Governing marine protected areas: social-ecological resilience through institutional diversity

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#GoverningMPAs

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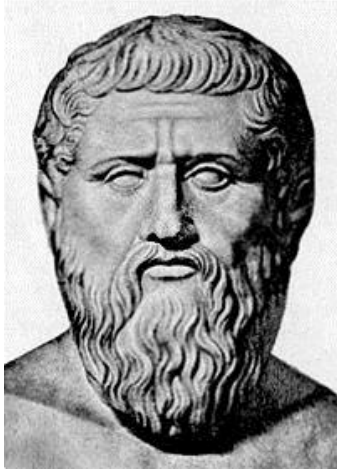
Governance = *steer* of people and the society they constitute in order to achieve strategic collective objectives



Plato, 360 BC

Resilience = capacity for stability in the face of potentially perturbing forces, *eg* climate change, population growth, globalisation

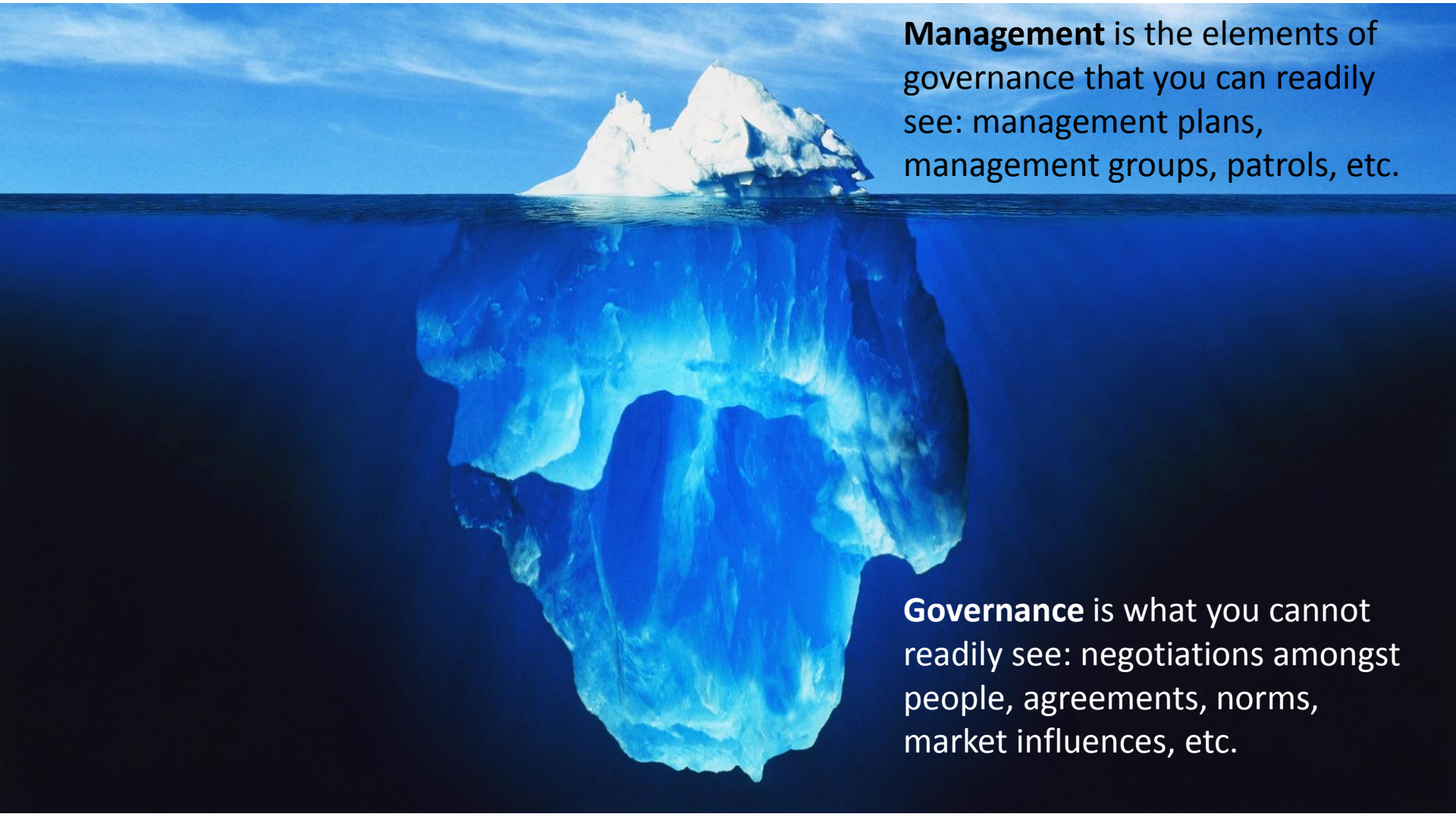
Where should the '*steer*' towards resilient social and ecological systems come from?

