Governing marine protected areas: social-ecological resilience through institutional diversity
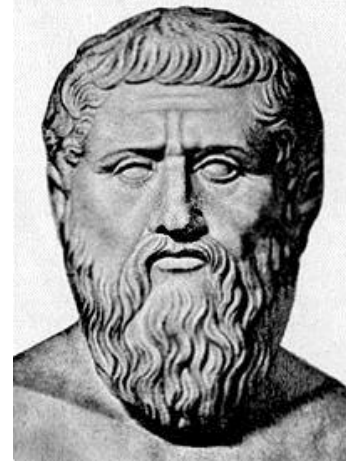
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tinyurl.com/GoverningMPAs

Governing Marine Protected Areas
Resilience through Diversity

Peter J.S. Jones

Governance = *steer* of people and the society they constitute in order to achieve strategic collective objectives
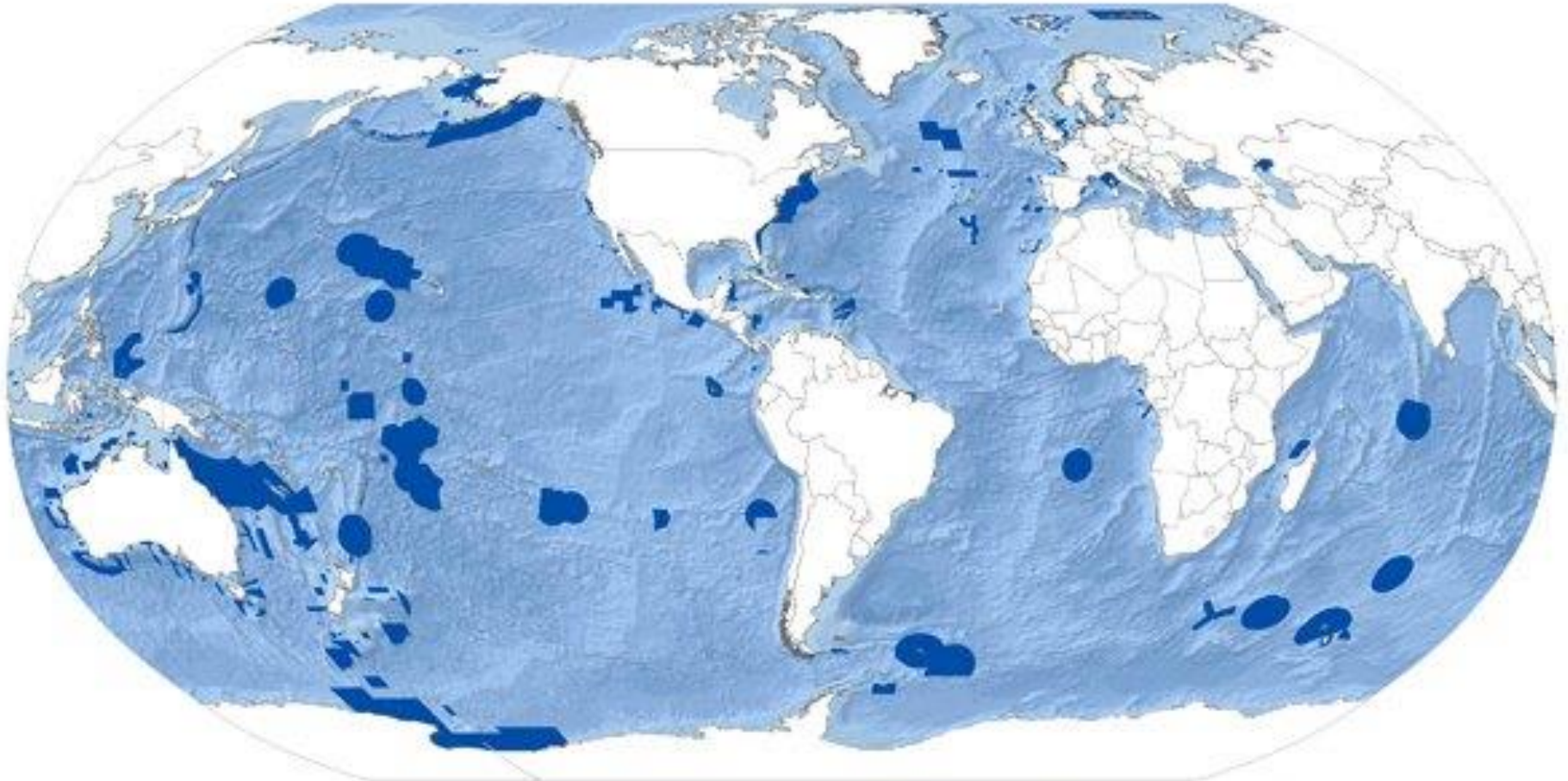

Plato, 360 BC

State control – government and law

Market forces – capitalism and economies

Public interests – people and civil society

Official MPA Map
(September 2016)

protectedplanet

Source: UNEP-WCMC AND IUCN (2018). Protected Planet: The World Database on Protected Areas (WDPA) [On-line], March, 2018, Cambridge, UK: UNEP-WCMC. Available at www.protectedplanet.net

UN environment WCMC

6.97% of the Global Ocean covered by protected areas
2.25% exclusively no-take. (April 2018 figures)

IUCN WCPA

https://www.protectedplanet.net/c/official-mpa-map
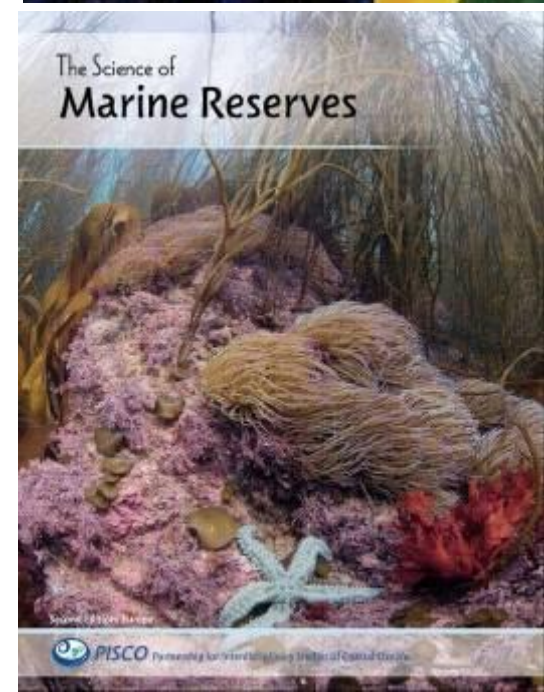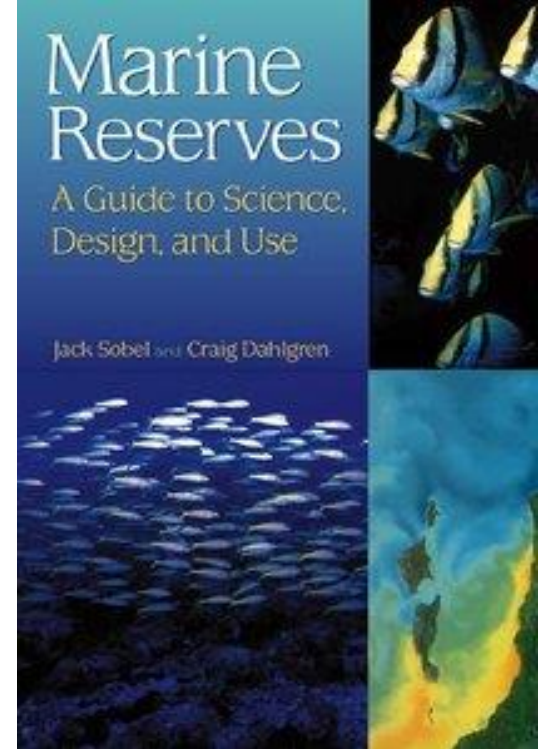https://www.protectedplanet.net/marine

Marine protected areas (MPAs) are an ideal vehicle for exploring the effectiveness of different governance approaches

The need for MPAs to address growing concerns & achieve conservation objectives is now *quite* widely accepted

Debates are moving on to how we can design networks of MPAs, and the knowledge-base and guidance is rapidly developing

Also a need to develop knowledge-base and guidance on how to **effectively and equitably** manage or **govern** MPAs

