

Transdisciplinary Perspective on Ocean Governance

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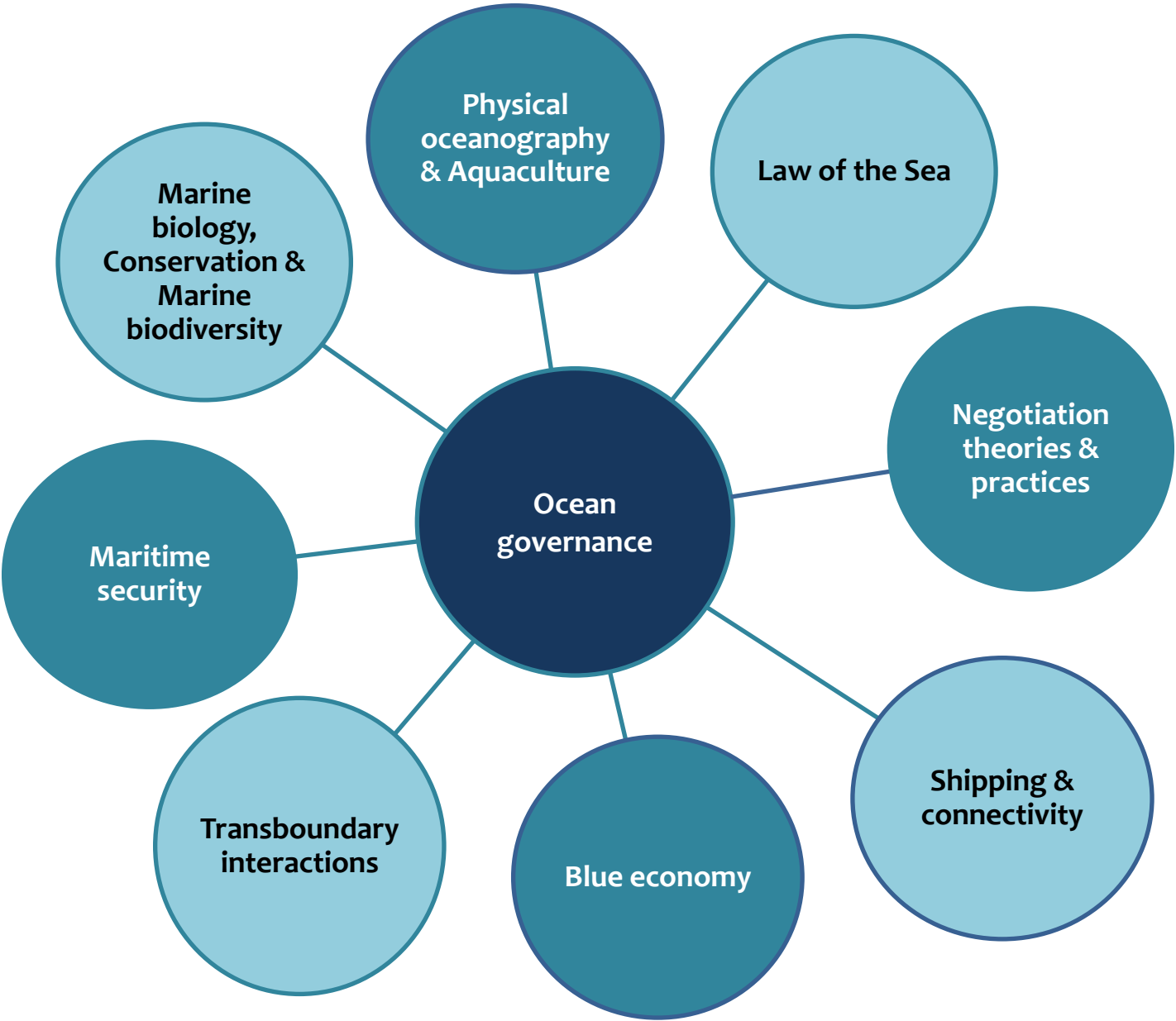


Three objectives

- Ocean sustainability as a wicked problem
- Governance vs. management
- Why and how of transdisciplinarity in ocean governance



Thematic areas covered in the training program



The background of the slide is an aerial photograph of the ocean. The water's color transitions from a deep, dark blue on the left side to a lighter, turquoise blue on the right side, suggesting a change in depth or a shallow reef area. The surface of the water is textured with small, white-capped waves.

The values and importance of the ocean









Ocean resources

- Physical (e.g. ocean basins, barrier islands, delta, coastal waters, etc.)
- Habitats (e.g. mangroves, wetlands, seagrass, submerged aquatic vegetation, coral reefs, sandy beach, etc.)
- Living and non-living (e.g. fish, marine and wildlife populations, oil & gas, minerals, etc.)
- Atmospheric
- Aesthetic
- Cultural
- Human

The background of the slide is an aerial photograph of the ocean. The water is a deep blue, transitioning to a lighter, turquoise blue towards the right side. The surface is covered in small, white, frothy waves, creating a textured appearance. The overall lighting is bright, suggesting a sunny day.

Concerns and challenges affecting ocean sustainability

Why should we care about the ocean?

- 80 percent of all life on the planet is found in oceans
- The oceans provide half of the planet's oxygen
- Blue carbon sinks (mangrove forests, seagrass beds, other vegetated ocean habitats) can sequester up to five times as much carbon as tropical forests
- More than 40 percent of the global population lives within 100 km of the coast
- 13 of the world's 20 megacities lie along coasts

Tokyo

Shanghai

Jakarta

Delhi

Seoul

Guangzhou

Beijing

Manila

Mumbai

New York

Shenzhen

Sao Paulo

Mexico City

Lagos

Osaka-Kobe-Kyoto

Cairo

Wuhan

Los Angeles

Dhaka

Moscow

Multiple uses of the ocean: growing demand and intensity

- Population growth and coastal development
- Resource exploitation (renewable / non-renewable, also for medicinal purposes)
- Tourism and recreation
- Aquaculture and ocean ranching
- Port, shipping and marine transportation
- Wind, tidal, thermal energy
- National security
- Etc.

Ocean: resilient or vulnerable?

- Oceans are fragile ecosystems (i.e., physically less stable than land);
- As everything drains to the sea, oceans are directly impacted by human activities on land and land-based pollution;
- Oceans are vulnerable to different change processes, including climate change, which disrupt the balance (e.g. ocean acidification); and
- Many of these changes are permanent or irreversible.

Ocean sustainability as a wicked problem

The background of the slide is an aerial photograph of the ocean. The water's color transitions from a deep, dark blue on the left side to a lighter, turquoise blue on the right side, suggesting a change in depth or perhaps a reflection of light. The surface of the water shows subtle textures and ripples.

Dilemmas in a General Theory of Planning*

HORST W. J. RITTEL

Professor of the Science of Design, University of California, Berkeley

MELVIN M. WEBBER

Professor of City Planning, University of California, Berkeley

ABSTRACT

The search for scientific bases for confronting problems of social policy is bound to fail, because of the nature of these problems. They are “wicked” problems, whereas science has developed to deal with “tame” problems. Policy problems cannot be definitively described. Moreover, in a pluralistic society there is nothing like the undisputable public good; there is no objective definition of equity; policies that respond to social problems cannot be meaningfully correct or false; and it makes no sense to talk about “optimal solutions” to social problems unless severe qualifications are imposed first. Even worse, there are no “solutions” in the sense of definitive and objective answers.

What is a wicked problem?

Rittel and Webber (1973): 'Dilemmas in a General Theory of Planning'

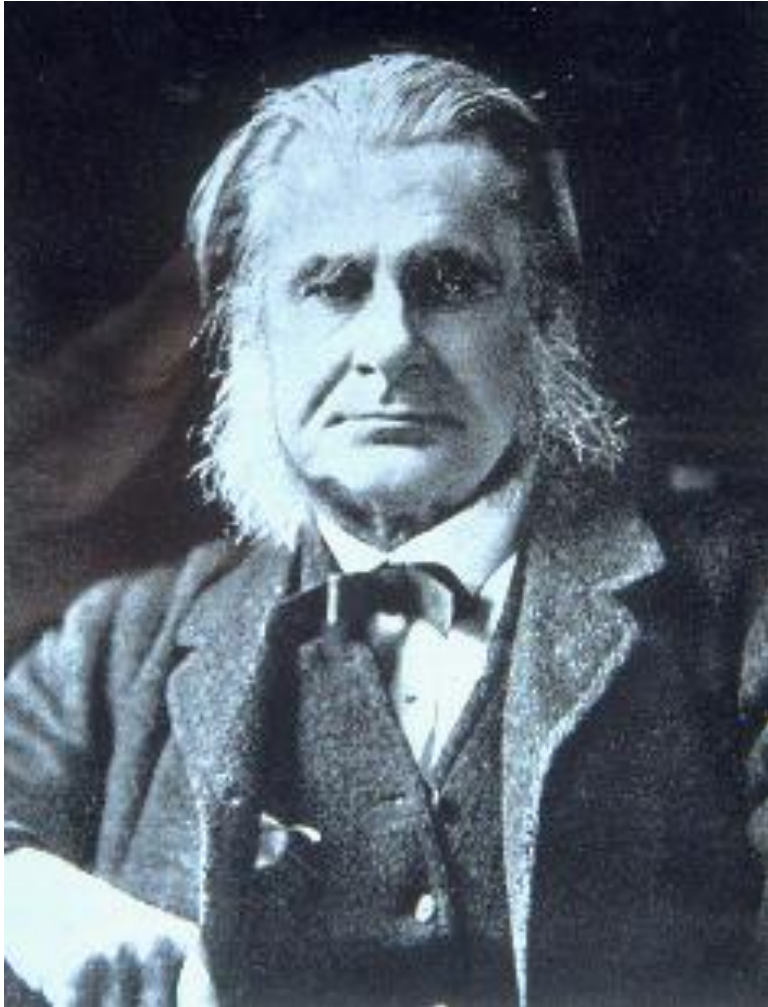
- 'Social problem' vs. 'Scientific problem'
- Difficult to define and differentiate from other problems
- No formula, no stopping rule
- No solution, only *resolution*
- All problems are unique
- Mistakes are costly



What makes ocean sustainability a wicked problem?

- Diversity, complexity, dynamics
- Scale and boundary issues
- ‘KUU’ problem
- Climate change makes ocean governance a ‘super wicked’ problem!
- Different (governance) images

Marine/fisheries ecosystem: image



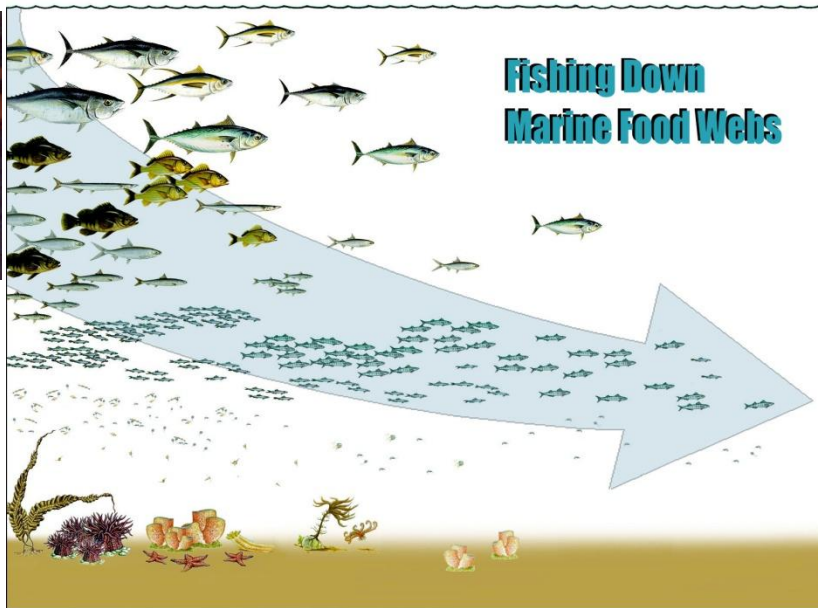
“I believe that the cod fishery, the herring fishery, the pilchard fishery, the mackerel fishery, and probably all the great sea-fisheries are inexhaustible; that is to say, nothing we can do seriously affects the number of fish”

Huxley (1883)