State control – government and law

Market forces – capitalism and economies

Public interests – people and civil society

Management and governance: there is no difference!

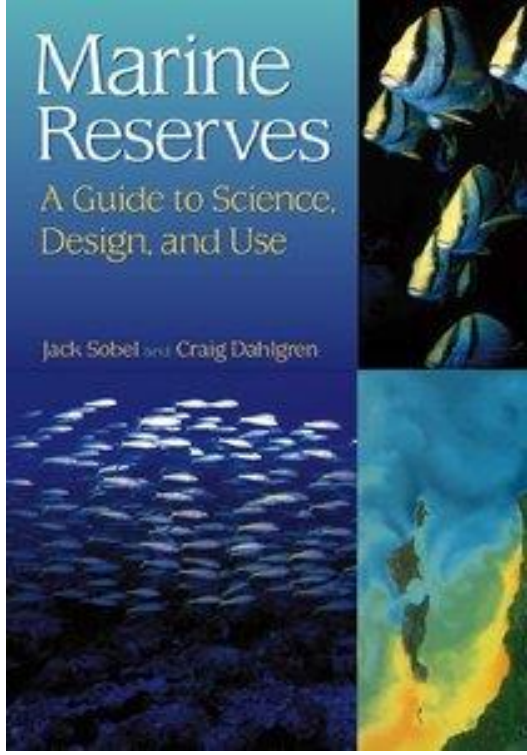


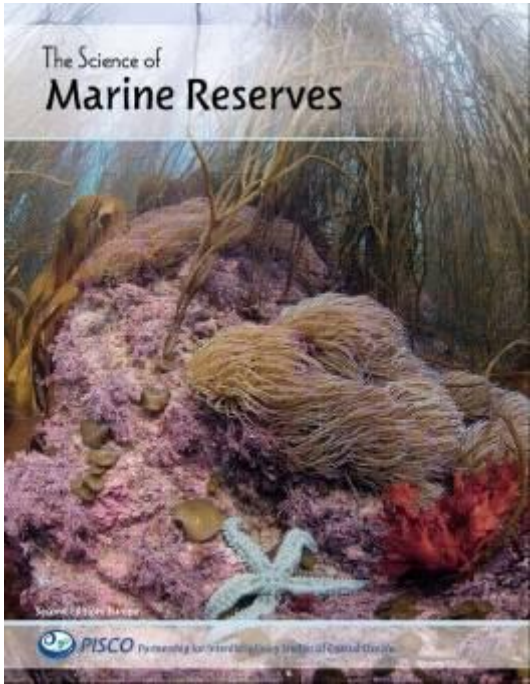
Marine protected areas (MPAs) are an ideal vehicle for exploring the effectiveness of different governance approaches in promoting social-ecological resilience

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** manage or **govern** MPAs