Marine Reserves
A Guide to Science, Design, and Use

Jack Sobel and Craig Dahlgren

The Science of
Marine Reserves
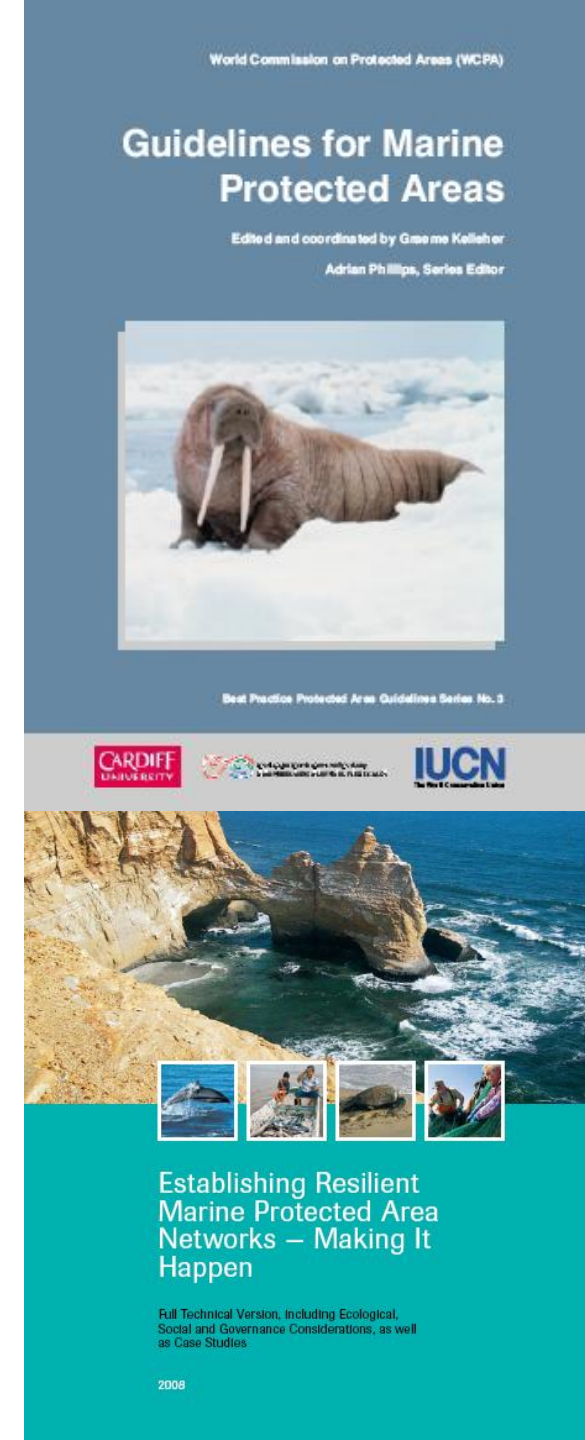
PISCO

Co-management is the recommended approach

IUCN MPA Guidance
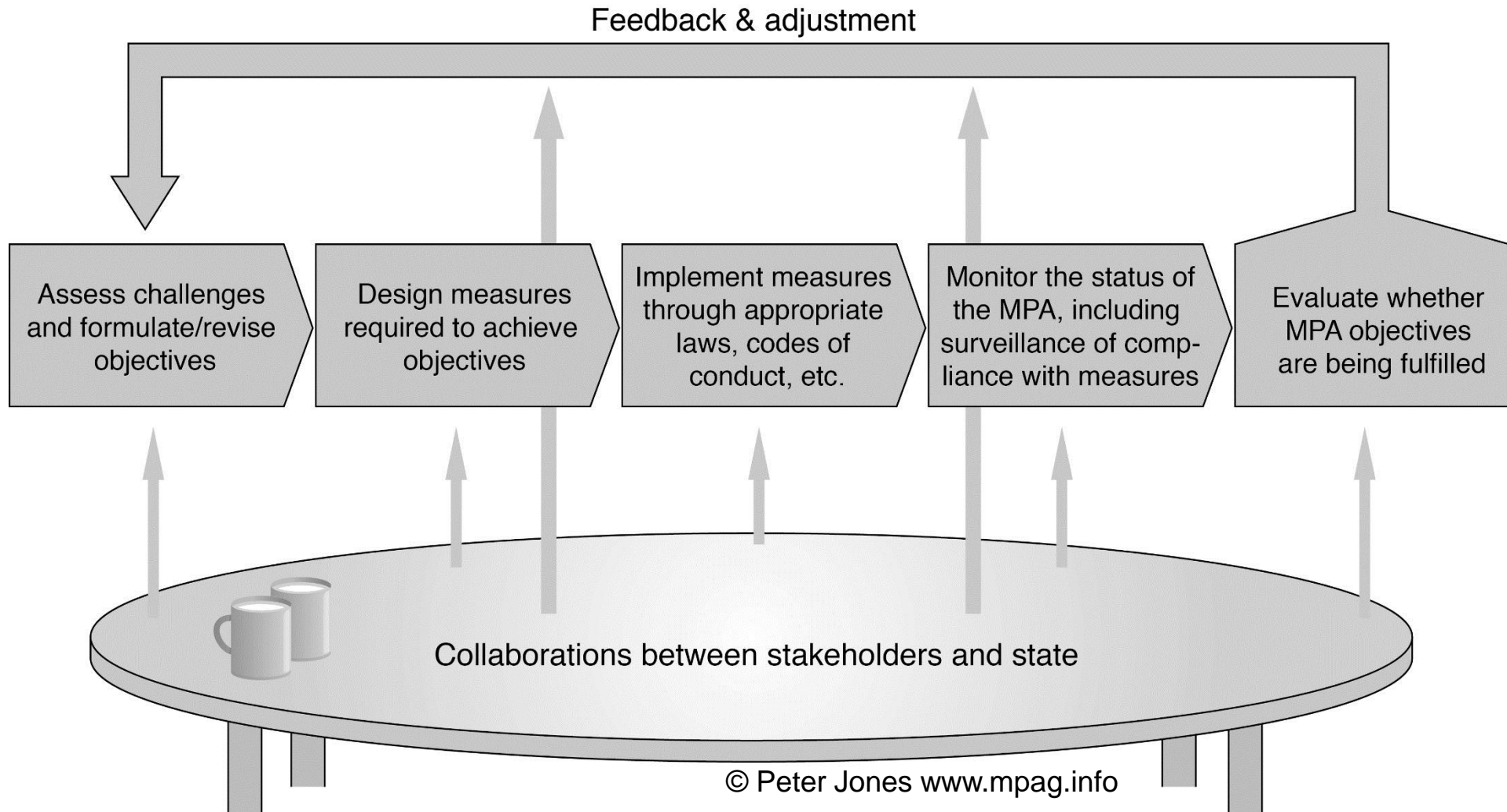Combine top-down & bottom-up approaches

"design and management of MPAs must be both top-down and bottom-up" **(Kelleher 1999)**

IUCN MPA Network Guidance (2008)
Recommends both top-down & bottom-up approaches

World Commission on Protected Areas (WCPA)

Guidelines for Marine Protected Areas

Edited and coordinated by Graeme Kelleher

Adrian Phillips, Series Editor

Best Practice Protected Area Guidelines Series No. 3

CARDIFF UNIVERSITY   IUCN

Establishing Resilient Marine Protected Area Networks – Making It Happen

Full Technical Version, including Ecological, Social and Governance Considerations, as well as Case Studies

2008

Adaptive co-management considered by many to be way forward

Feedback & adjustment

| Assess challenges and formulate/revise objectives | Design measures required to achieve objectives | Implement measures through appropriate laws, codes of conduct, etc. | Monitor the status of the MPA, including surveillance of compliance with measures | Evaluate whether MPA objectives are being fulfilled |

Collaborations between stakeholders and state
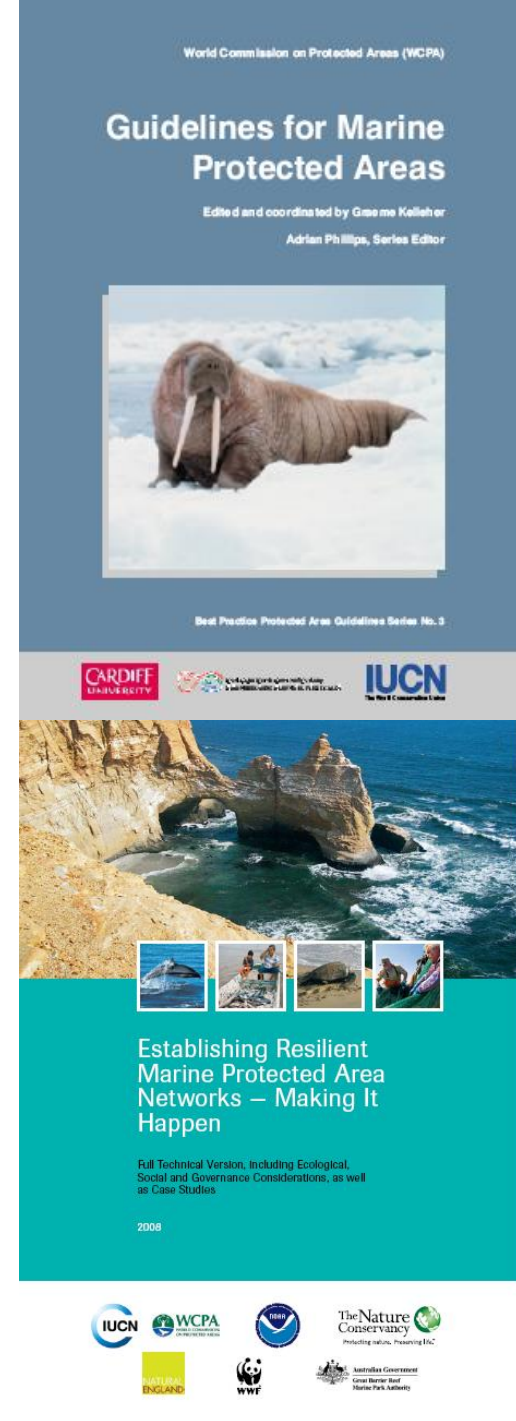
© Peter Jones www.mpag.info