State of the world fisheries: Image Crisis/over-fishing vs. Healthy/sustainable



*Pauly et al.
(Science,
1998)*

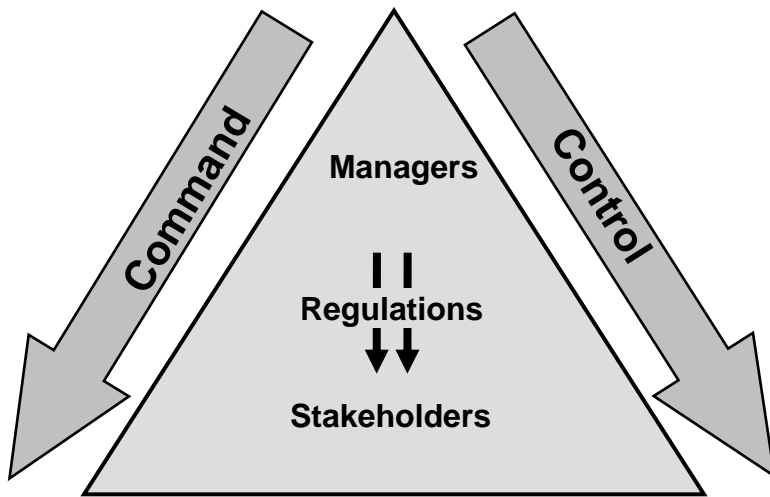


Apocalypse Forestalled: Why All the World's Fisheries Aren't Collapsing

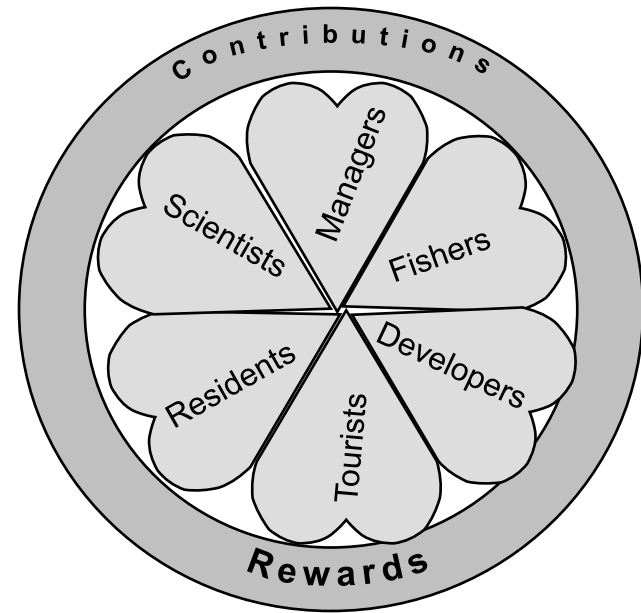
By Ray Hilborn, Professor, Aquatic and Fishery Sciences, University of Washington

*Hilborn (Science
Chronicle 2010)*

Images of the governing system



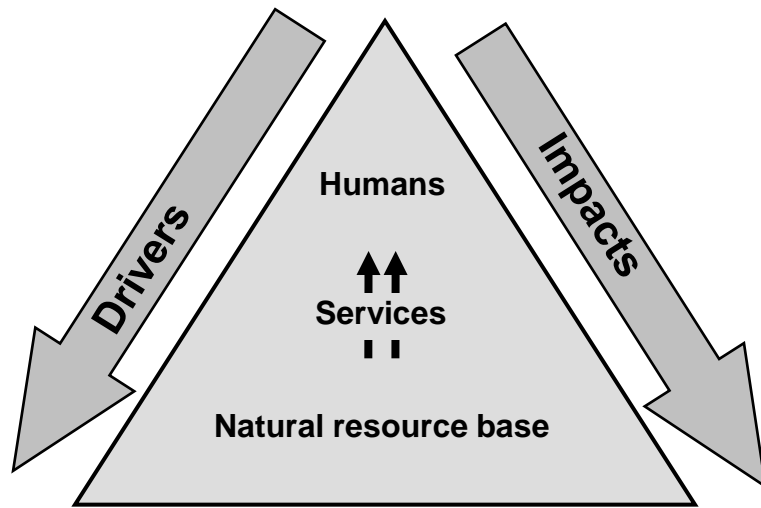
Conventional



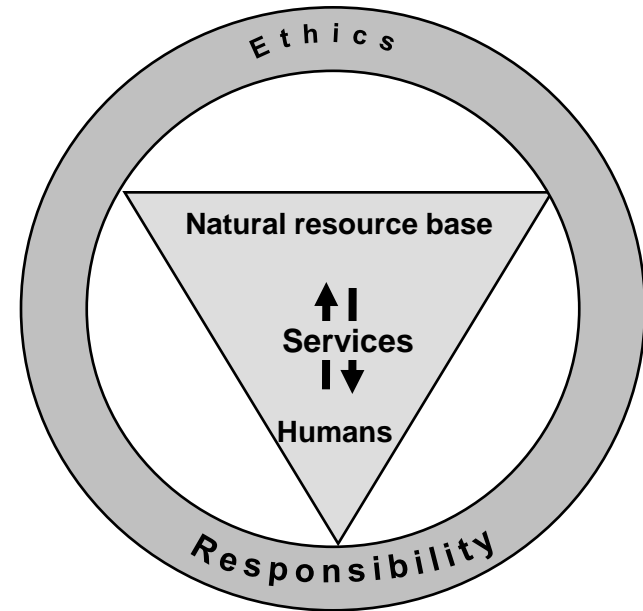
Alternative

Jentoft et al. (2010)

Images of the ocean as a system-to-be-governed



Conventional

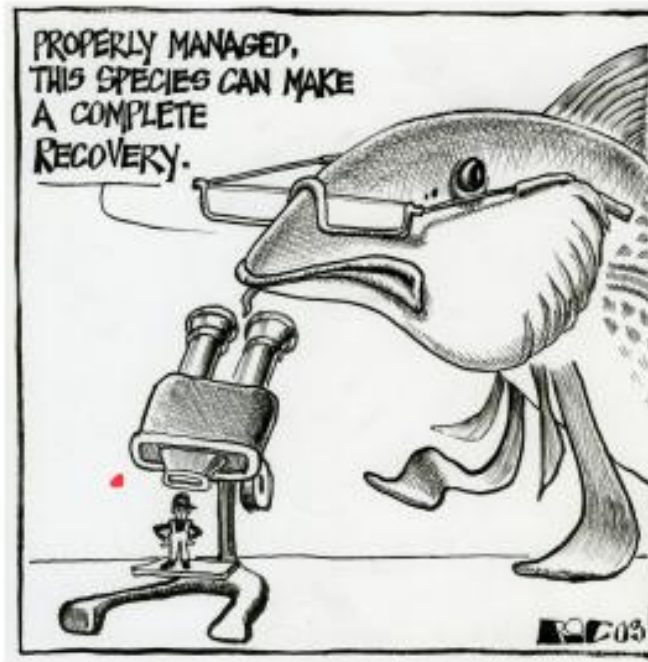


Alternative

Bundy et al. (2008)

Images of the governing system about the system-to-be-governed

Complex Fish, Simple People



learned?

Fishermen haven't changed much over the last 50 years, and won't change much for the next 500 either (Larkin 1988)

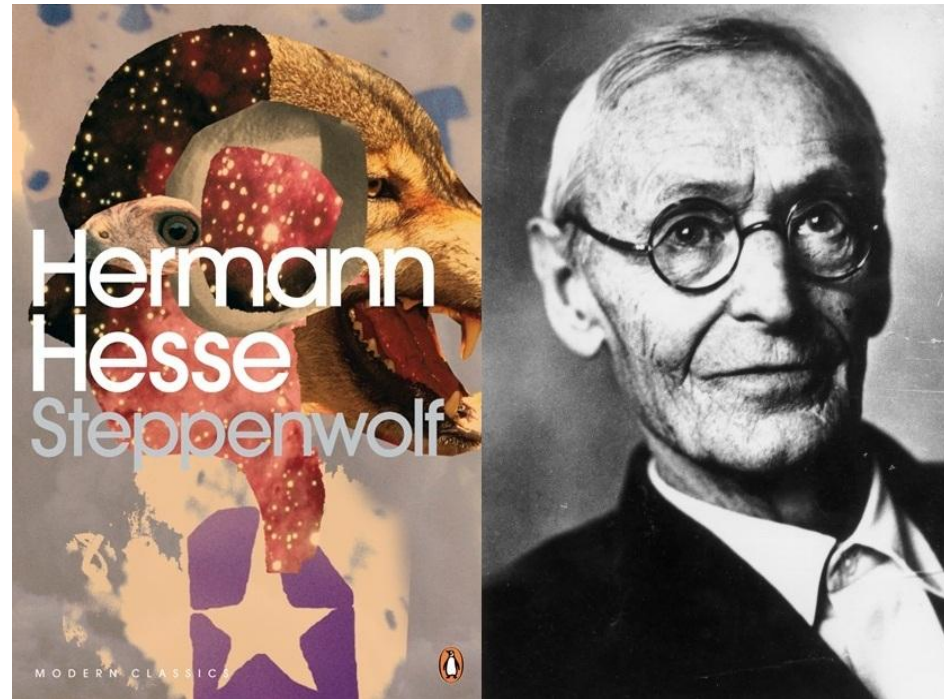
FISH and

Managing fish

Ray Hilborn

Words, languages, concepts and images

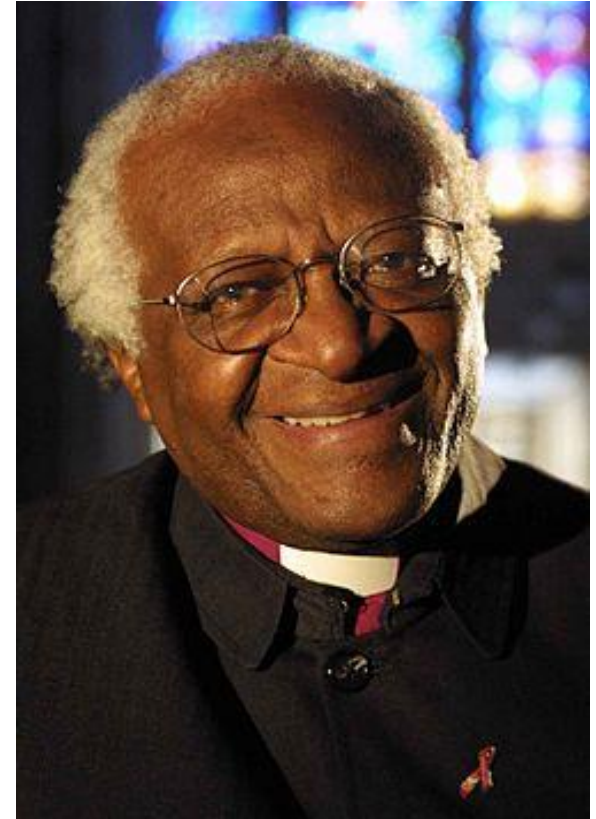
“Just imagine a garden with hundreds of different trees, thousands of different flowers, hundreds of different fruits and herbs. Now, if the only botanical distinction the gardener knows is that between edible things and weeds, he will not know what to do with nine tenths of his garden. He will uproot the most enchanting flowers, fell the finest trees, or at any rate detest and frown upon them.” (Steppenwolf, 1927, p. 68).



Archbishop Desmond Tutu

“Perhaps the starting point is to reflect on **the inadequacy of language**. The word ‘adaptation’ has become part of the standard climate change vocabulary. But what does adaptation mean? The answer to that question is different things in different places.”

“Adaptation is becoming a euphemism for social injustice on a global scale”



Ocean governance is a wicked problem

Some basic definitions

World Bank's definition

Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them.

Global Governance's definition

Governance refers to mechanisms, processes and institutions through which public and private sectors articulate their interests, exercise their rights, meet their obligations and mediate their differences in order to make decisions affecting society.

(Source: Rosenau, 1999)

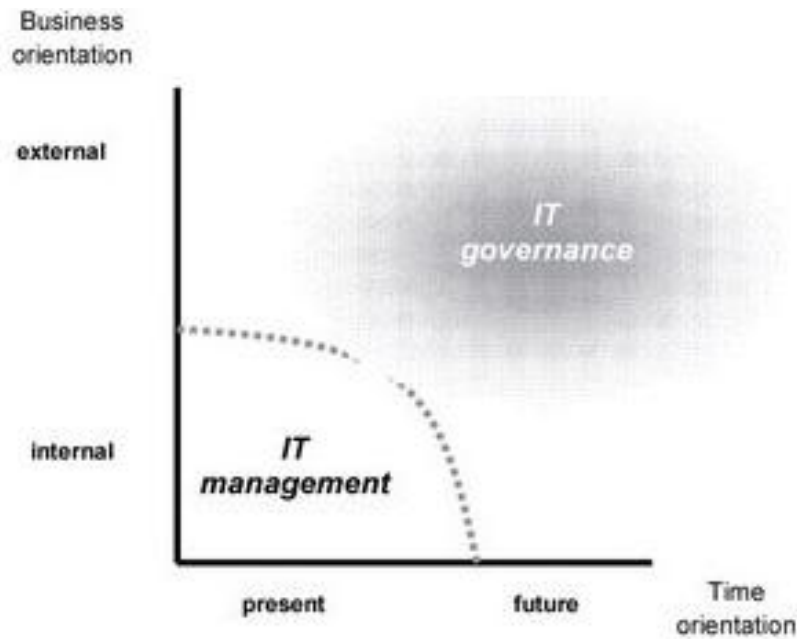
Governance vs. Management

(1) Governance > management

(2) Governance > government



Governance vs. Management



IT management is focused on the effective and efficient internal supply of IT services and products and the management of present IT operations. IT governance, in turn, is much broader and concentrates on performing and transforming IT to meet present and future demands of the business (internal focus) and business customers (external focus).

