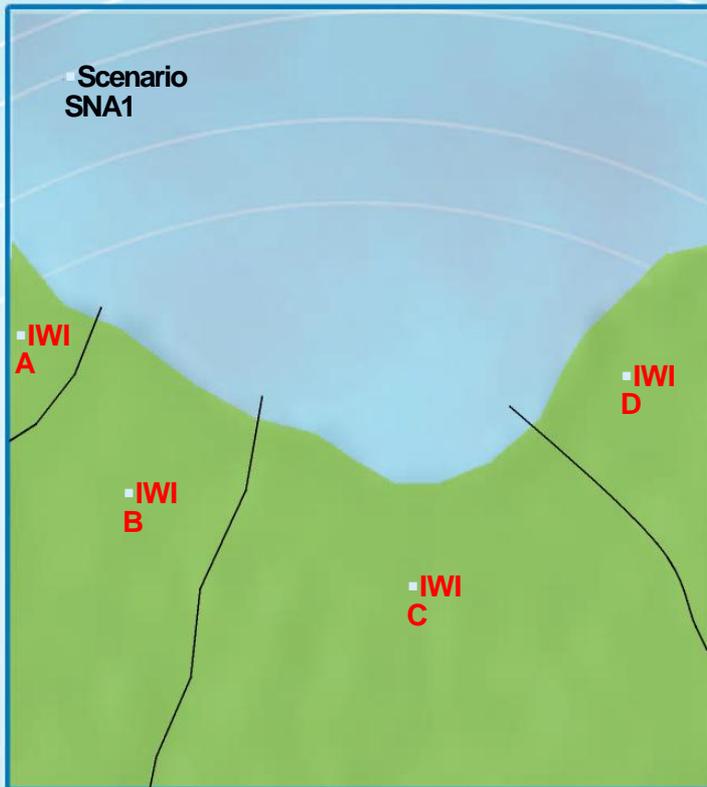
allocation to 21 Iwi in SNA 1



Te Aupouri
Ngai Kakoto
Ngati Kahu
Nga Puhi
Ngati Whatua
Hauraki
(Waikato)
Ngaiterangi
Ngati Ranginui
Te Arawa
Ngai Tai
Ngati Whare
Tuhoe

Ngati Kuri
Whaingaroa
Ngati Wai
Ngati Pukenga
Ngati Awa
Tuwharetoa
Whakatohea
Ngati Manawa
Te Whanau a Apanui

SNAPPER 1 Iwi quota



Formula for number of
quota shares for Iwi B

$$= \frac{[\text{Coastline length Iwi B}] \times 10 \text{ M shares}}{\text{Coastline length of SNA1}}$$

What can we recommend so far?

- Recognize government's motivation when choosing policy
 - Motives depend on basic political institutions and differ across countries.
 - Government is not a generic entity; consider different levels of government.
 - Assign management tasks to users where possible, especially when rule of law is weak.
- Assigning rights to users encourages stewardship and efficient resource use
 - Evidence of stewardship by ITQ quota owners and coops.
 - Evidence of increased efficiency in harvest.
- Reforming fisheries requires sequencing starting with the establishment of fisheries management units, determining roles and responsibilities and defining beneficiaries
- Research on performance should account for institutional differences.
 - Important for assessing performance of user-based vs. government monitoring, enforcement, sanctioning.
 - Case study and experimental work should be designed to include these factors.

Next steps

- “Currents of Change” project has case studies of reform process under way in Chile, Senegal, South Africa, Bangladesh, **and Indonesia**
 - Will document practices in a range of developing country political settings
 - Want to make case studies operationally relevant (e.g. contribute to COREMAP III)
 - Reports on case studies completed March 2012
 - Consolidated report completed June 2012
- “Fisheries Performance Indicator” project has case studies in many countries
 - **Prof Chris Anderson will tell more**