Too simplistic and linear to provide guidance on the **complex interactions** between stakeholders and the state in governance processes, **including the diversity of different priorities & values**
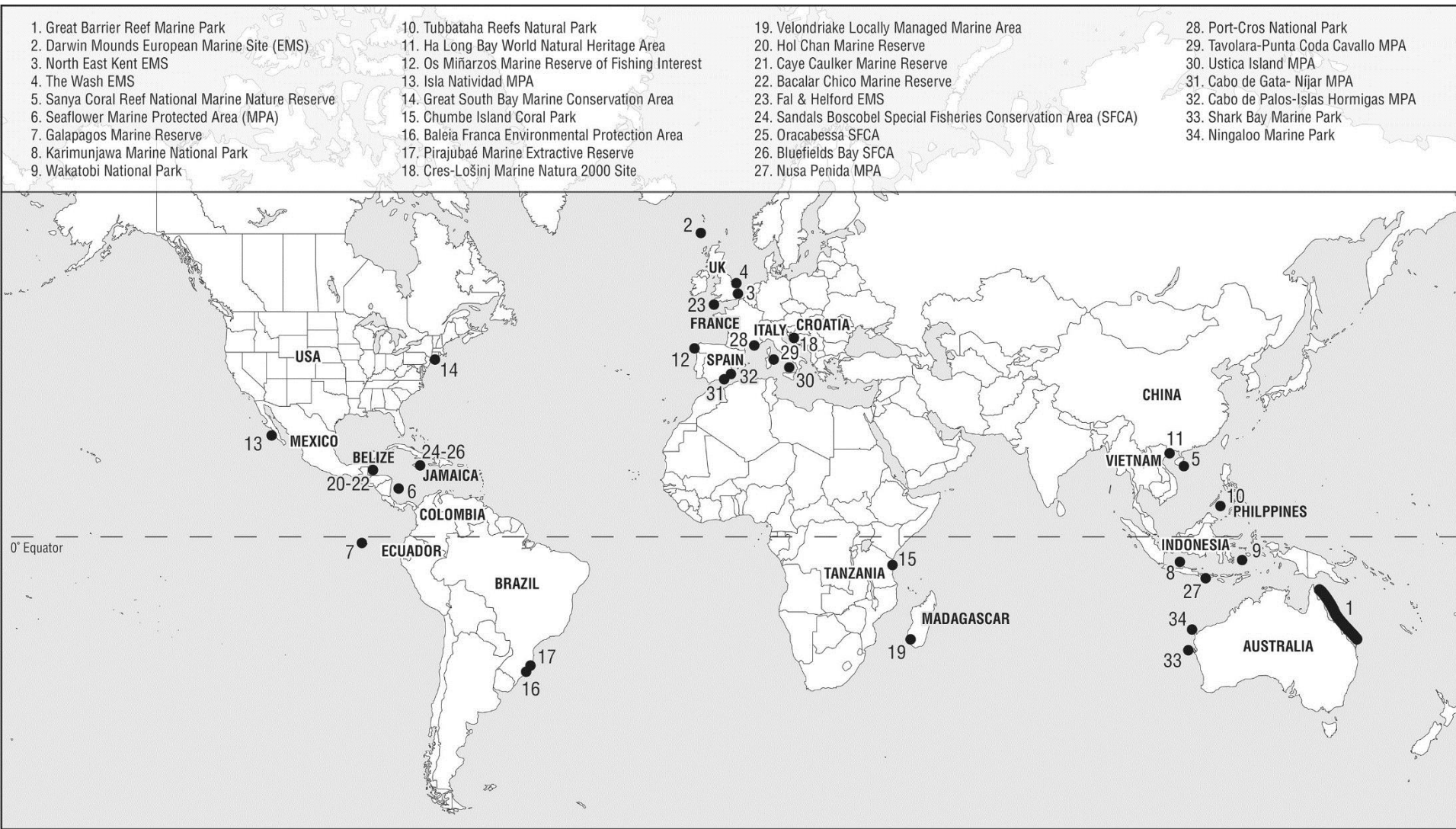
So what does
"design and management of MPAs must be both top-down and bottom-up" (Kelleher 1999) actually mean in practice?

Recognising governance complexity and diversity, this is the key question that the MPA governance project aims to address, initially through 20 case studies – now 34 with further 15 being analysed
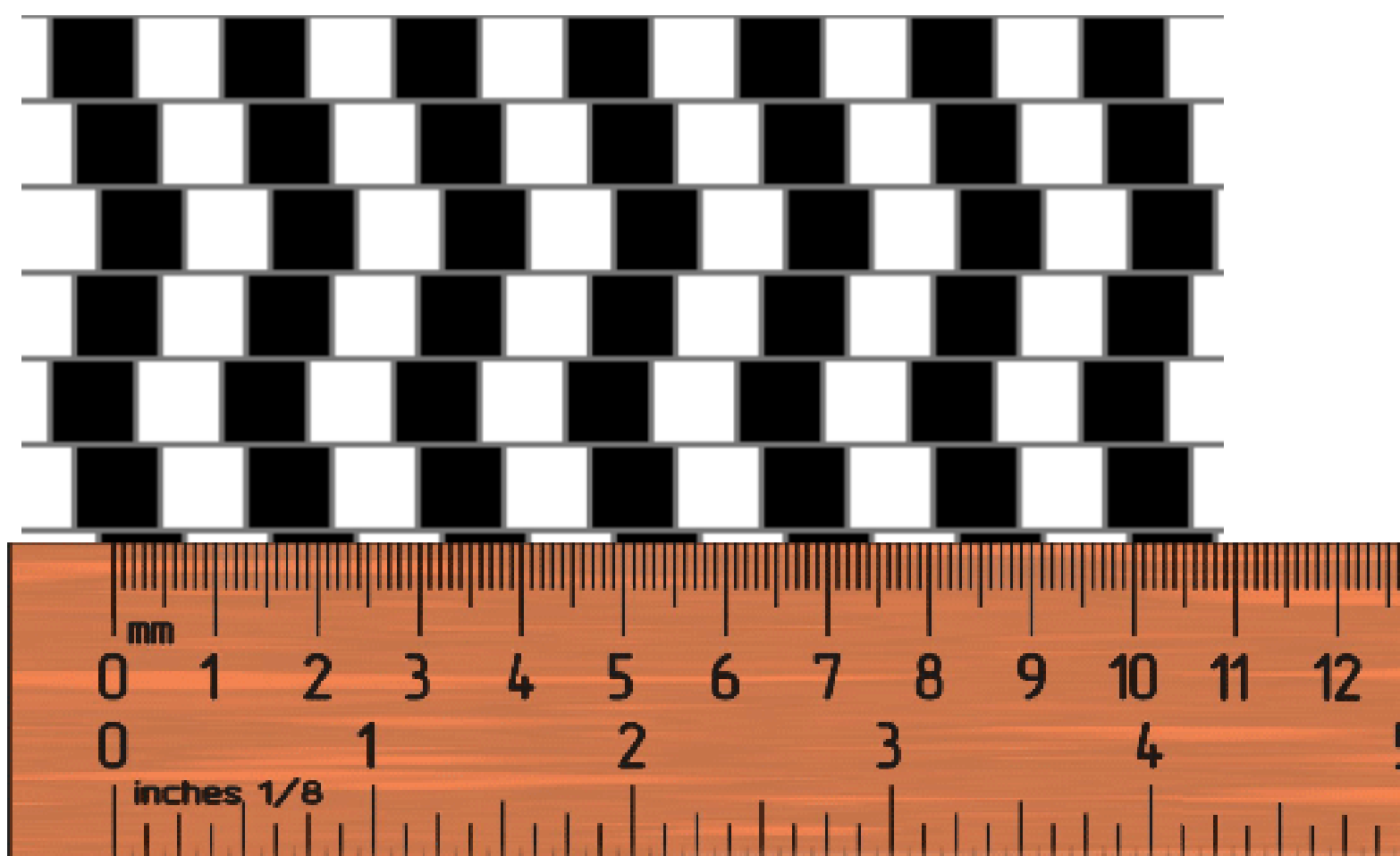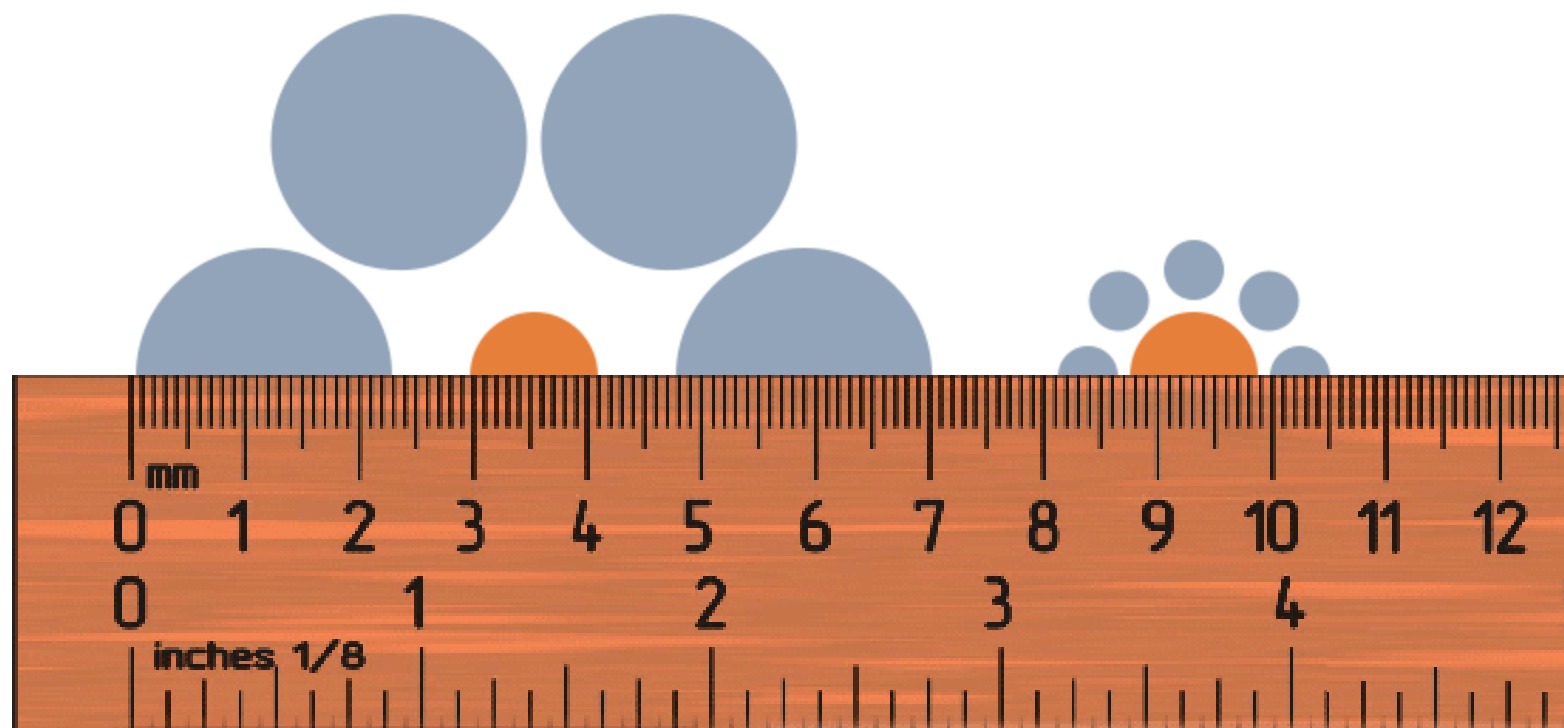
34 case studies in 19 countries

1. Great Barrier Reef Marine Park
2. Darwin Mounds European Marine Site (EMS)
3. North East Kent EMS
4. The Wash EMS
5. Sanya Coral Reef National Marine Nature Reserve
6. Seaflower Marine Protected Area (MPA)
7. Galapagos Marine Reserve
8. Karimunjawa Marine National Park
9. Wakatobi National Park

10. Tubbataha Reefs Natural Park
11. Ha Long Bay World Natural Heritage Area
12. Os Miñarzos Marine Reserve of Fishing Interest
13. Isla Natividad MPA
14. Great South Bay Marine Conservation Area
15. Chumbe Island Coral Park
16. Baleia Franca Environmental Protection Area
17. Pirajubaé Marine Extractive Reserve
18. Cres-Lošinj Marine Natura 2000 Site