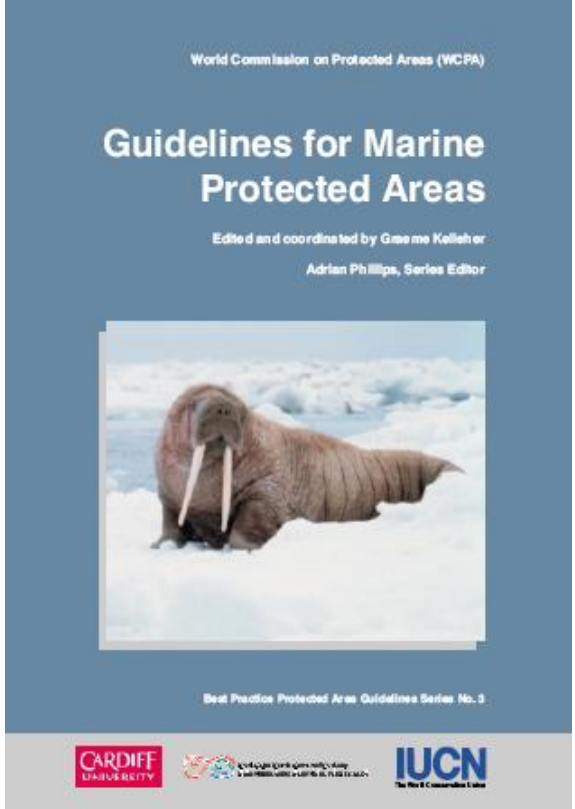


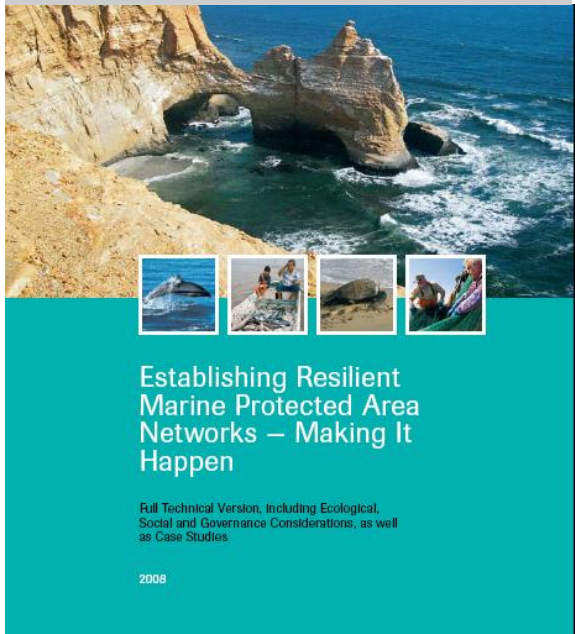
Co-management is the recommended approach

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

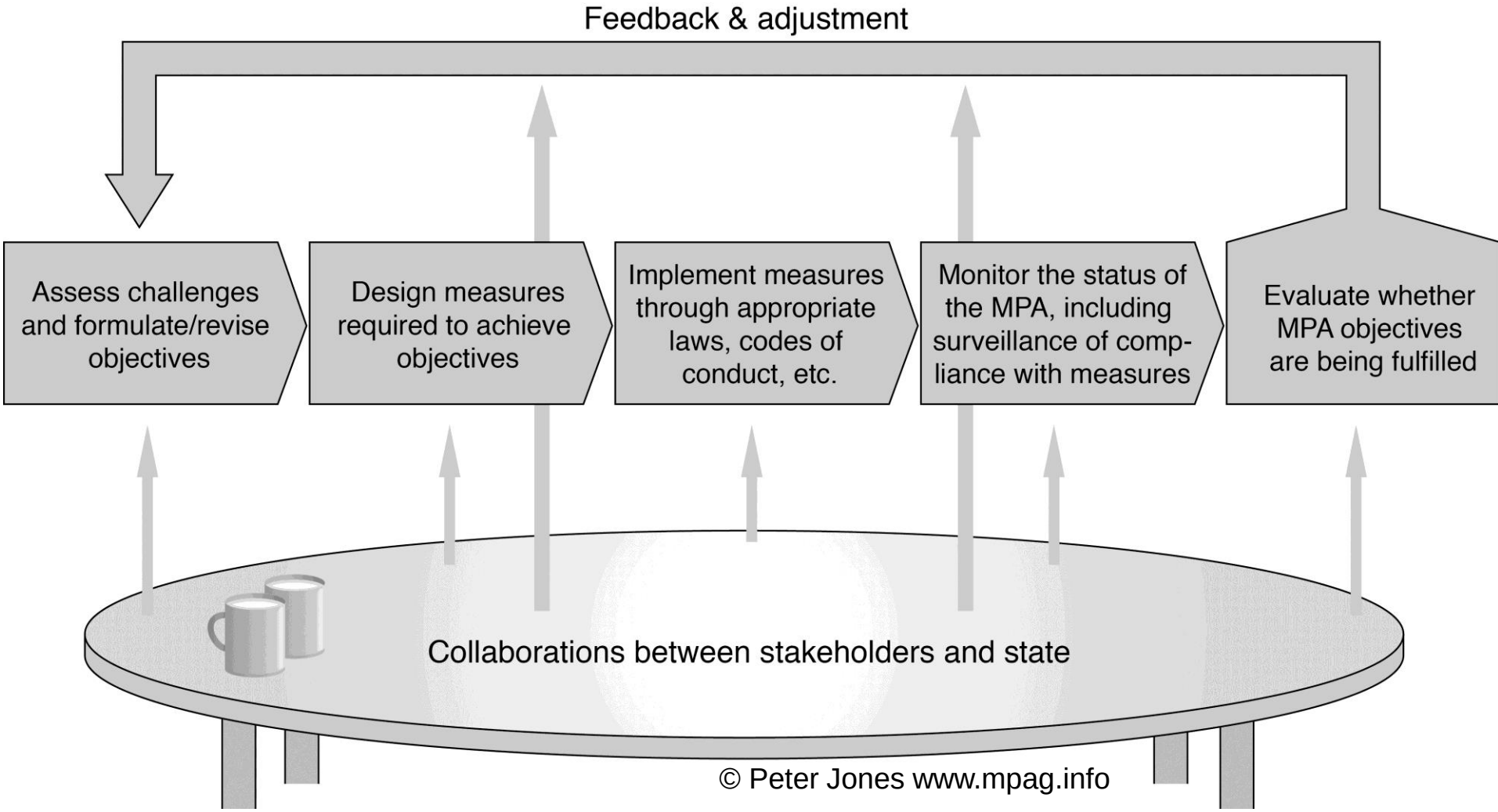
"design and management of MPAs must be both top-down and bottom-up" **(Kelleher 1999)**