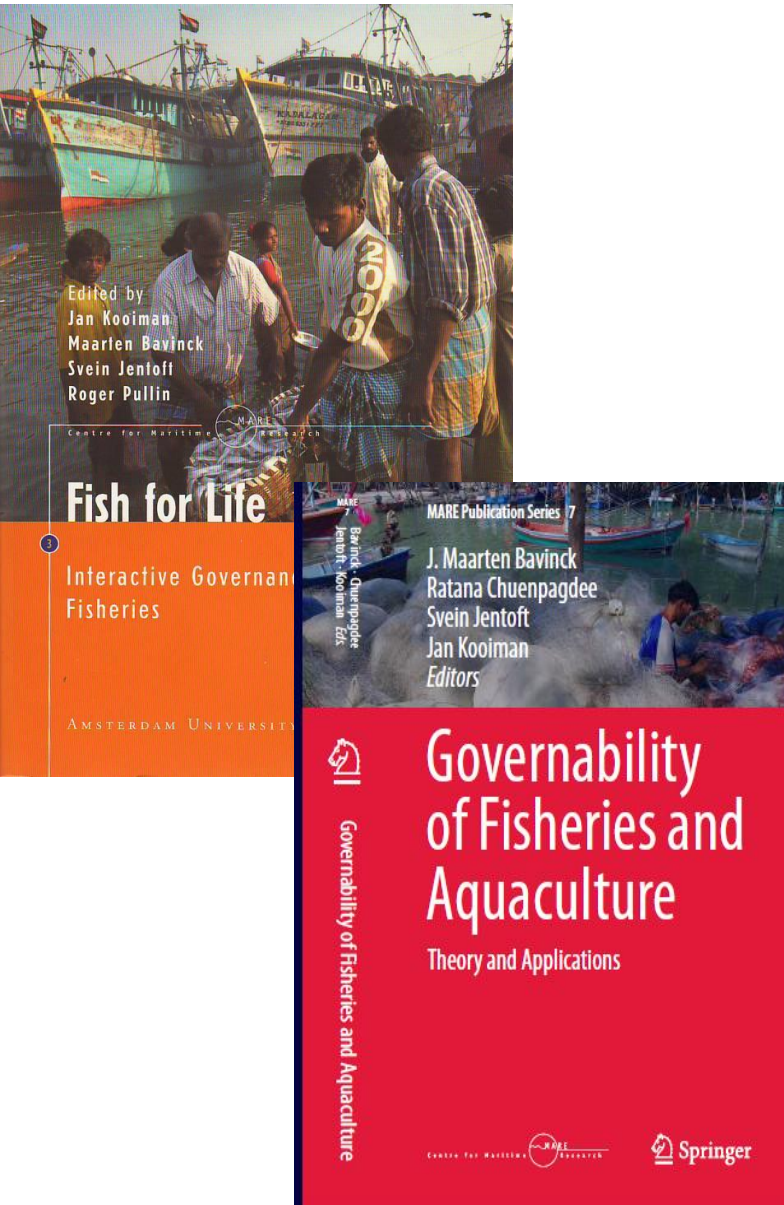
Types of governance

- Participatory
- Collaborative
- Adaptive
- Interactive

Mode of governance

- Hierarchical (top-down)
- Co-governance
- Self-governance
- Mixed

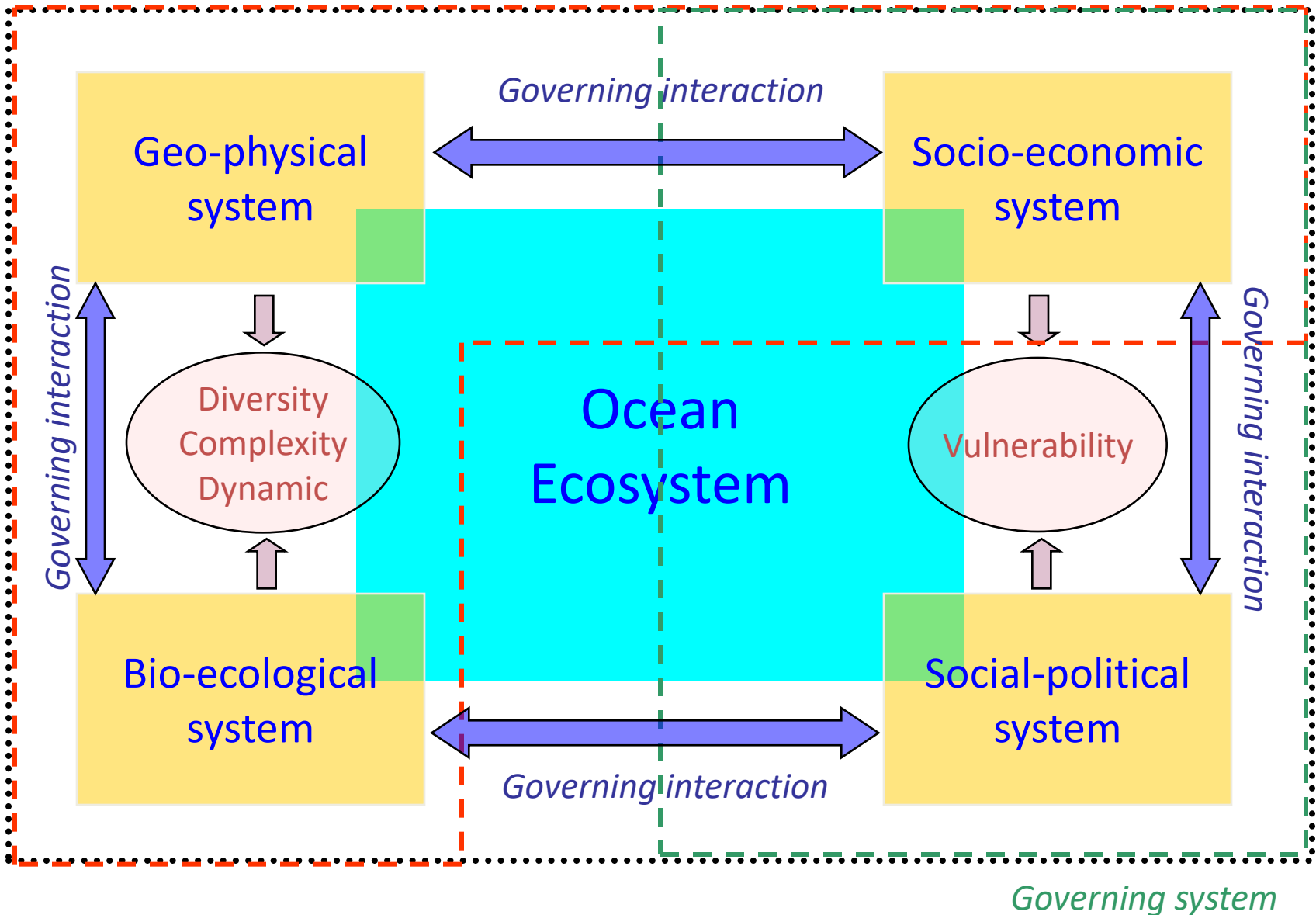
'Interactive Governance'



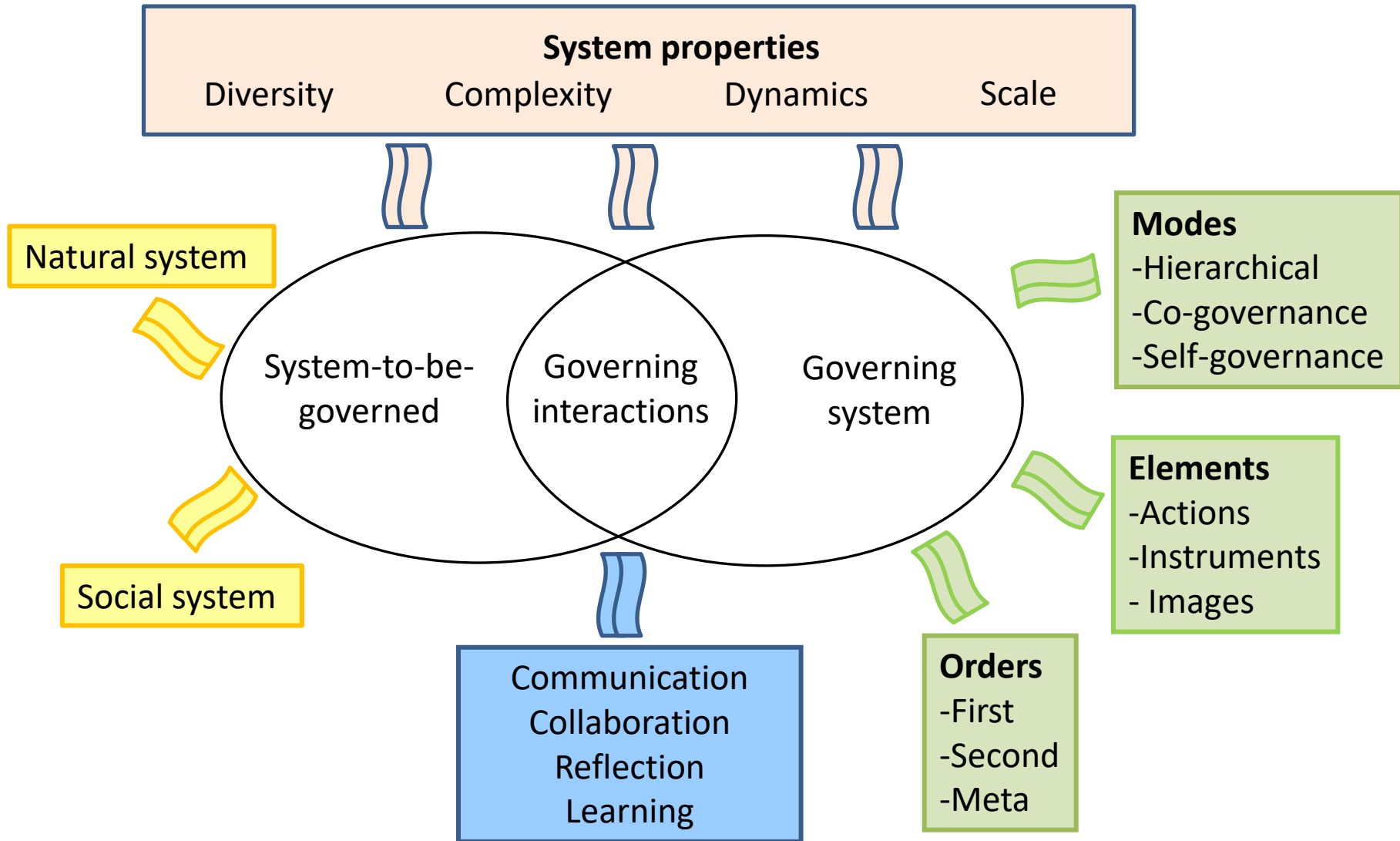
- *“The whole of public as well as private interaction taken to solve societal problems and create societal opportunities. It includes the formulation and application of principles guiding those interactions and care for institutions that enable them.”* (Kooiman et al. 2005:17)
- Emphasizes interactions between public and private sectors in solving problems and creating opportunities (*1st order*), in the design and maintenance of institutions (*2nd order*), and in formulation and application of principles guiding those interactions (*meta-order*) (Chuenpagdee 2011).

Systems-to-be-governed

Interactive Governance Model



Interactive governance model





**Transdisciplinary perspective in
ocean governance**

Problems with technical fixes



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Marine Policy 30 (2006) 534–543

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POLICY

www.elsevier.com/locate/marpol

Painting the floor with a hammer: Technical fixes in fisheries management

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^a*Institute for Fisheries Management and Coastal Community Development (IFM), The North Sea Centre, 9850 Hirtshals, Denmark*