19. Velondriake Locally Managed Marine Area
20. Hol Chan Marine Reserve
21. Caye Caulker Marine Reserve
22. Bacalar Chico Marine Reserve
23. Fal & Helford EMS
24. Sandals Boscobel Special Fisheries Conservation Area (SFCA)
25. Oracabessa SFCA
26. Bluefields Bay SFCA
27. Nusa Penida MPA

28. Port-Cros National Park
29. Tavolara-Punta Coda Cavallo MPA
30. Ustica Island MPA
31. Cabo de Gata- Níjar MPA
32. Cabo de Palos-Islas Hormigas MPA
33. Shark Bay Marine Park
34. Ningaloo Marine Park

An additional 15 case studies are in the process of being written-up

MPAG analytical framework [full outline]

- Context including metrics: per capita GDP and growth rate, HDI, state capacity, population below poverty line, unemployment rate

- Objectives

- Driving Forces/Conflicts

- Governance Framework/Approach

- **Effectiveness** (scale of 1-5 based on whether impacts addressed)

- Incentives **employed** & **needed**:

Economic
Communication
Knowledge
Legal
Participation

*: how incentives interact and are **combined***

- Cross cutting themes: equity issues, roles of NGOs, role of leadership, issues related to political will and role of state

Economic incentives (markets): using economic and property rights approaches to promote the fulfilment of PA objectives (10)

Communication or interpretative incentives (education and awareness raising): promoting awareness of the conservation features of the PA, the related objectives for conserving them, the policies for achieving these objectives and support for related measures (3)

Knowledge incentives (collective learning): respecting and promoting the use of different sources of knowledge to better inform PA decisions (3)

Legal incentives (top down): use of relevant laws, regulations etc. as a source of 'state steer' to promote compliance with decisions and thereby the achievement of PA obligations (10)

Participation incentives (bottom-up): providing for users, communities and other interest groups to participate in and influence PA decision-making that may potentially affect them, in order to promote their 'ownership' of the PA and thereby their potential to cooperate in implementation of decisions (10)

Incentive Category	Incentive	Associated Governance Approach
Economic	1. Payments for ecosystem services (PESs) 2. Assigning property rights 3. Reducing the leakage of benefits 4. Promoting profitable and sustainable fishing and tourism 5. Promoting green marketing 6. Promoting diversified and supplementary livelihoods 7. Providing compensation 8. Investing MPA income/funding in facilities for local communities 9. Provision of state funding 10. Provision of NGO, private sector and user fee funding	Market approach
Communication	11. Raising awareness 12. Promoting recognition of benefits 13. Promoting recognition of regulations and restrictions	Supports all three approaches
Knowledge	14. Promoting collective learning 15. Agreeing approaches for addressing uncertainty 16. Independent advice and arbitration	Supports all three approaches
Legal	17. Hierarchical obligations 18. Capacity for enforcement 19. Penalties for deterrence 20. Protection from incoming users 21. Attaching conditions to use and property rights 22. Cross-jurisdictional coordination 23. Clear and consistent legal definitions 24. Clarity concerning jurisdictional limitations 25. Legal adjudication platforms 26. Transparency, accountability and fairness	State approach/ top-down
Participation	27. Rules for participation 28. Establishing collaborative platforms 29. Neutral facilitation 30. Independent arbitration panels 31. Decentralising responsibilities 32. Peer enforcement 33. Building trust and the capacity for cooperation 34. Building linkages between relevant authorities and user representatives 35. Building on local customs 36. Potential to influence higher institutional levels	People approach/ bottom-up
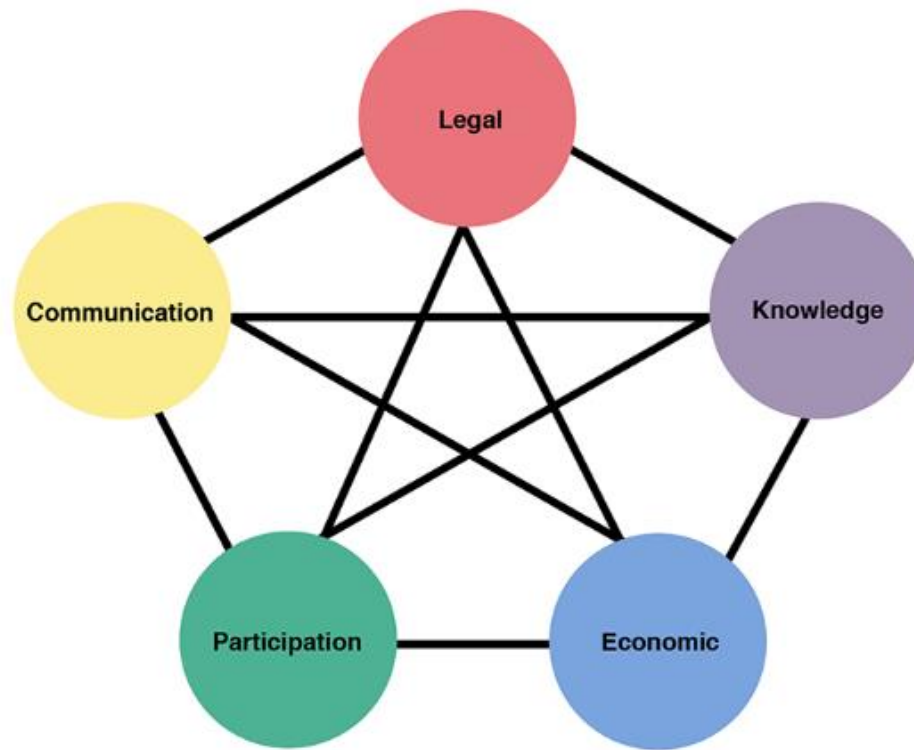
Also important to consider how incentives from different categories interact with and support each other, working in combination

Distinction between top-down, bottom-up and market approaches thus becomes blurred, if not irrelevant, as you need to combine incentives based on all three approaches, including supporting role of communication & knowledge incentives

Economic, communication, knowledge and participation incentives, including the important roles of **local leaders** and **NGOs**, can complement the roles of the state,

but these are **not a substitute** for the roles of the state, as **legal incentives are critically important** to reinforce the governance framework.

Political will, particularly at higher government levels, is **vital** to provide for the roles of the state and promote effectiveness

Tubbataha Ranger Station (Alan White)

Without community stewardship or 'ownership' of an MPA, incentives aimed at generating support from local resource users are less likely to be successful

One important means of promoting community stewardship is to **provide for protection from incoming users, including through the allocation of legally enforced community property rights**, in combination with other incentives

Seaflower stakeholders (Coralina)

Tubbataha stakeholders (WWF)

The potential for trade-offs between effectiveness and equity in MPA governance raises many challenges,

a **balance** must be struck **between providing for a reasonable standard of living** for local communities, through controlled access to the resources in an MPA, alternative livelihoods, etc, <u>and</u> **ensuring that biodiversity conservation & sustainable use objectives are achieved,** *i.e. MPAs as a vehicle for sustainable development*

Karimunjawa MPA (Wildlife Conservation Society)

Mike Markovina/Marine Photobank

James Cervino

What key attribute confers stability in ecosystems?
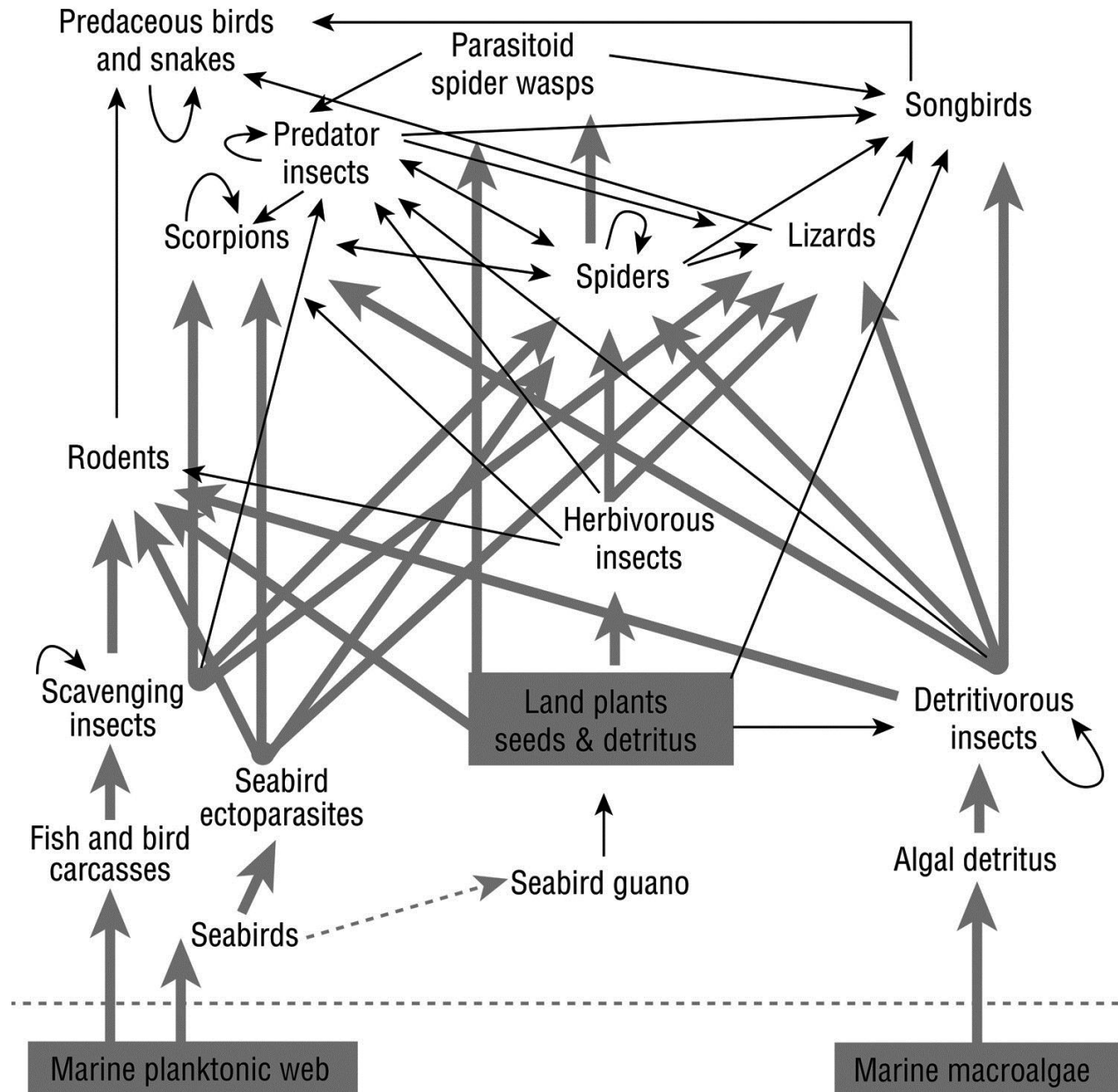
What key attribute confers stability in governance systems?