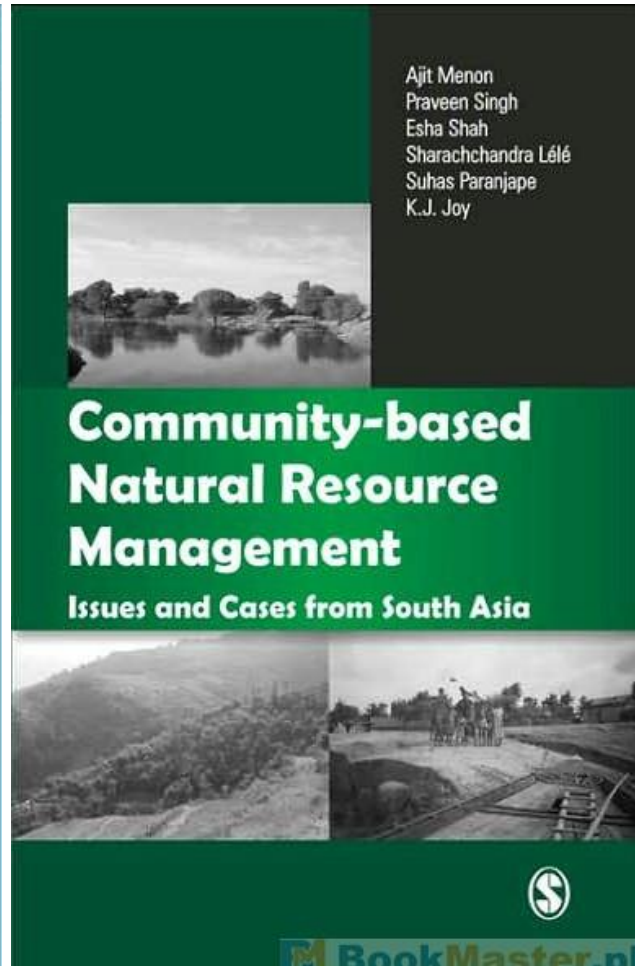
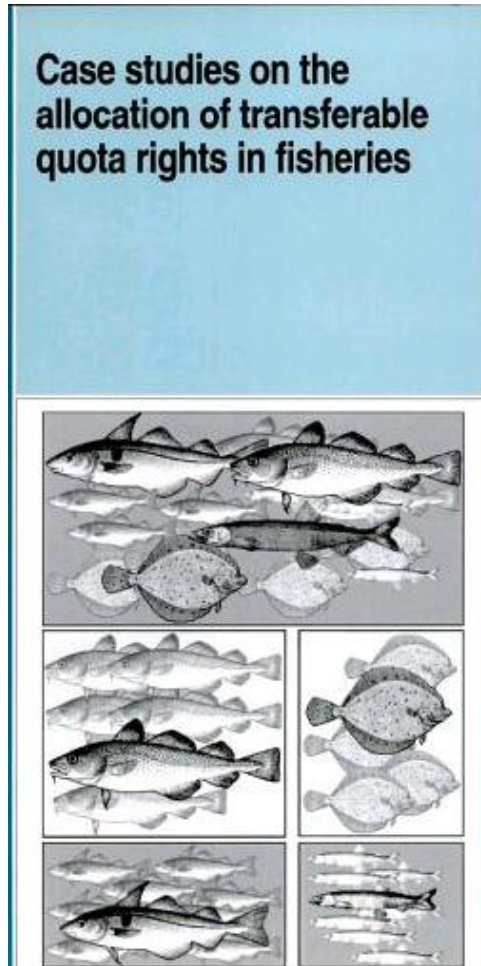
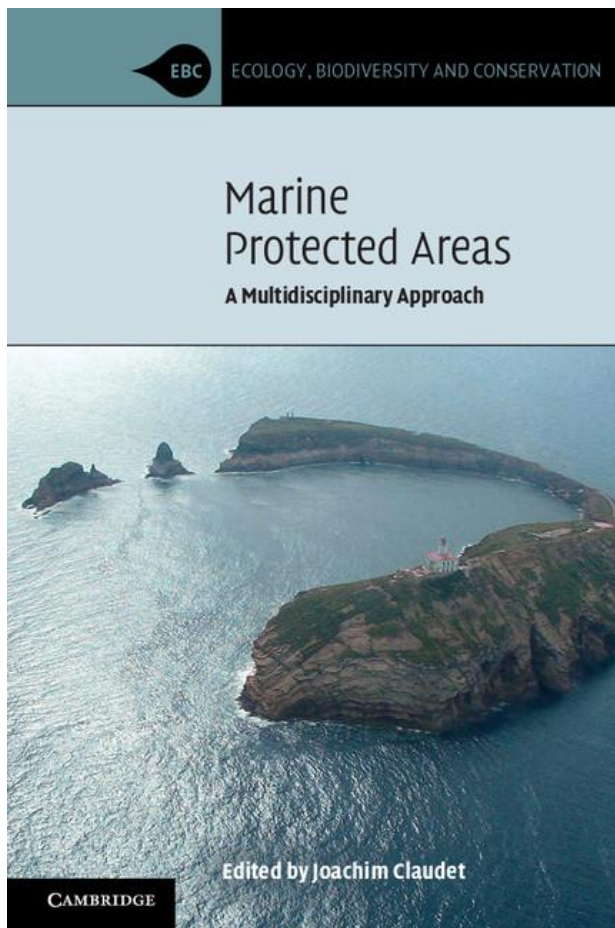
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^d*The Norwegian College of Fishery Science, University of Tromsø, Norway*

Received 26 May 2005; accepted 24 July 2005

Classic technical fixes: MPAs, ITQs, CBM

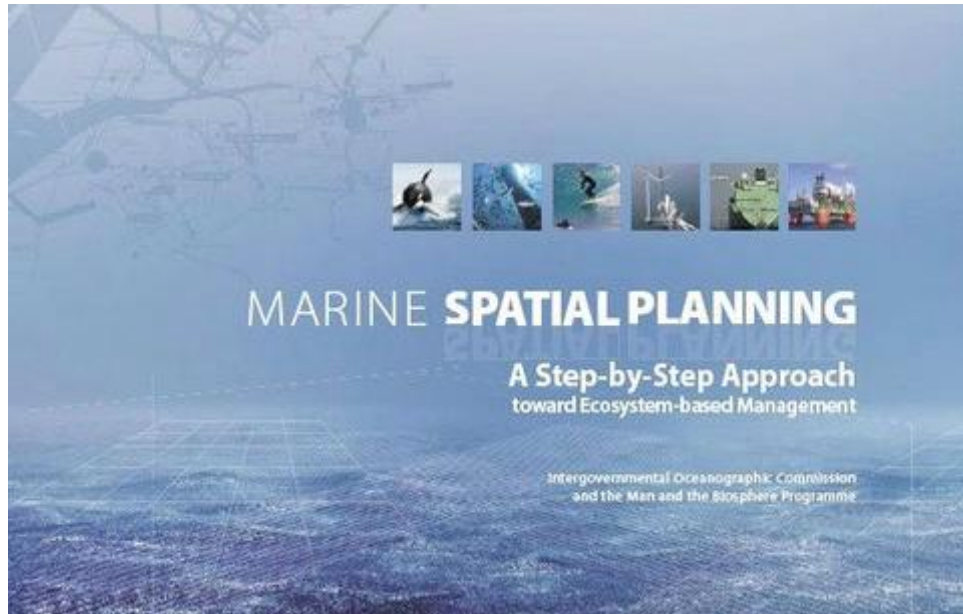
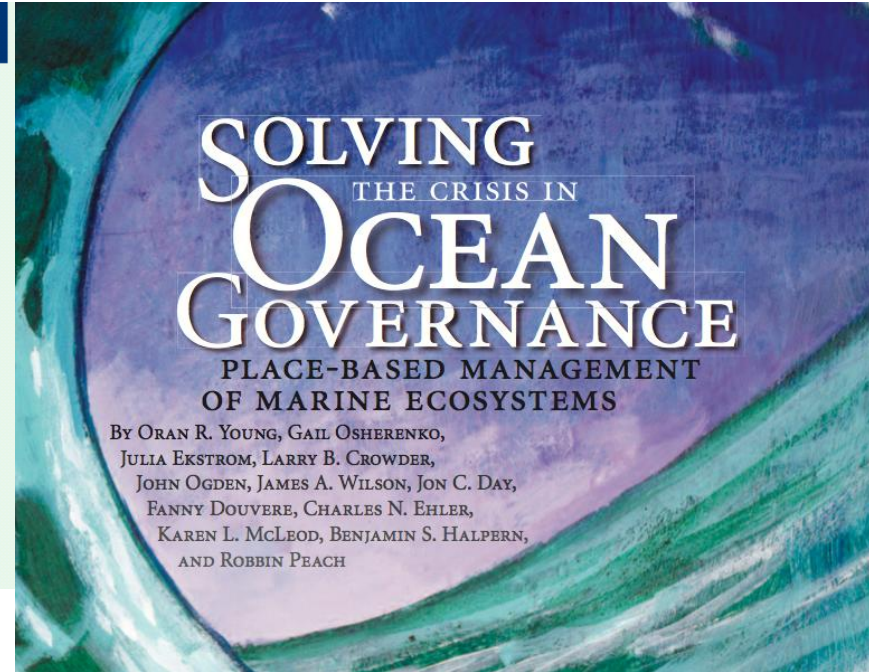


Contemporary fixes

Agenda 21 (1992)

Ecosystem Approach and Integrated Management

- ◆ Provide for a cross-sectoral integrated policy and decision-making process, including national ICM guidelines, based in the precautionary approach, and systematic observation of the marine environment.
- ◆ Establish, or where necessary strengthen, appropriate coordinating mechanisms and legal and regulatory frameworks for integrated management
- ◆ Support the role of international cooperation and coordination on a bilateral, regional, or global basis in supporting and supplementing national efforts to promote integrated management and sustainable development of coastal and marine areas.



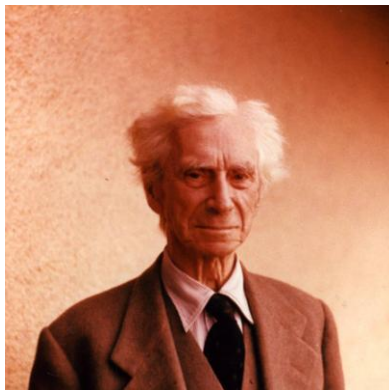
EBM
EAF
ICM
MSP

The trendy fix for ocean sustainability



Why a transdisciplinary perspective?

- Some issues/problems are too complex to address from one dimension or a single perspective;
- Scientists may not have all the answer and may require inputs from ‘lay’ experts;



“Even when the experts all agree, they may well be mistaken”

Bertrand Russel (2004) Sceptical Essay

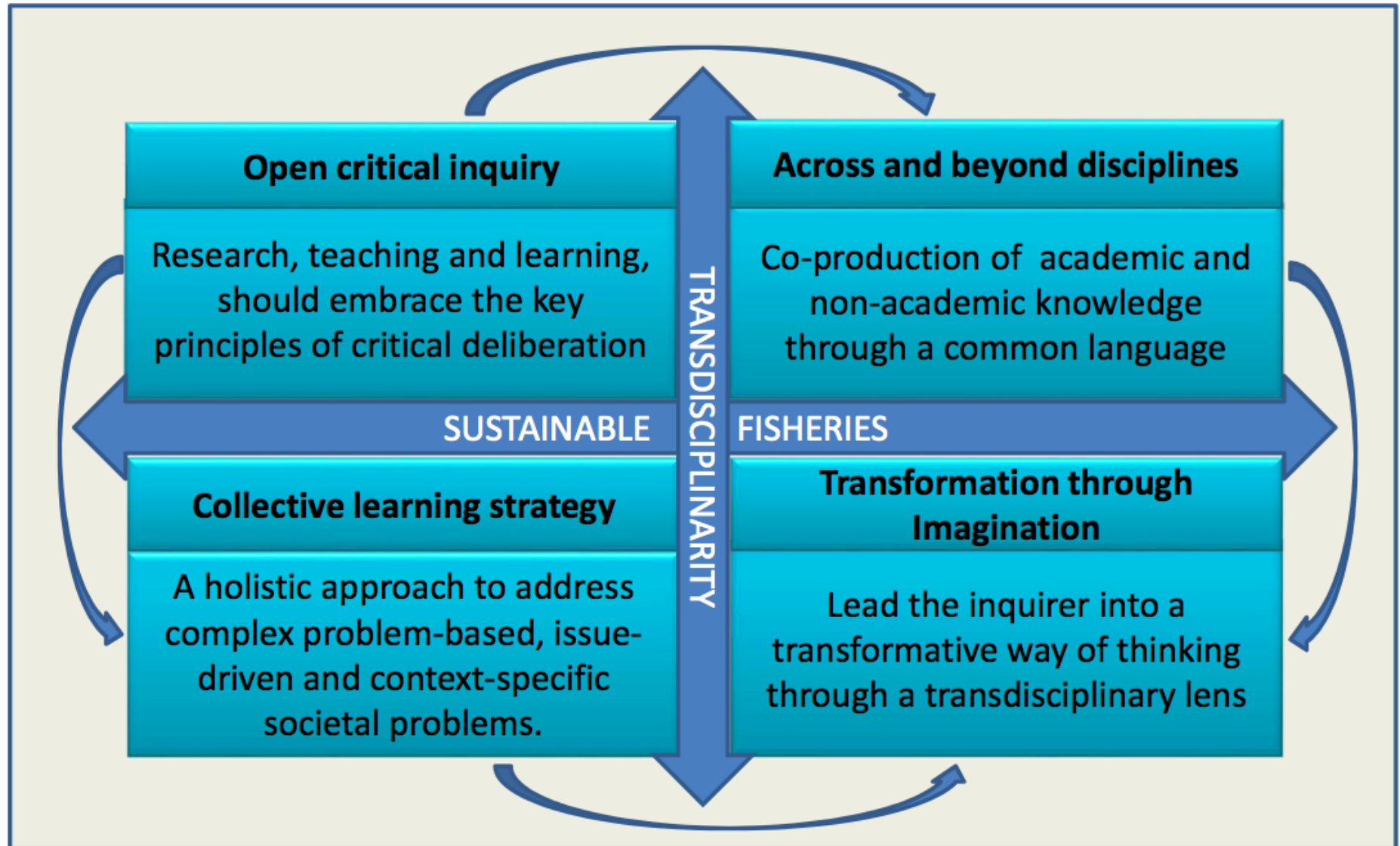
Why a transdisciplinary perspective?

- Some issues/problems are too complex to address from one dimension or a single perspective;
- Scientists may not have all the answer and may require inputs from 'lay' experts;
- Collaborative/participatory process may lead to better outcomes;
- New theory/methods/tools, or new disciplines, may be necessary.