Driving forces

- Provision of NGO, private sector and user fee funding
- Capacity for enforcement
- Hierarchical obligations
- Raising awareness
- Promoting profitable and sustainable fisheries
- Penalties for deterrence
- Clear and consistent legal definitions
- Promoting recognition of benefits
- Establishing collaborative platforms
- Promoting collective learning
- Decentralising responsibilities
- Promoting recognition of regulations and restrictions

Legend: Economic | Legal | Communication | Knowledge | Participation

Cause-effect steps to resilient social-ecological systems

Incentive diversity ➡ more resilient governance framework ➡
increased effectiveness of MPA ➡ increased biodiversity ➡ more
resilient ecosystem ➡ increased ecosystem services: fish catches,
tourism, coastal defence, etc ➡ more resilient social system ➡
increased resilience of social-ecological system

Driving forces

Jackson et al (2001) *Science*, 293, 629-638
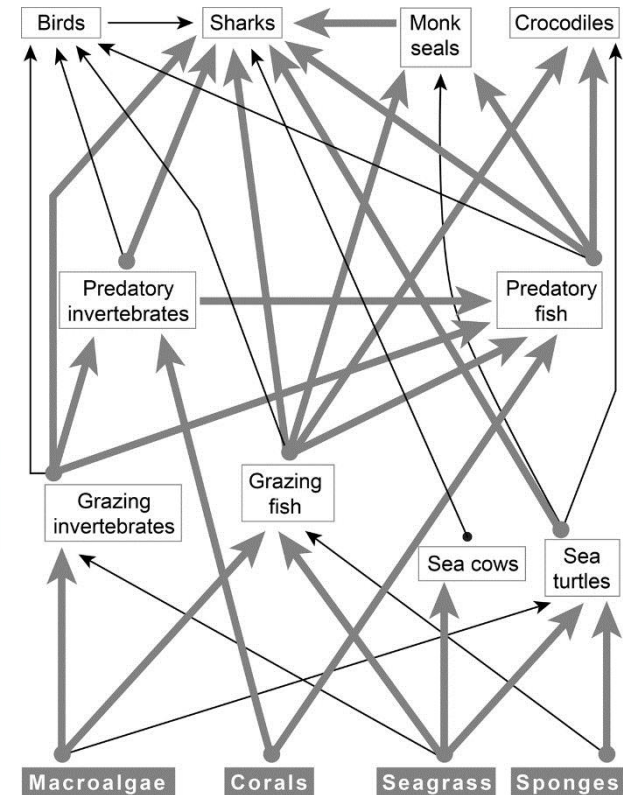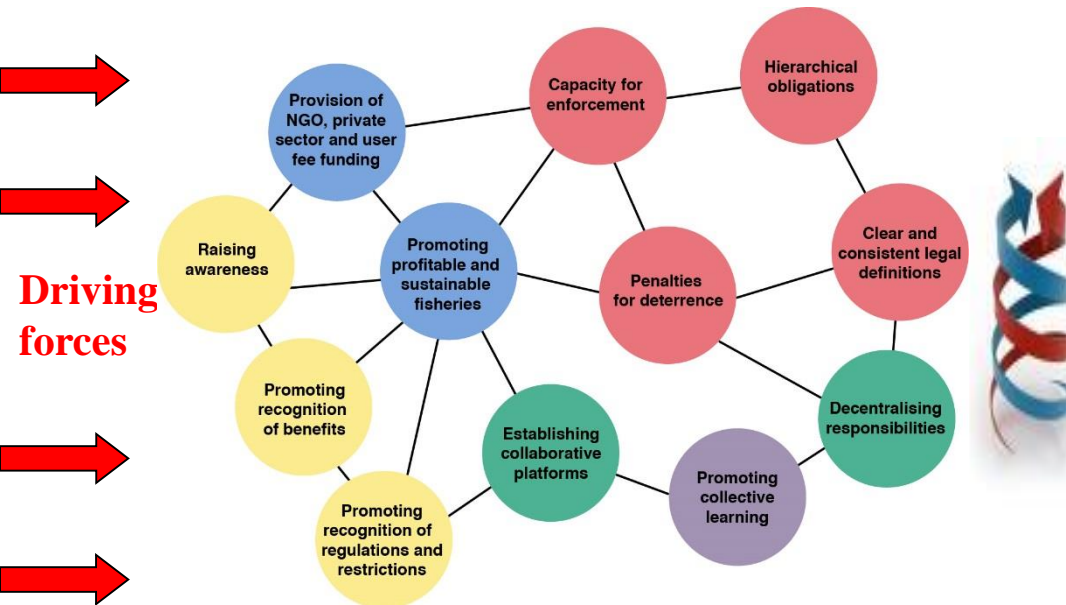
Great Barrier Reef Marine Park (Australia)

Uncertain whether declines in fish populations and/or terrestrial run-off exacerbating crown of thorns starfish outbreaks;

No-take zones (NTZs) area increased on a precautionary basis;

Recoveries in health of NTZs make them more resilient: fewer starfish outbreaks than fished areas leading to higher coral cover.

Isla Natividad (Mexico)

Relatively large body size & high egg production of abalone populations in NTZs conferred resilience to anoxia episode related to ocean warming: increased survival and recovery rate;

Larval export promoted replenishment of populations in fished areas

Chumbe (Tanzania)

Coral reefs in no-take MPA less impacted by coral bleaching and recovered sooner: considered most resilient in Western Indian Ocean

In the face of strong driving forces, the combined use of a diversity of inter-connected incentives makes MPA governance frameworks more resilient.

Resilience in MPA governance frameworks is therefore **woven by complex webs connecting incentives from all five categories**

… but **without strong legal incentives to reinforce the MPA governance framework, it will not be resilient**

Driving forces

Jackson et al (2001) *Science*, 293, 629-638
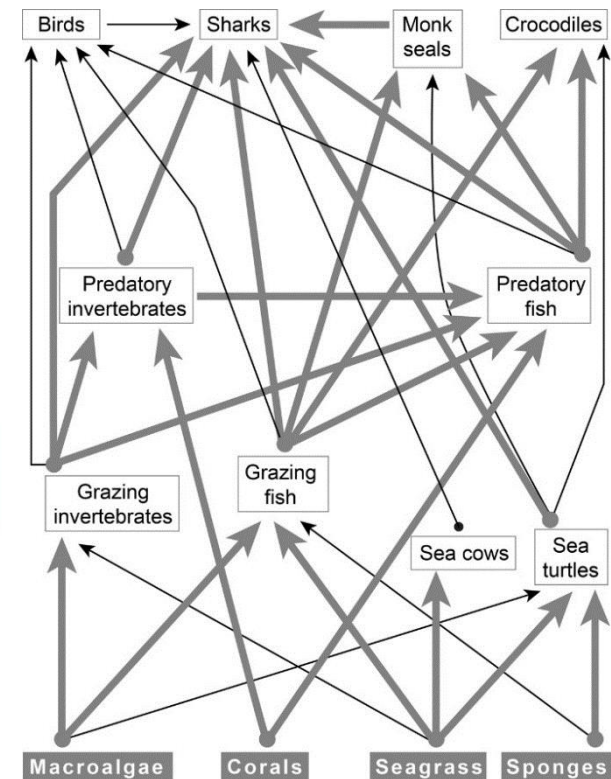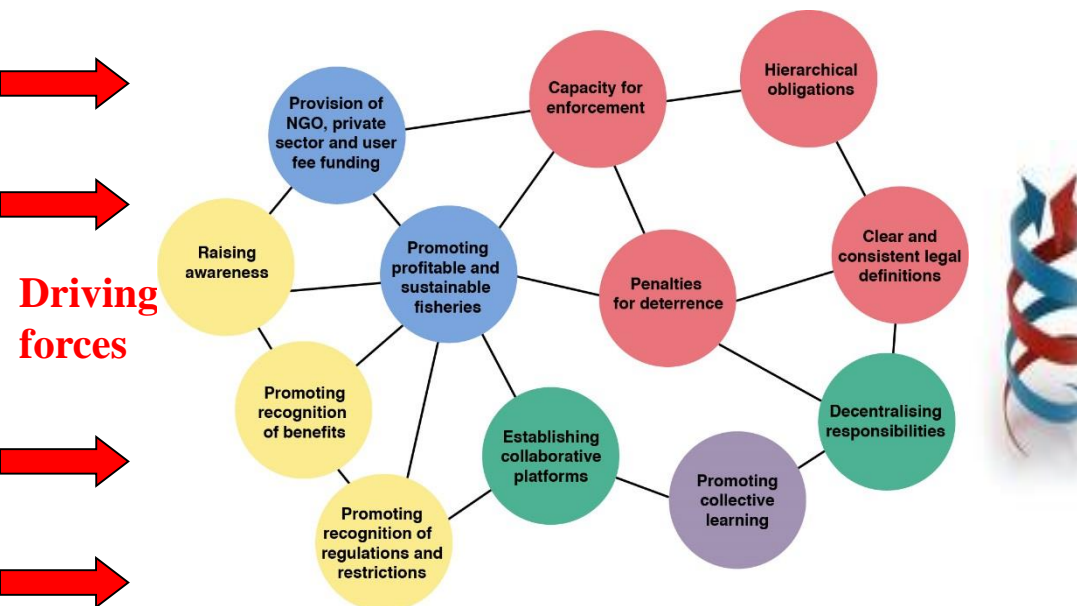
New UN Environment guidance for practitioners and related policy actors due out soon, based on 34 case studies

See related UNE *Frontiers 2017* article highlighting the MPAG rationale and this forthcoming guidance (pp.35-46 of *Frontiers 2017*, (Español)

"Ultimately, governing the oceans in a sustainable way could see MPAs as a driver – not a limit – for the vital economic and social benefits that we derive from the global ocean." (UNE summary)

UN environment

ENABLING EFFECTIVE AND EQUITABLE MARINE PROTECTED AREAS: guidance on combining governance approaches

Ankobohobo crab fishery,
Locally Managed Marine Area, Madagascar
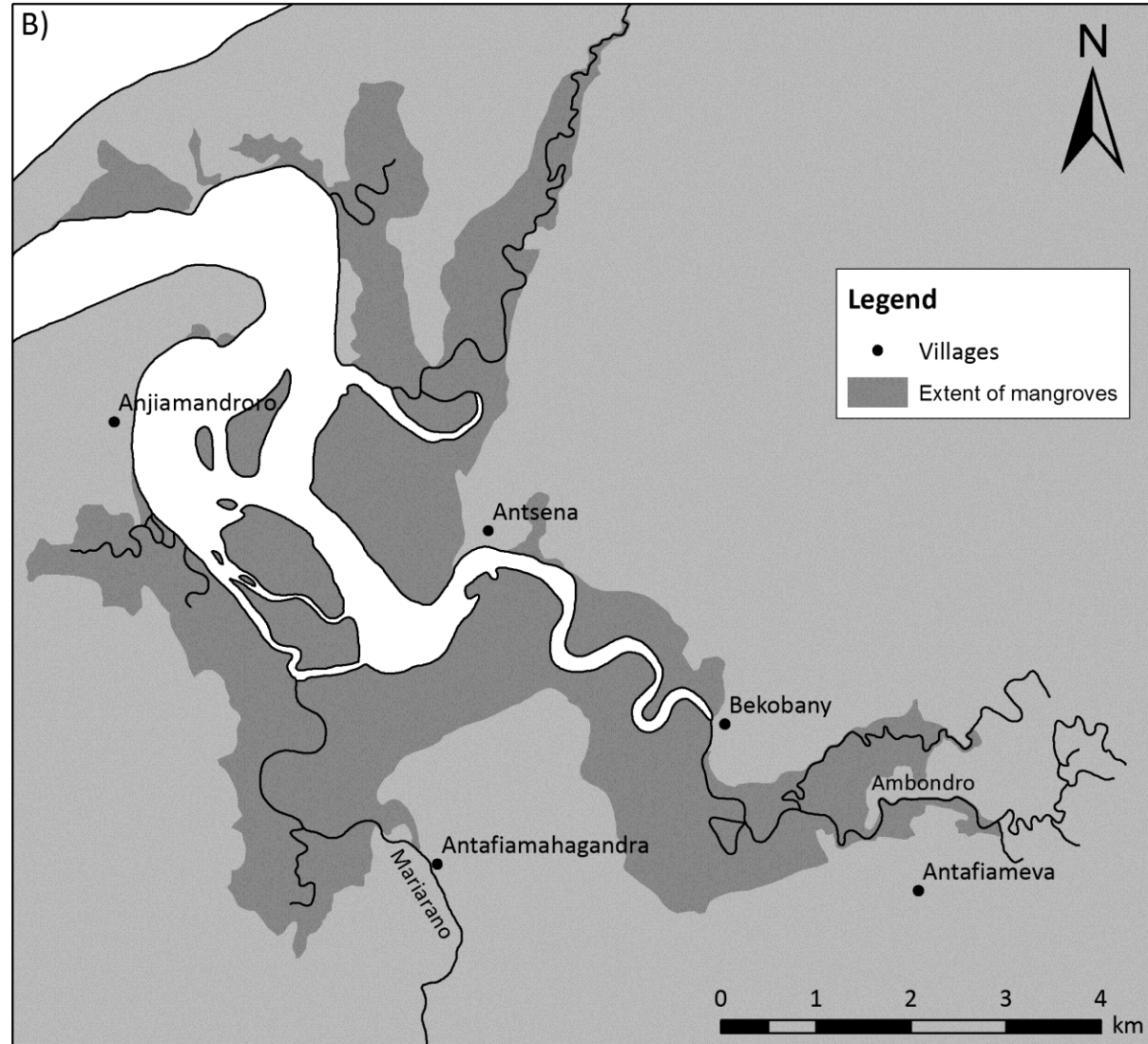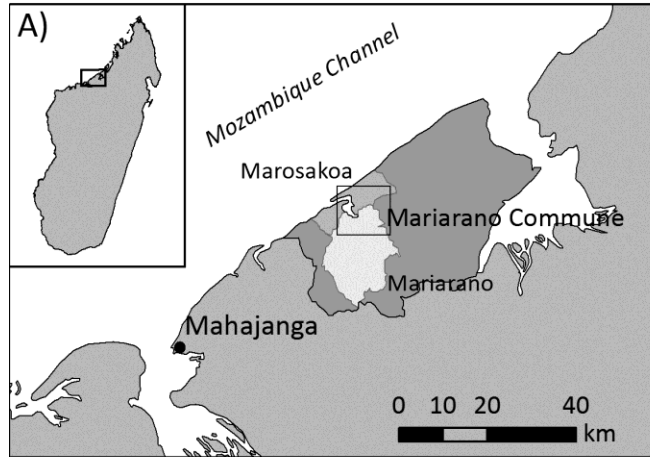
Drivers/Conflicts – Positive feedback loops between overfishing & mangrove degradation => negative synergy and downward spiral for crabs & mangroves
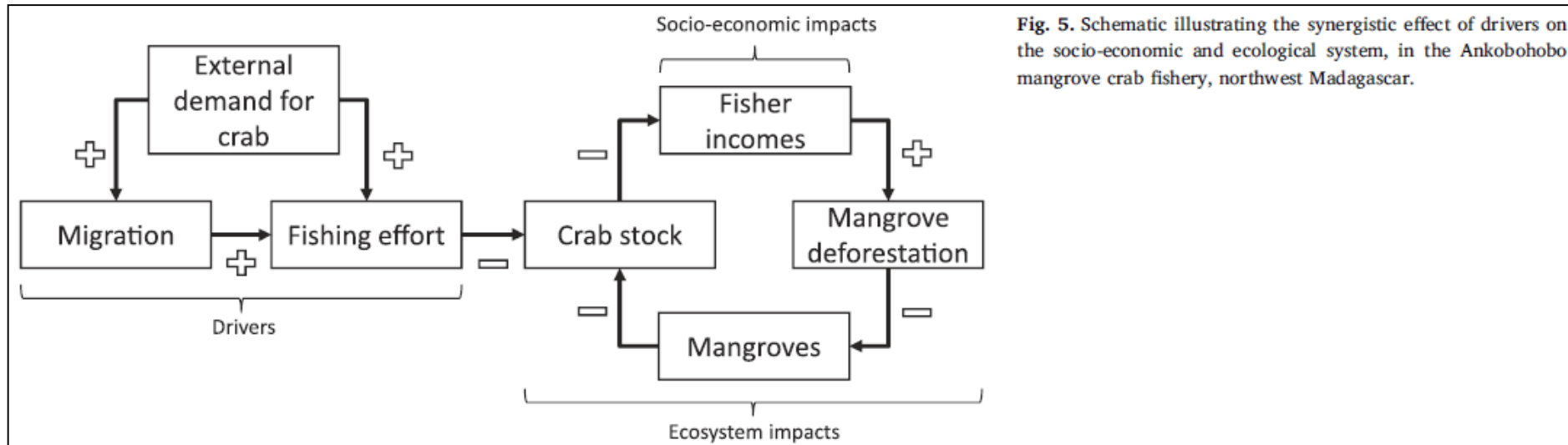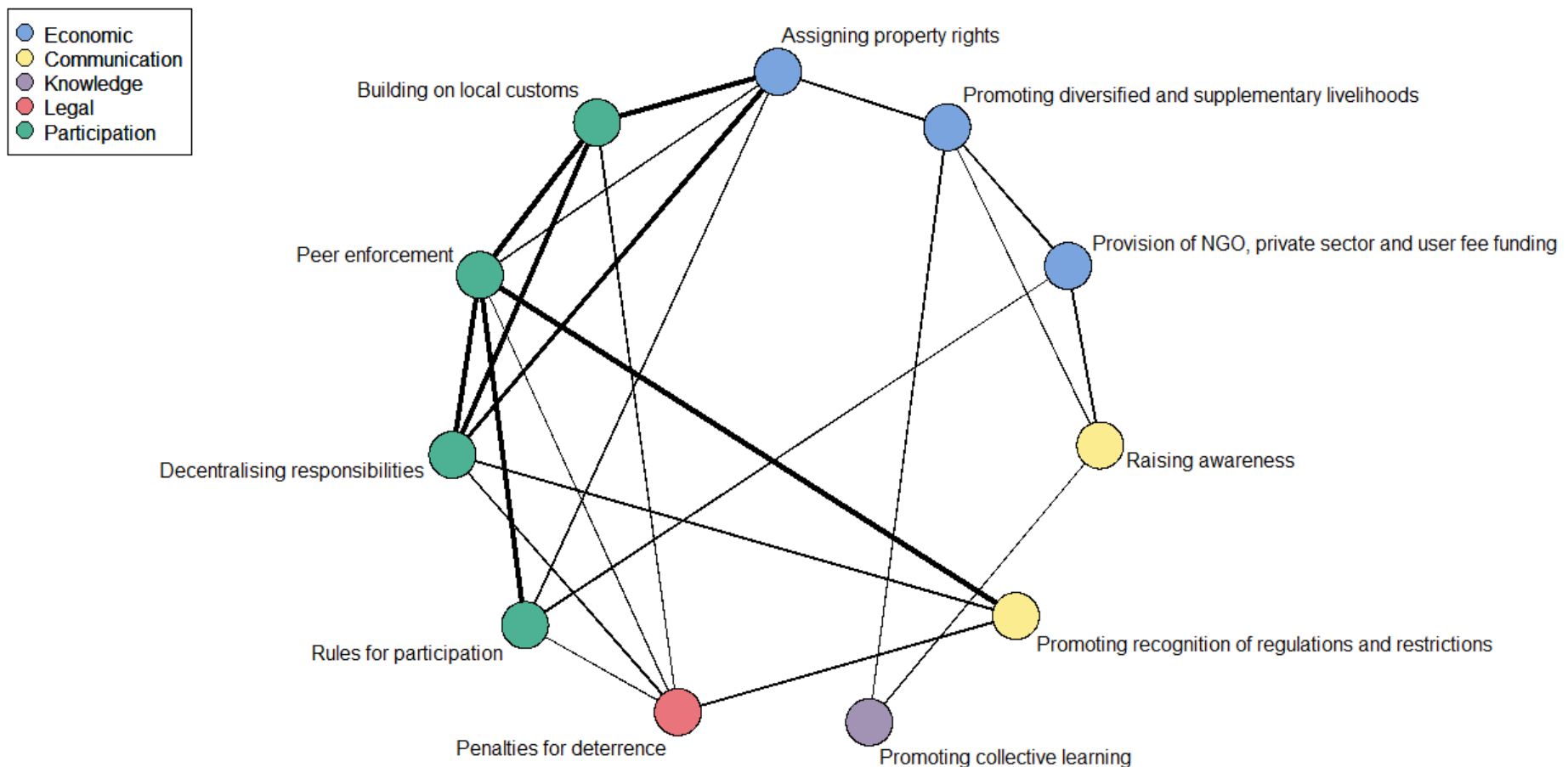