Key points about transdisciplinarity

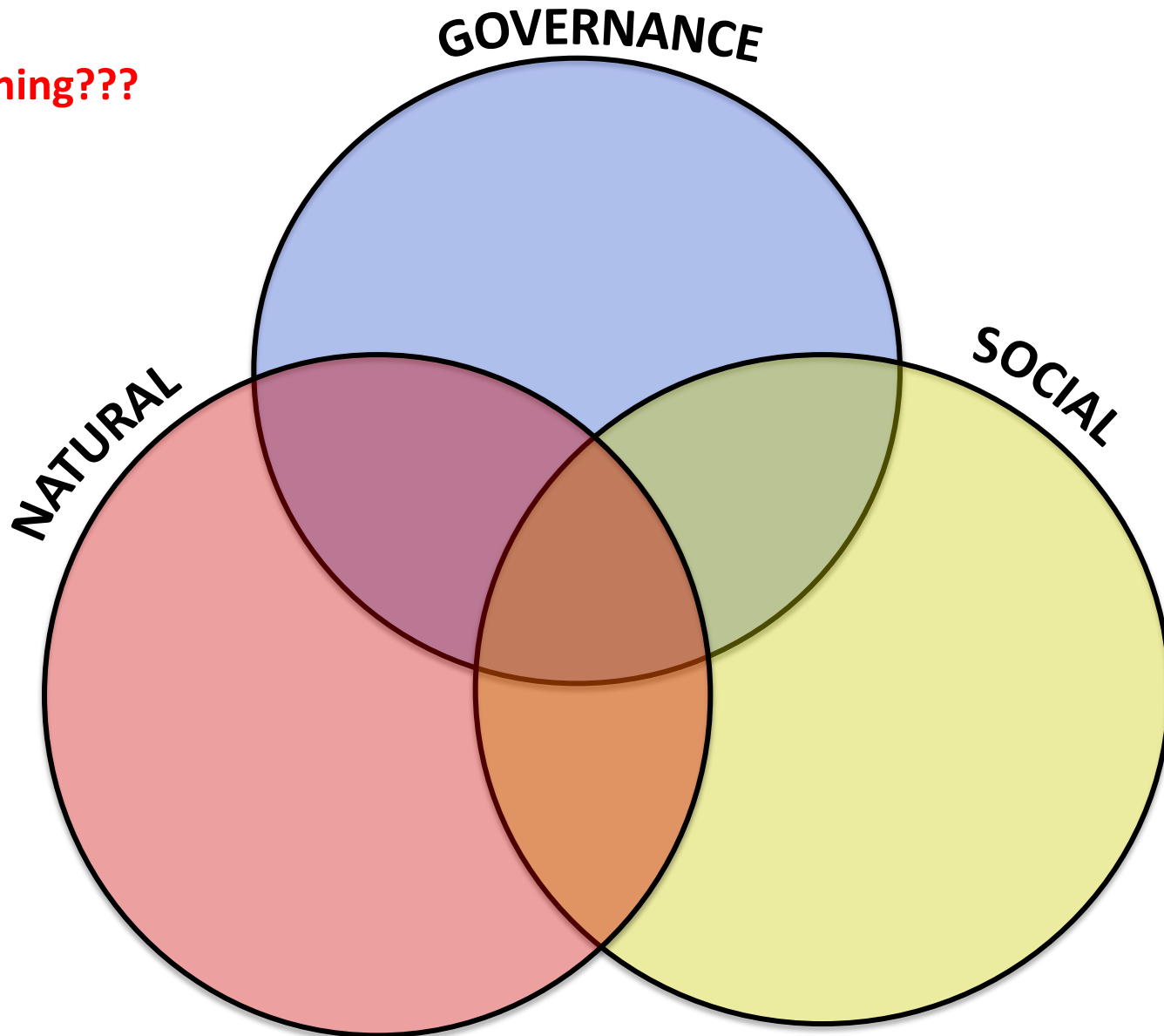
- Transdisciplinary perspective as an **option**, not a solution;
- Research and policy that go between, across and beyond certain disciplines or knowledge 'all at once' in order to create a **holistic** approach to address complex societal problems;
- Problem-based, issue-driven;
- It may result in science that not only informs, but also **transforms** society;
- It can be close or '**open**', i.e. involving non-academics in the co-identification of the problem, co-design and co-implementation of possible options; and co-production of knowledge.

Transdisciplinary process facilitating knowledge integration and fostering interaction

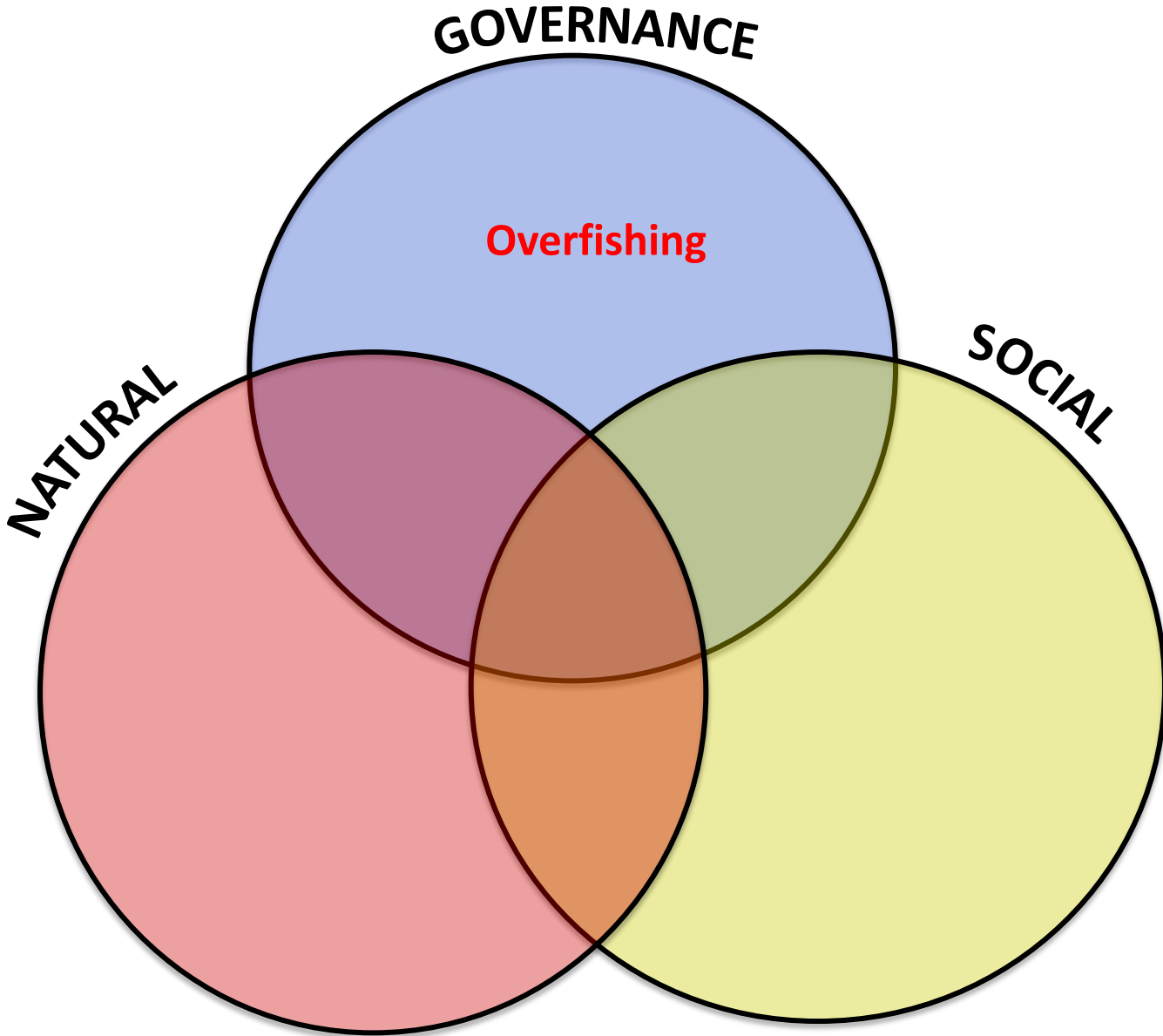


Identifying fisheries problems through transdisciplinary lens

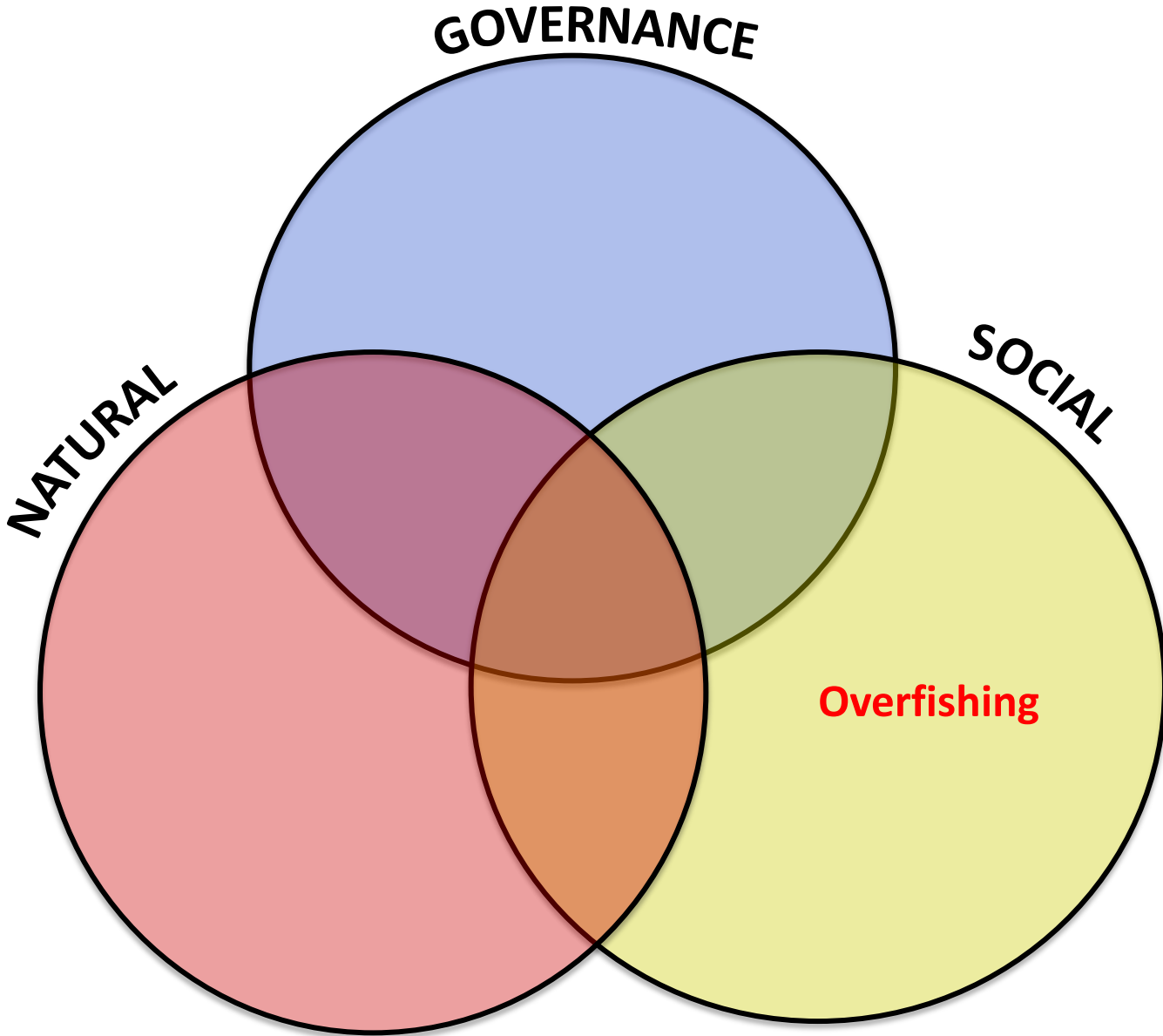
Overfishing???



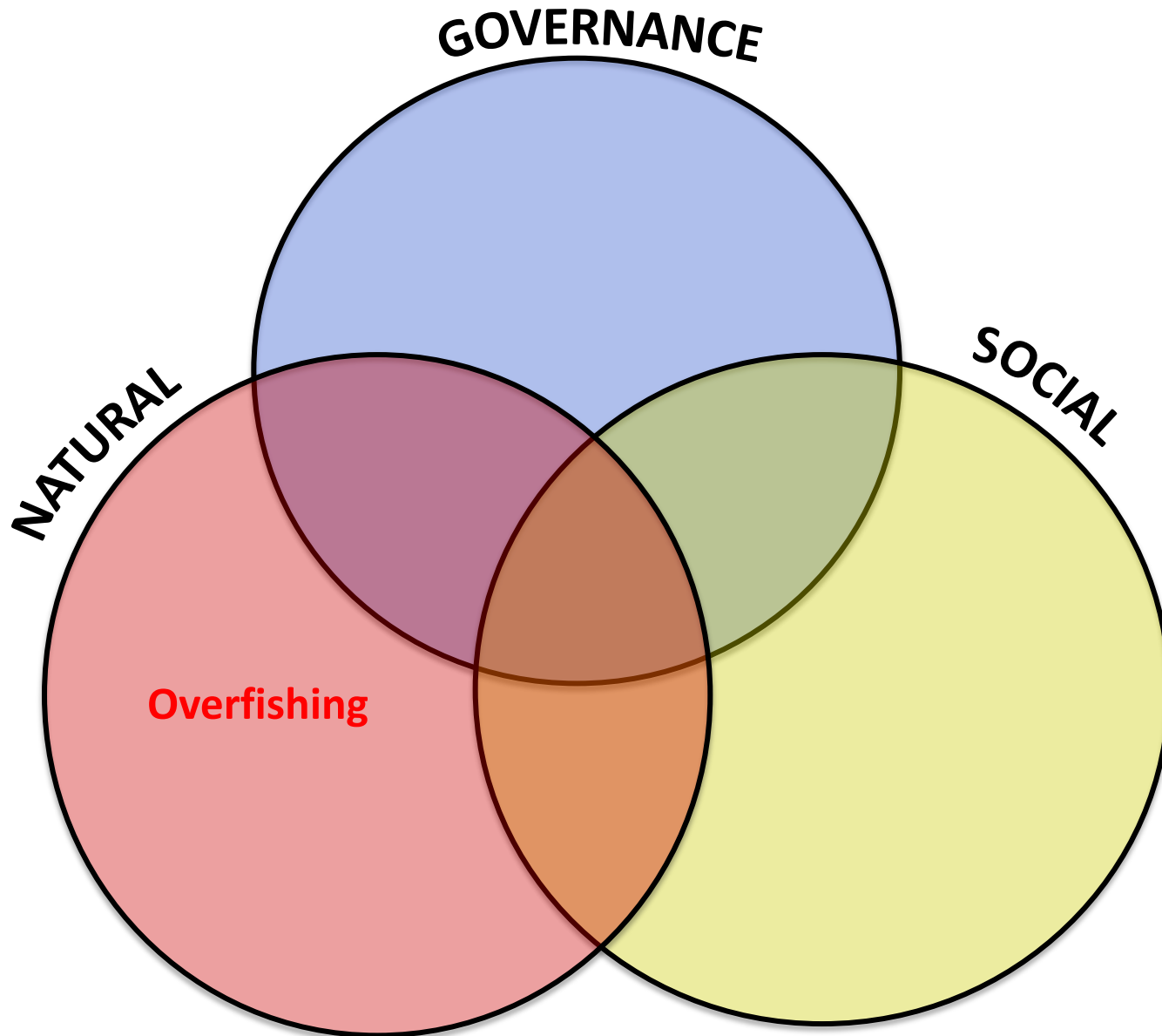
Identifying fisheries problems through transdisciplinary lens