Socio-economic impacts

Fig. 5. Schematic illustrating the synergistic effect of drivers on the socio-economic and ecological system, in the Ankobohobo mangrove crab fishery, northwest Madagascar.

'the reason for the decrease in crabs is the degradation of the mangroves' (FG-B)

Community-based governance approach through two community-based organisations and three fishing associations, mainly enforced through a traditional management system that is legally recognised - "dina", **but lack of coordination is a major challenge**

Effectiveness 1/5 *Some impacts beginning to be slightly addressed*

Limited efficacy of a predominantly bottom-up approach to address the threats of overfishing and mangrove degradation through charcoal production
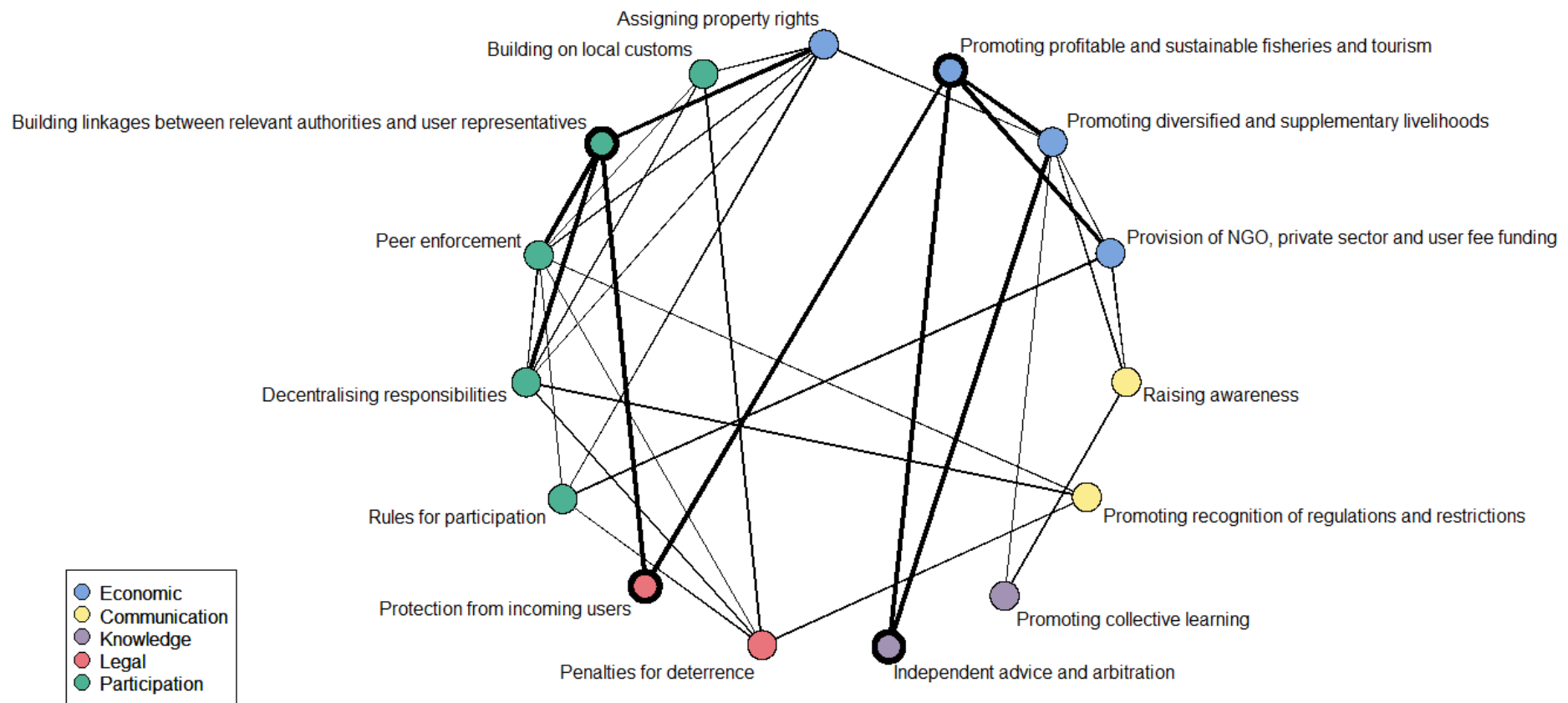
Through research findings, analysis using the MPAG framework and examples of good practice from other MPAG case studies:-

- particular incentives that need introducing

- and particular interactions that need strengthening

:- are identified & recommended

Key findings for Brazil's MPAs

MPA governance is all about changing human behaviour to achieve collective objectives, so a focus on cultural and societal 'norms' is as important as a focus on regulations, economic benefits, etc

Need to move beyond focus on particular governance approaches, *eg* Territorial User Rights for Fisheries (TURFs), community-based, decentralised, etc: think more in terms of how different governance approaches can be combined through a diversity of interacting and mutually reinforcing incentives to make MPAs more effective <u>and</u> equitable

- There are opportunities and challenges in decentralisation: a diversity of incentives from all five categories is needed to achieve effective and equitable decentralisation, *eg* <u>Sanya</u> case study, China

- There are opportunities and challenges in TURFS: a diversity of incentives from all five categories is needed to achieve effective and equitable assignation of property rights, *eg* <u>Os Minarzos</u> case study, Spain

Principais resultados para as AMPs brasileiras

A governança de AMPs trata de mudar o comportamento humano para atingir objetivos coletivos, portanto um foco nas 'normas' culturais e sociais é tão importante quanto o foco nas regulações, benefícios econômicos, etc

Necessidade de ir além do foco em abordagens específicas de governança, ex., Direito de Uso Territorial Pesqueiro (TURFs), base-comunitária, descentralização, etc: pensar mais em termos de como diferentes abordagens de governança podem ser combinadas a partir de uma diversidade de incentivos que interagem e se reforçam mutuamente para tornar as AMPs mais efetivas <u>e</u> equitativas

- Existem oportunidades e desafios na descentralização: uma diversidade de incentivos a partir de todas as cinco categorias são necessárias para atingir a descentralização efetiva e equitativa, ex. estudo de caso de <u>Sanya</u>, China

- Existem oportunidades e desafios nas TURFs: uma diversidade de incentivos de todas as cinco categorias é necessárias para atingir direitos de propriedade efetivos e equitativos, ex., estudo de caso <u>Os Minarzos</u>, Espanha

There is no single model for MPA governance which can be 'rolled out' to all MPAs in a state, country or region: focus always needs to be on combinations of governance incentives to promote effectiveness and equity in the particular context of an MPA.

Case studies are extremely useful for identifying particular combinations of incentives that seem to be effective in addressing a particular type of conflict which can be transferred to other MPAs, taking account of political/cultural/ecological/etc contexts

But, a case study should not be taken as 'a model' to be adopted and rolled out across a given state, country or region

State support and political will is always crucial, including for decentralised, community-led and private MPAs, as this is particularly important to provide for enforcement capacity, sufficient deterrence, etc – the state cannot relinquish responsibility for MPAs by decentralising them

Não existe um modelo único para a governança de AMPs que podem 'desenrolar' todas as AMPs em um Estado, país ou região: o foco sempre precisa ser na combinação de incentivos de governança para promover a efetividade e equidade em um contexto particular de AMPs.

Estudos de caso são extremamente úteis na identificação de combinações específicas de incentivos que parecem ser efetivos em abordar um tipo de conflito específico que pode ser transferido para outras AMPs, considerando contextos políticos/culturais/ecológicos/etc

Mas, um estudo de caso não deveria ser tomado como 'um modelo' a ser adotado para desenrolar todo um Estado, país ou região em particular

A vontade política e suporte do Estado é sempre crucial, incluindo para AMPs descentralizadas, lideradas por comunidades e privadas, pois isto é particularmente importante para prover a capacidade de fiscalização, dissuasão suficiente, etc – o Estado não pode desistir da responsabilidade pelas AMPs ao descentraliza-las

Cross-jurisdictional coordination between (and within) ministries is a particularly common challenge for the governance of MPAs: the ministry that designates a given MPA cannot effectively govern it without the cooperation of other ministries responsible for other impacting sectoral activities. Political will at a high level is often necessary to 'encourage' this.

Emerging technologies, such as iVMS and satellite monitoring, can make an important contribution to surveillance and contribute towards enforcement capacity, as well as potentially providing for market incentives (traceability, green marketing, etc),

but they need to be supported by a diversity of other incentives, particularly the judicial capacity to provide for successful prosecutions to deter others, and the political will to apply it.

Port State Measures Agreement (PSMA) has tremendous potential in this respect, both from an internationally coordinated legal deterrence perspective and blocking access to ports/markets

A coordenação inter-jurisdicional entre (e dentro) dos ministérios é um desafio particularmente comum para a governança de AMPs: o ministério que cria uma determinada AMP não pode efetivamente governa-la sem a cooperação de outros ministérios responsáveis por outras atividades setoriais impactantes. A vontade política em um alto-nível é frequentemente necessária para o 'encorajamento' disto.