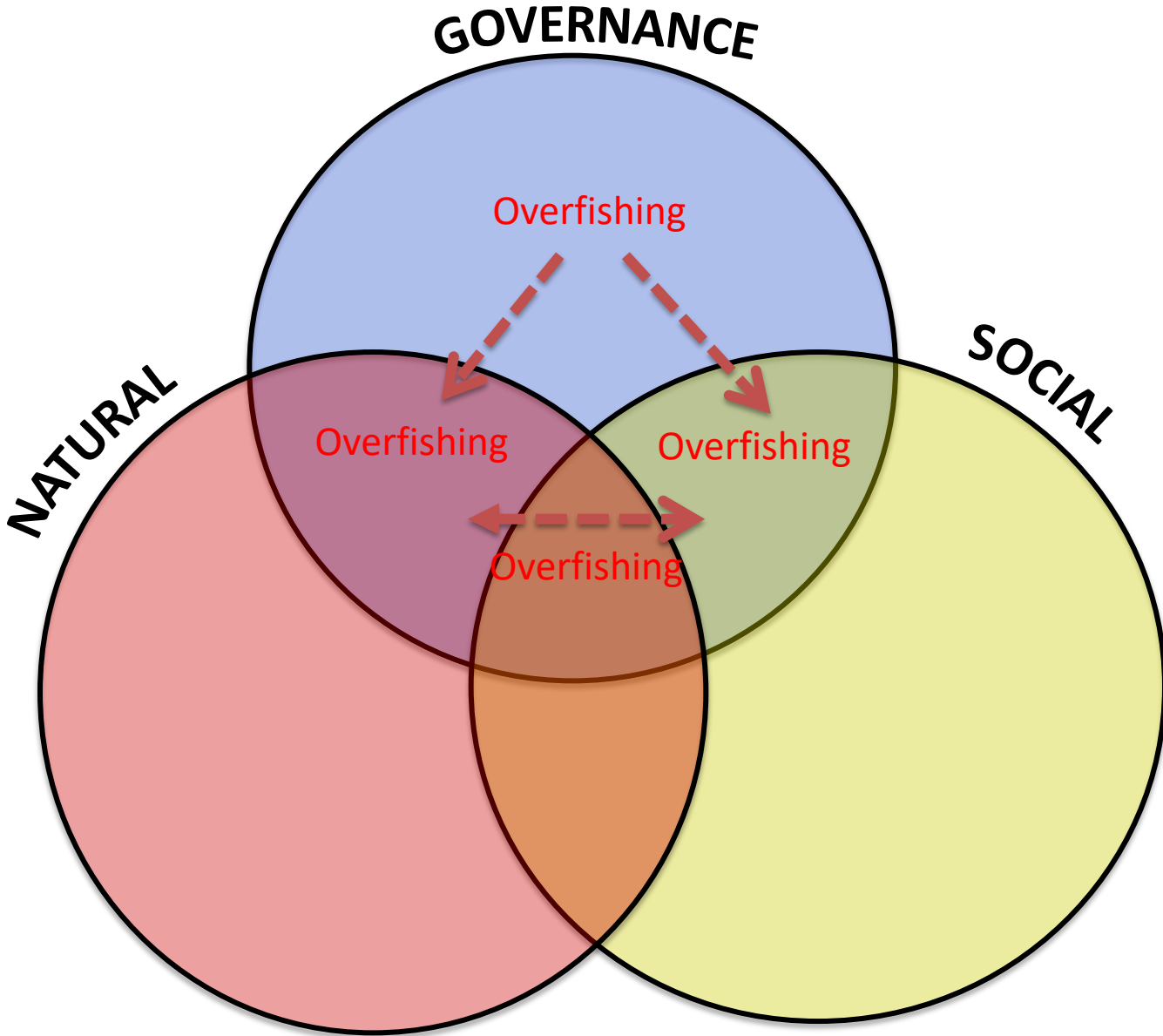
Identifying fisheries problems through transdisciplinary lens



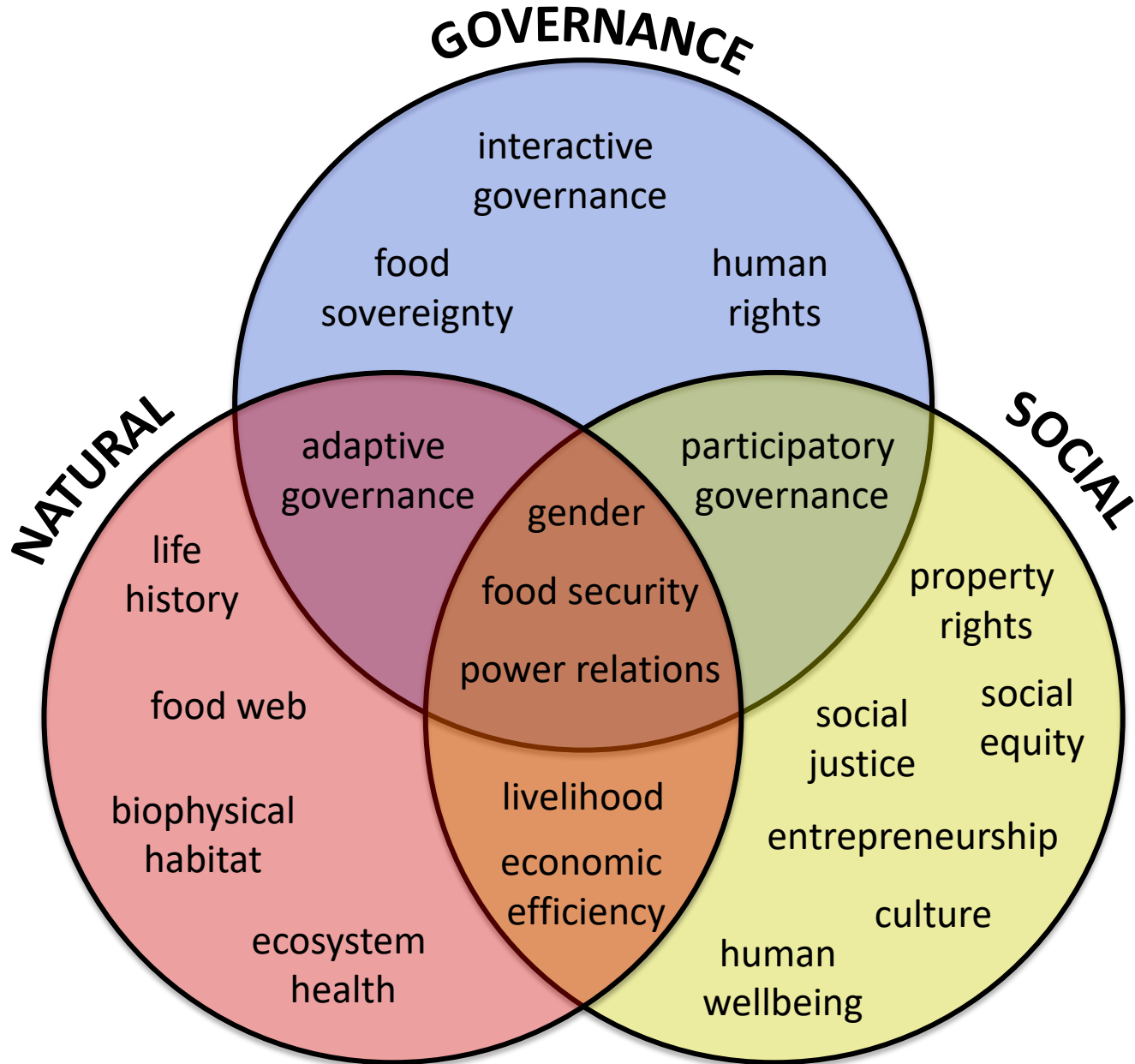
Identifying fisheries problems through transdisciplinary lens



Identifying fisheries problems through transdisciplinary lens



Topics to include in transdisciplinary research and training



Difference between transdisciplinarity and others

Approach	Framing	Process	Outcomes
Multidisciplinary	Individual disciplinary views of one problem	Includes multiple academic disciplinary views	Several disciplinary specific solutions to one problem

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Difference between transdisciplinarity and others

Approach	Framing	Process	Outcomes
Multidisciplinary	Individual disciplinary views of one problem	Includes multiple academic disciplinary views	Several disciplinary specific solutions to one problem
Interdisciplinary	Examine interactions between disciplines	Integrates multiple academic disciplinary views	Solutions draw on the integration of several academic disciplines
Transdisciplinary	Co-identify one problem from all disciplines	Bridges and transcends disciplines	Solutions integrate diverse knowledge and problem solving is recognized as an iterative and on-going process

Transdisciplinarity challenges

- Direction/process uncertain: there is no one way of doing it;
- Outcome uncertain: may not succeed; 'prepare for failure' / accept 'realism' (Visser, 2004);
- Risk being shunned for 'watering down' the disciplines; efforts not appreciated;
- Risk being alienated for breaking the disciplinary assumptions, codes and norms;
- Risk being seen as a 'fix-all'
- What if there is no real scientific need or value-added?

Who to engage in transdisciplinarity for ocean sustainability?

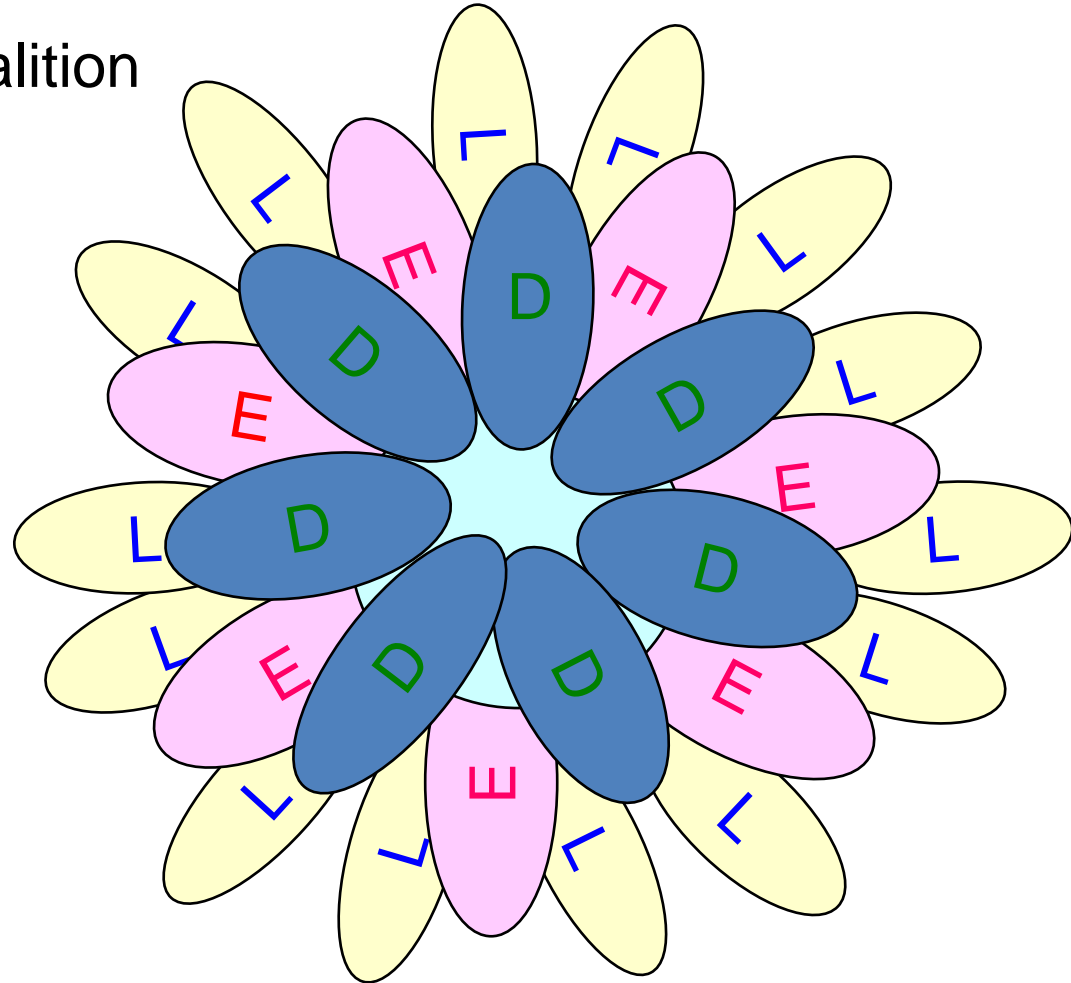
Stakeholders as a political coalition

Stakeholder category	D	E	L
Urgency	X	X	X
Legitimacy	X	X	(X)
Power	X	(X)	(X)