Tecnologias emergentes, como o iVMS e monitoramento satelital, pode dar uma contribuição significativa para o patrulhamento e contribuir em direção da capacidade de fiscalização, assim como potencialmente prover os incentivos de mercado (rastreabilidade, marketing verde, etc),

Mas eles precisam ser sustentados por uma diversidade de outros incentivos, particularmente a capacidade judicial de prover acusações efetivas para deter outros, e a vontade política de aplica-la.

O Acordo sobre Medidas do Estado do Porto (PSMA) possui potencial tremendo neste quesito, tanto de uma perspectiva de coordenação legal internacional para a persuasão e o bloqueio do acesso a portos/mercados

There are no quick and easy fixes: no one MPA governance approach can be relied upon and it needs to be recognised that *Rome wasn't built in a day* – it takes many years (10-20) and <u>sustained</u> political will for an effective and equitable governance framework to evolve for a given MPA or network of MPAs, but approaches such as MPAG and other learning networks, *eg* MedPAN, IUCN Green List, can accelerate evolution

Não existem correções fáceis e rápidas: nenhuma abordagem de governança de AMPs pode sozinha ser confiada e precisamos reconhecer que *Roma não foi construída em um dia* – levam muitos anos (10-20) e vontade política _sustentada_ para um enfoque de governança equitativo e efetivo evolua para uma AMP específica ou rede de AMPs, mas abordagens como o MPAG e outras redes de aprendizado, ex., MedPAN, IUCN Green List, pode acelerar a evolução

Diversity is the key to resilience, both of species in ecosystems and incentives in governance systems
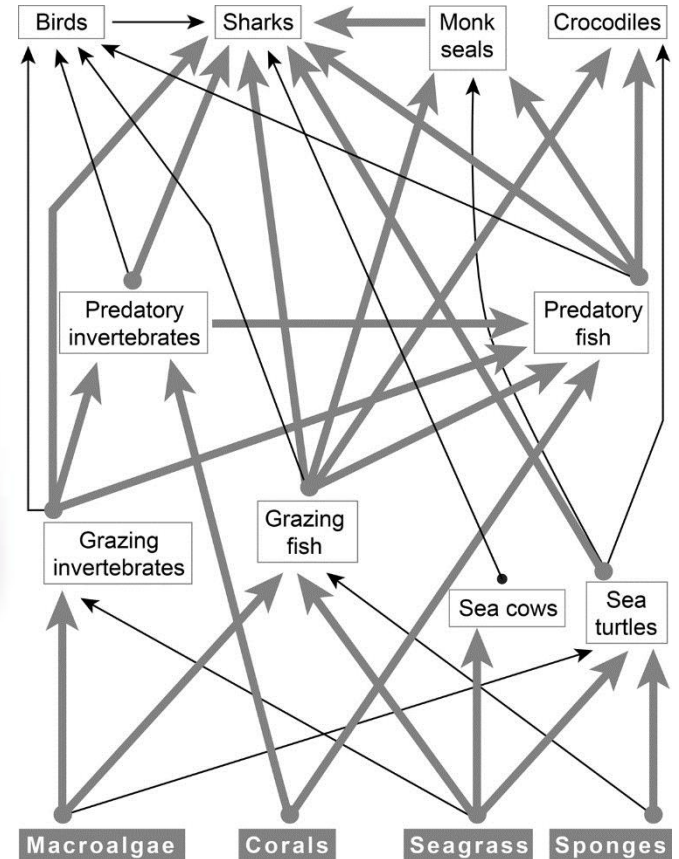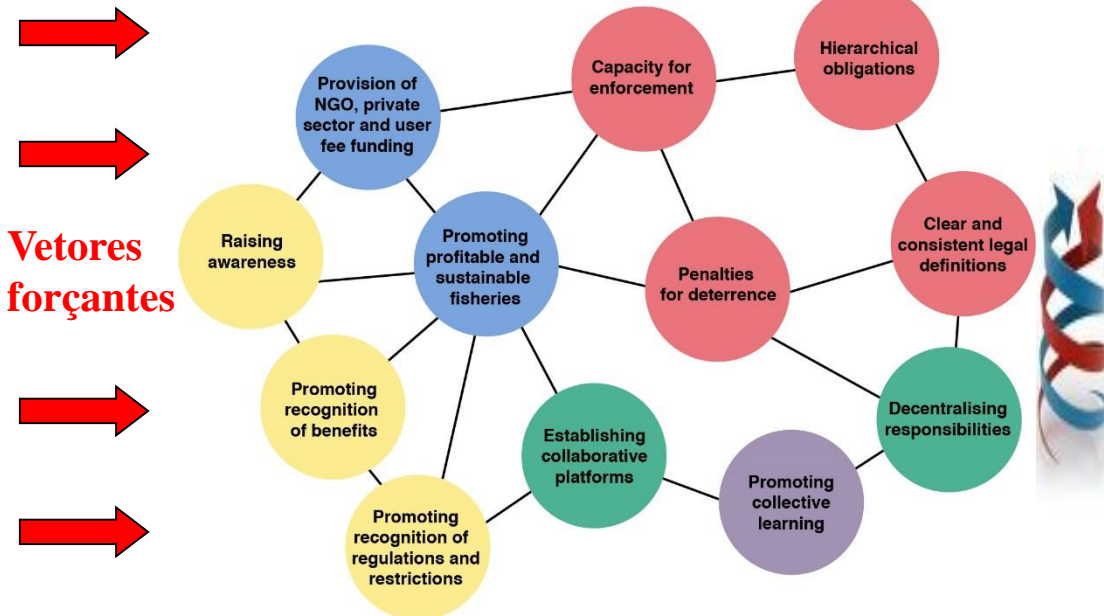

Driving forces
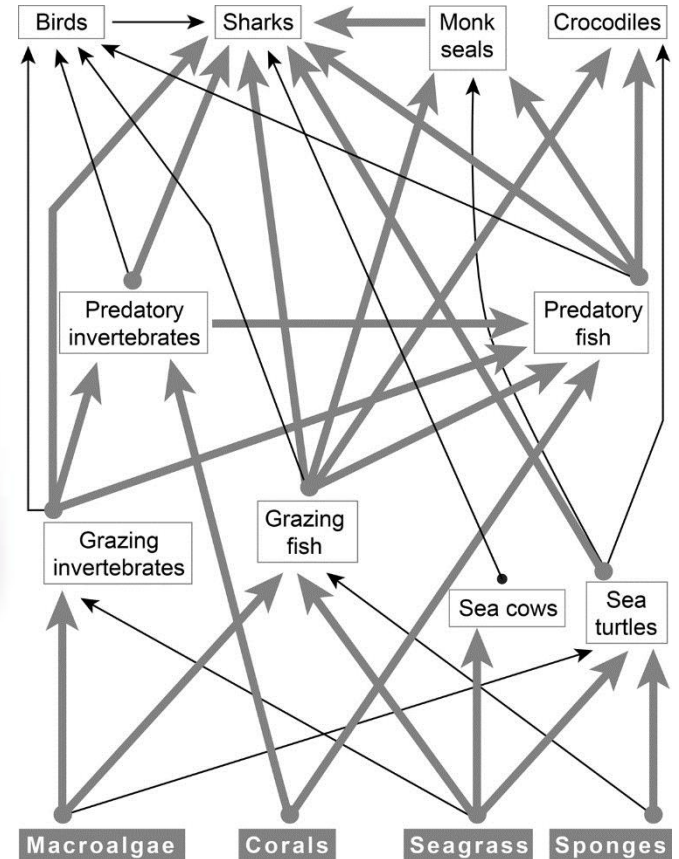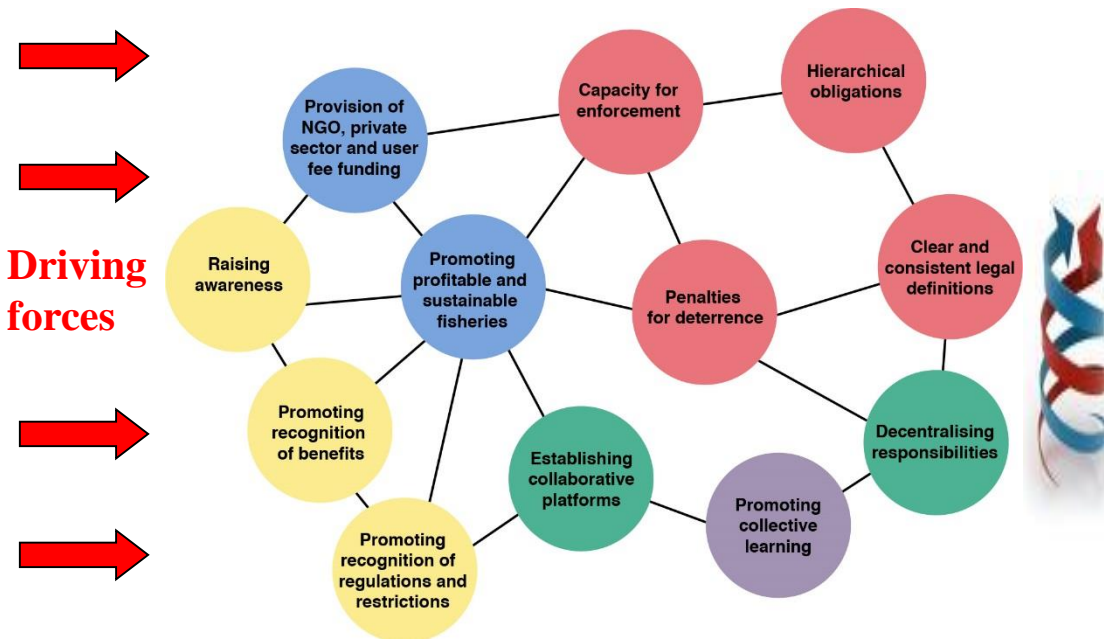
Jackson et al (2001) *Science*, 293, 629-638

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Diversidade é a chave para a resiliência, tanto para espécies em ecossistemas e incentivos em sistemas de governança

Vetores forçantes

Jackson et al (2001) *Science*, 293, 629-638

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