D (Definitive)

E (Expectant)

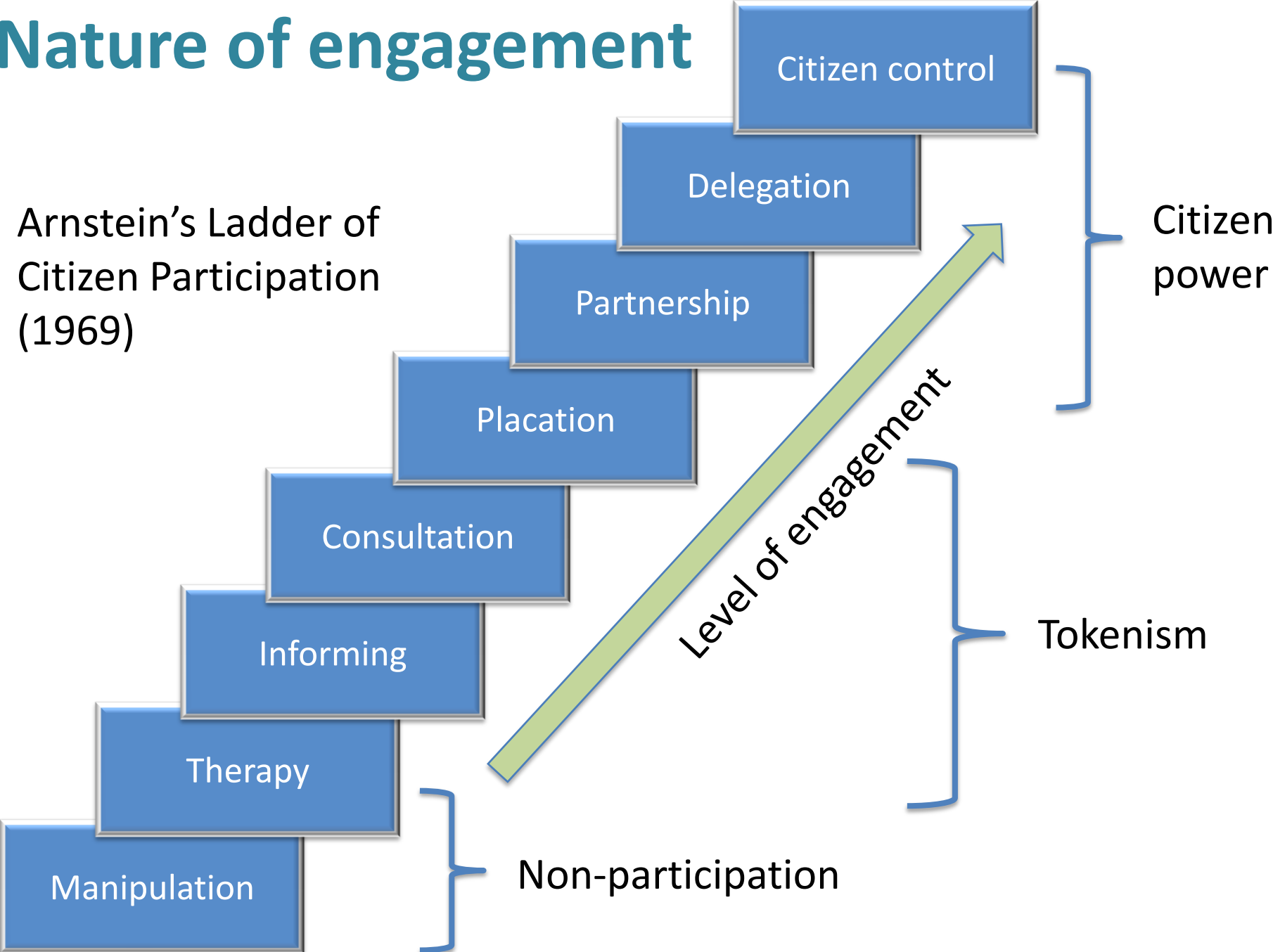
L (Latent)



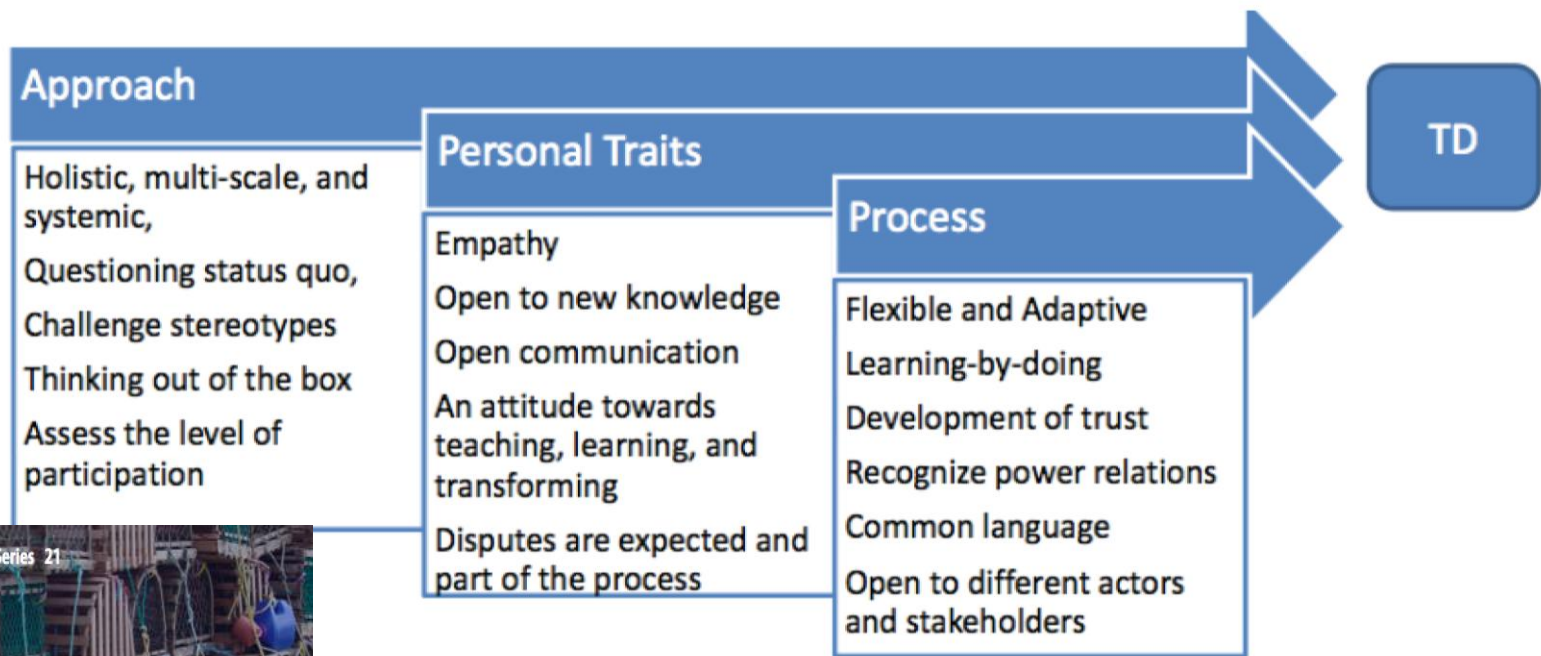
Source: Buanes et al. (2005)

Nature of engagement

Arnstein's Ladder of Citizen Participation (1969)



How to engage?



Transdisciplinarity as an interactive approach and 'slow science'



Transdisciplinarity for Small-Scale Fisheries Governance

Transdisciplinarity for Small-Scale Fisheries Governance

Analysis and Practice



Too BIG To IGNORE

Global Partnership for Small-Scale Fisheries Research

When to engage?

- Never too early, shouldn't be too late
- Step zero (pre-engagement)
- Proactive (anticipatory governance)
- Long-term engagement



Engagement challenges

- No time
- No money
- Too difficult
- No capacity
- Lack of will
- Lack of imagination
- Etc.



Overcoming challenges through global engagement process



Food and Agriculture
Organization of the
United Nations

Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries

in the Context of Food Security
and Poverty Eradication

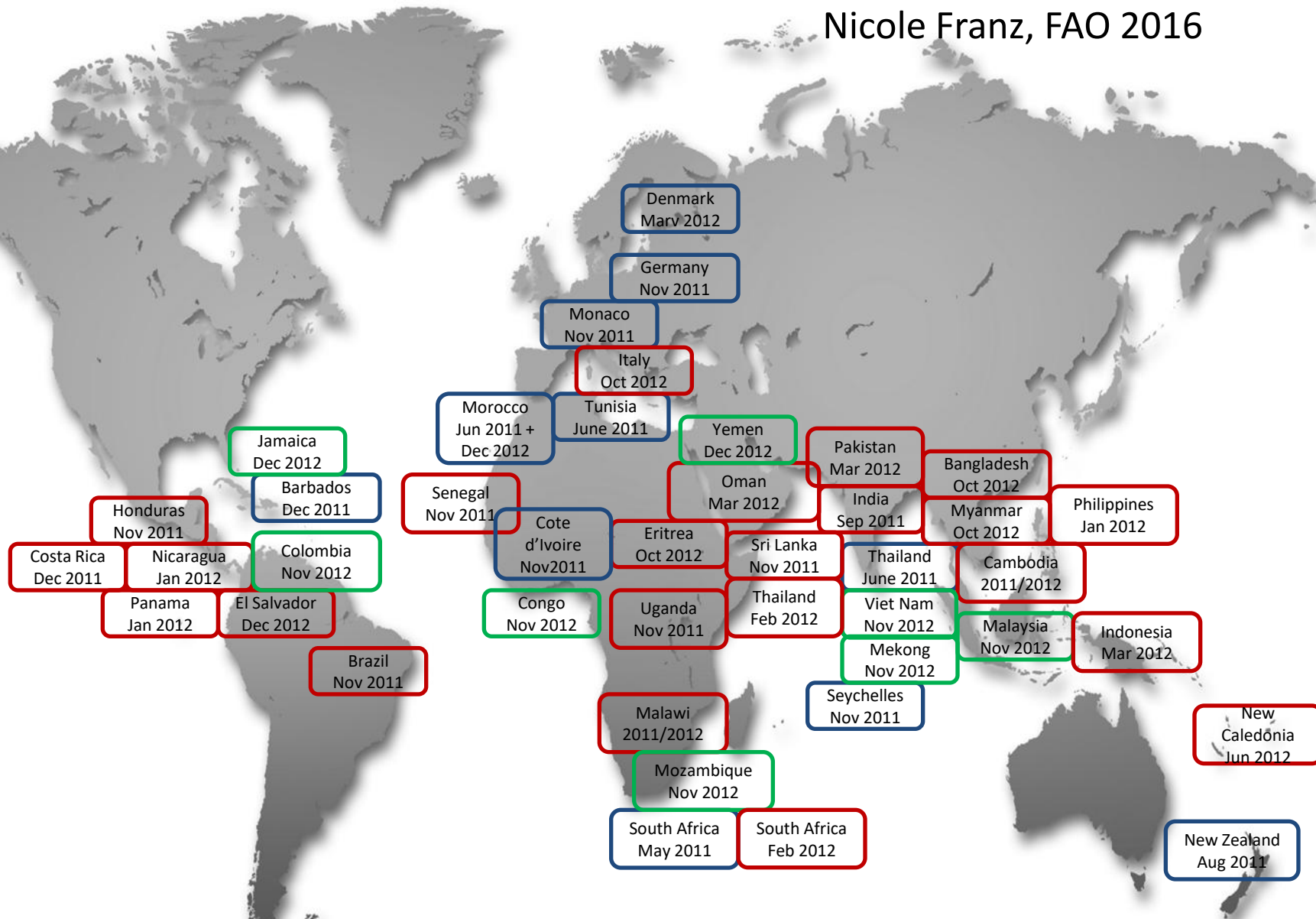


What are small-scale fisheries?

*“Small-scale fisheries can be broadly characterized as a **dynamic and evolving** sub-sector of fisheries employing labour-intensive harvesting, processing and distribution technologies to exploit marine and inland water fishery resources. The activities of this sub-sector, conducted **full-time** or **part-time**, or just **seasonally**, are often targeted on supplying fish and fishery products to **local and domestic markets**, and for **subsistence consumption**. Export-oriented production, however, has increased in many small-scale fisheries during the last one to two decades because of greater market integration and globalization. While typically **men** are engaged in fishing and women in fish processing and marketing, **women** are also known to engage in near shore harvesting activities and men are known to engage in fish marketing and distribution. Other **ancillary activities** such as net-making, boat-building, engine repair and maintenance, etc. can provide additional fishery-related employment and income opportunities in marine and inland fishing communities. Small-scale fisheries operate at widely **differing organizational levels** ranging from **self-employed single operators** through informal **micro-enterprises** to formal sector **businesses**. This sub-sector, therefore, is **not homogenous** within and across countries and regions and attention to this fact is warranted when formulating strategies and policies for enhancing its contribution to food security and poverty alleviation.” (FAO 2005)*

“The SSF Guidelines development process is probably the most participatory ever for a negotiated instrument in the history of FAO. It has involved about 4000 people directly.”

Nicole Franz, FAO 2016



Unique features about the SSF Guidelines

Negotiated international instrument entirely dedicated to SSF |

→ A global consensus on principles and guidance for small-scale fisheries governance and development

Bring together social development and responsible fisheries |

→ Beyond fisheries: sustainable livelihoods, social stability, food security and sustainable social and economic development

Complement other international instruments |

→ Code of Conduct for Responsible Fisheries; Right to Food Guidelines; Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests

→ Common grounding in **human rights principles**



The Guiding Principles in SSF Guidelines

- Human rights and dignity
- Respects of cultures
- Non-discrimination
- Gender equality and equity
- Equity and equality
- Consultation and participation
- Rule of law
- Transparency
- Accountability
- Economic, social and environmental sustainability
- Holistic and integrated approach
- Social responsibility
- Feasibility and social and economic viability

Two big questions

- Given that the SSF Guidelines are in the context of food security and poverty eradication, how relevant are they to the North, like Canada?
- Given that the SSF Guidelines are voluntary, what will it take to implement them?

Jentoft *Maritime Studies* 2014, **13**:16
<http://www.maritimestudiesjournal.com/content/13/1/16>

 **Maritime Studies**
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RESEARCH

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Walking the talk: implementing the international voluntary guidelines for securing sustainable small-scale fisheries

Svein Jentoft

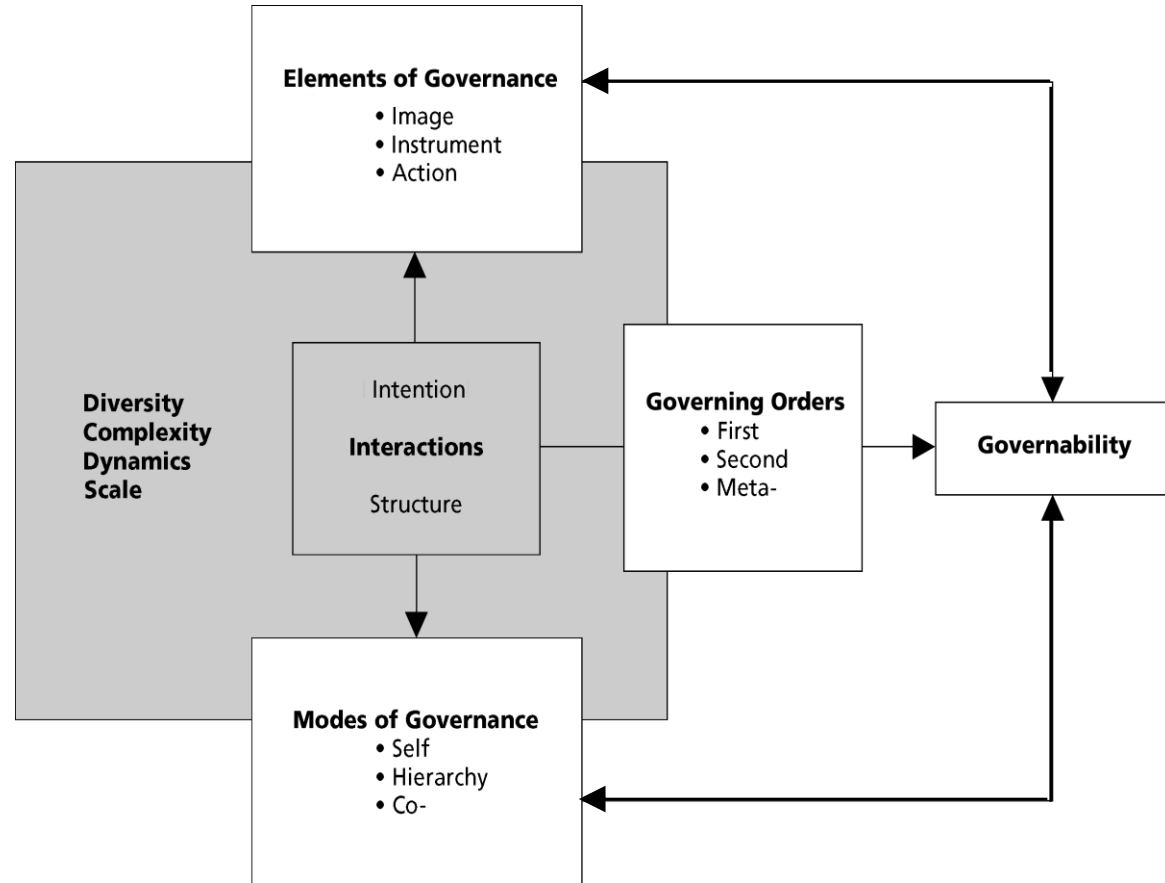
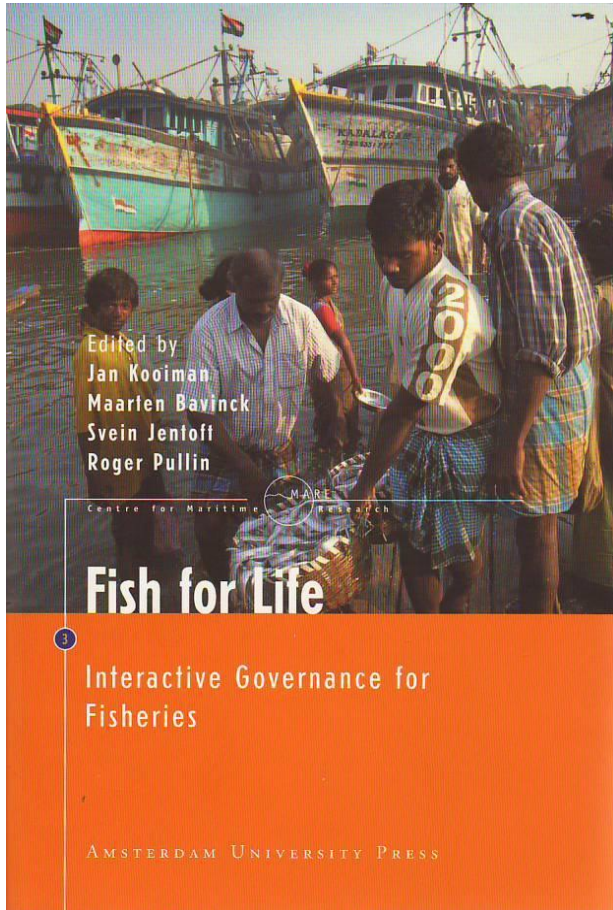
Correspondence:
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Norwegian College of Fishery
Science, University of Tromsø,
Tromsø, Norway

Abstract

On June 9, 2014 the Committee of Fisheries (COFI) of FAO adopted the Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication (SSF-Guidelines). For millions of small-scale fisheries people around the world, this was no doubt a historic event and a potential turning point. The challenge now is to make sure that they will be implemented. As the SSF-Guidelines address issues that are politically contentious, there are reasons to expect that they will be met both with enthusiastic acclamation and criticism, as already happened in the negotiations of the text. This paper discusses the opportunities and obstacles for their implementation.

Keywords: FAO; Small-scale fisheries guidelines; Human rights approach; Implementation; Interactive governance

Interactive governance theory as a foundation for transdisciplinarity



The governability concept

- Whether ocean governance will work or not depends on:
 - The characteristics (diversity, complexity, dynamics and scale) of the natural and social systems related to the ocean system that is being governed;
 - The capacity/capability of the ‘governing system’ to address challenges raised by the oceans;
 - The overall quality of their interactions.

A four-stage process:

Stage 1

Targets (Where to look)	Features (What to look for)	Measures (What to look at)
Ocean governance problem	Degree of wickedness	<ul style="list-style-type: none">• Stakeholders' images of the problem• Existence of stopping rules• The embedded nature of the problem• Cost and reversibility of prescribed solutions

A four-stage process:

Stage 2

Targets (Where to look)	Features (What to look for)	Measures (What to look at)
<ul style="list-style-type: none">• Natural & social system-to-be-governed• Governing system• Governing interactions	<p>Prevalence of system properties</p> <ul style="list-style-type: none">• Diversity• Complexity• Dynamics• Scale	<ul style="list-style-type: none">• Components• Relationships• Interactions• Boundaries

A four-stage process:

Stage 3

Targets (Where to look)	Features (What to look for)	Measures (What to look at)
Governing system	<ul style="list-style-type: none">• Goodness of fits of elements<ul style="list-style-type: none">➤ images, instruments actions• Responsiveness of modes<ul style="list-style-type: none">➤ self-, co-, and hierarchical• Performance of orders<ul style="list-style-type: none">➤ Meta, second, first	<ul style="list-style-type: none">• Behaviour, decisions, mental models, institutional arrangements, implementation• Awareness, learning, sensitivity, conflicts• Consistency, effectiveness, transparency, justice

A four-stage process:

Stage 4

Targets (Where to look)	Features (What to look for)	Measures (What to look at)
Governing interactions	<ul style="list-style-type: none">• Presence and quality of interactions• Enabling and restrictive role of power relations	<ul style="list-style-type: none">• Information sharing, co-learning, adaptiveness• Inclusiveness, representativeness, participation

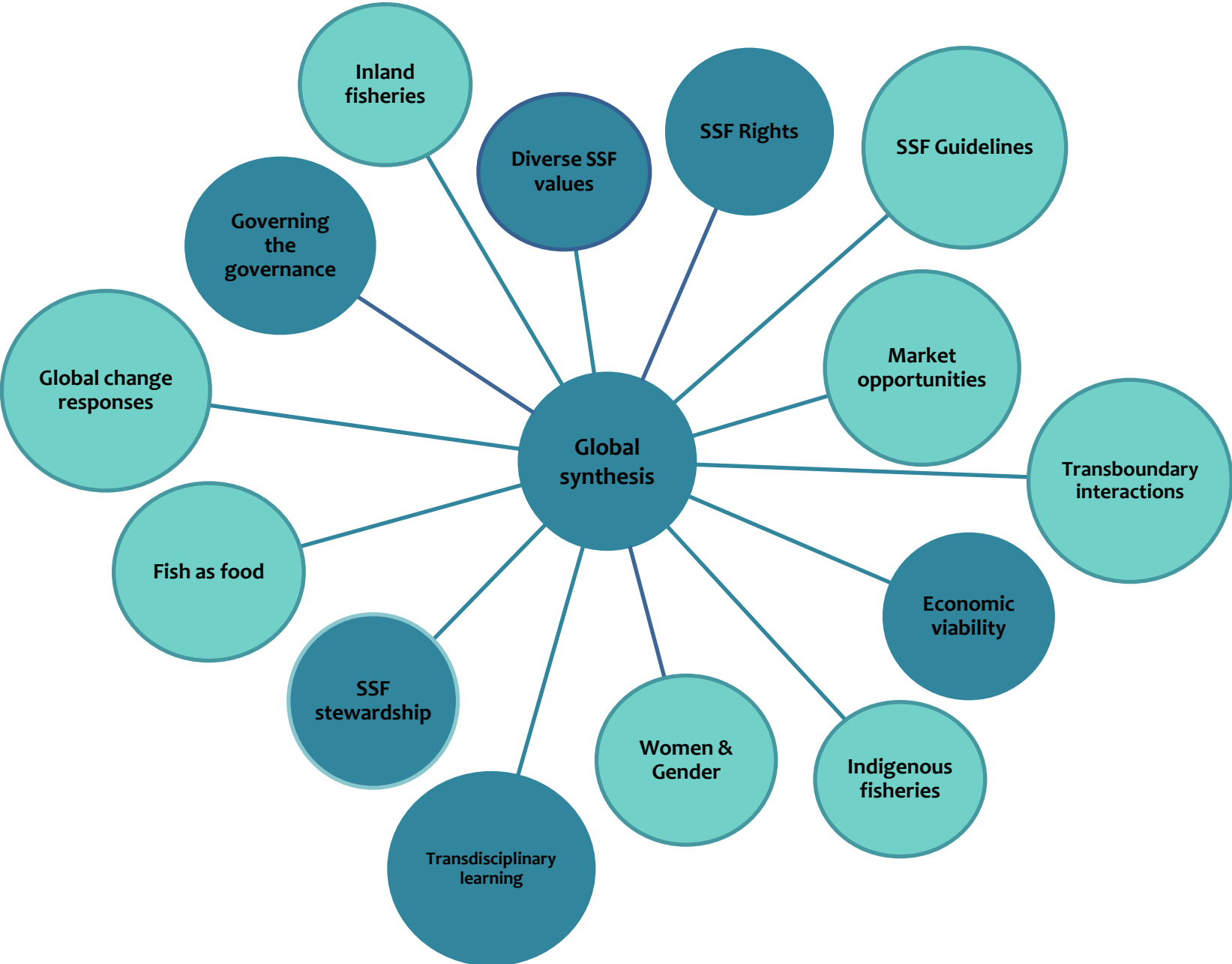
Examples of TD efforts



Transdisciplinary research collaboration between academics, governments, fishers/fishers' organizations, community groups, civil society organizations and environmental organizations.



TBTI research clusters covering multiple aspects of SSF



WSFC

3rd World Small-Scale Fisheries Congress
Chiang Mai, Thailand | October 22-26, 2018

Transdisciplinarity

Transformation

The Future of Small-Scale Fisheries



Don't miss!

Science symposium
Policy forum
Community roundtables
Storytelling & talk circles
Cultural exhibition
Field excursion

SAVE THE DATE!

**October 22-26, 2018
Chiang Mai, Thailand**

Emerging challenges, increasing demands on coastal and ocean governance



Goal 14: Conserve and sustainably use the oceans, seas and marine resources

Coastal and ocean sustainability from a transdisciplinary perspective