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





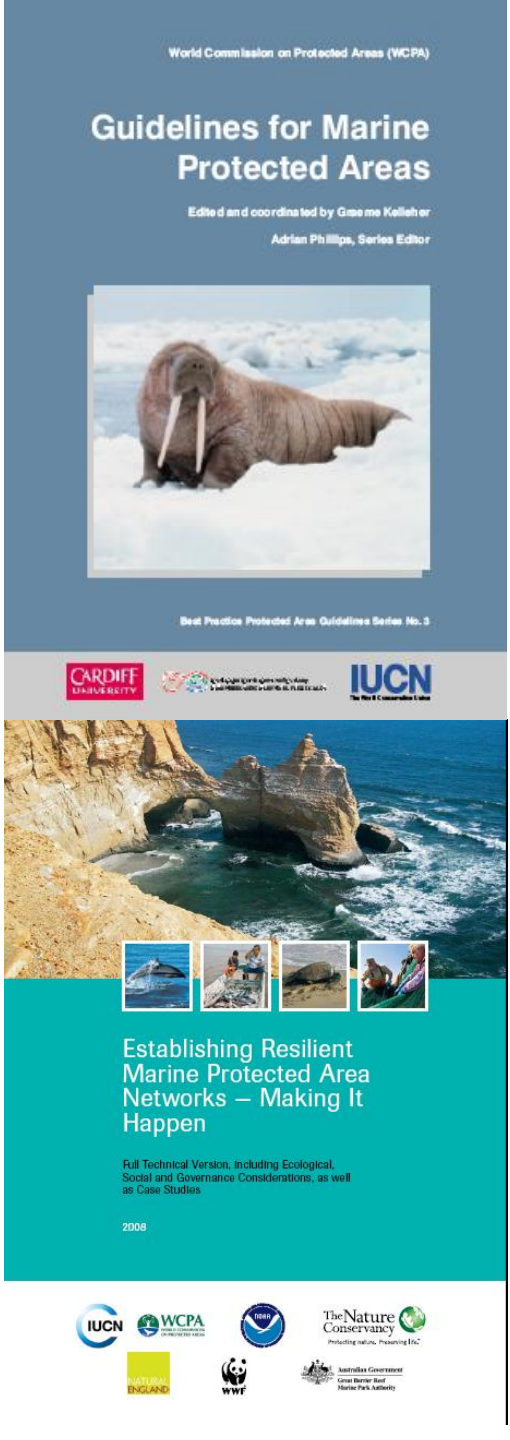
Adaptive co-management considered by many to be way forward

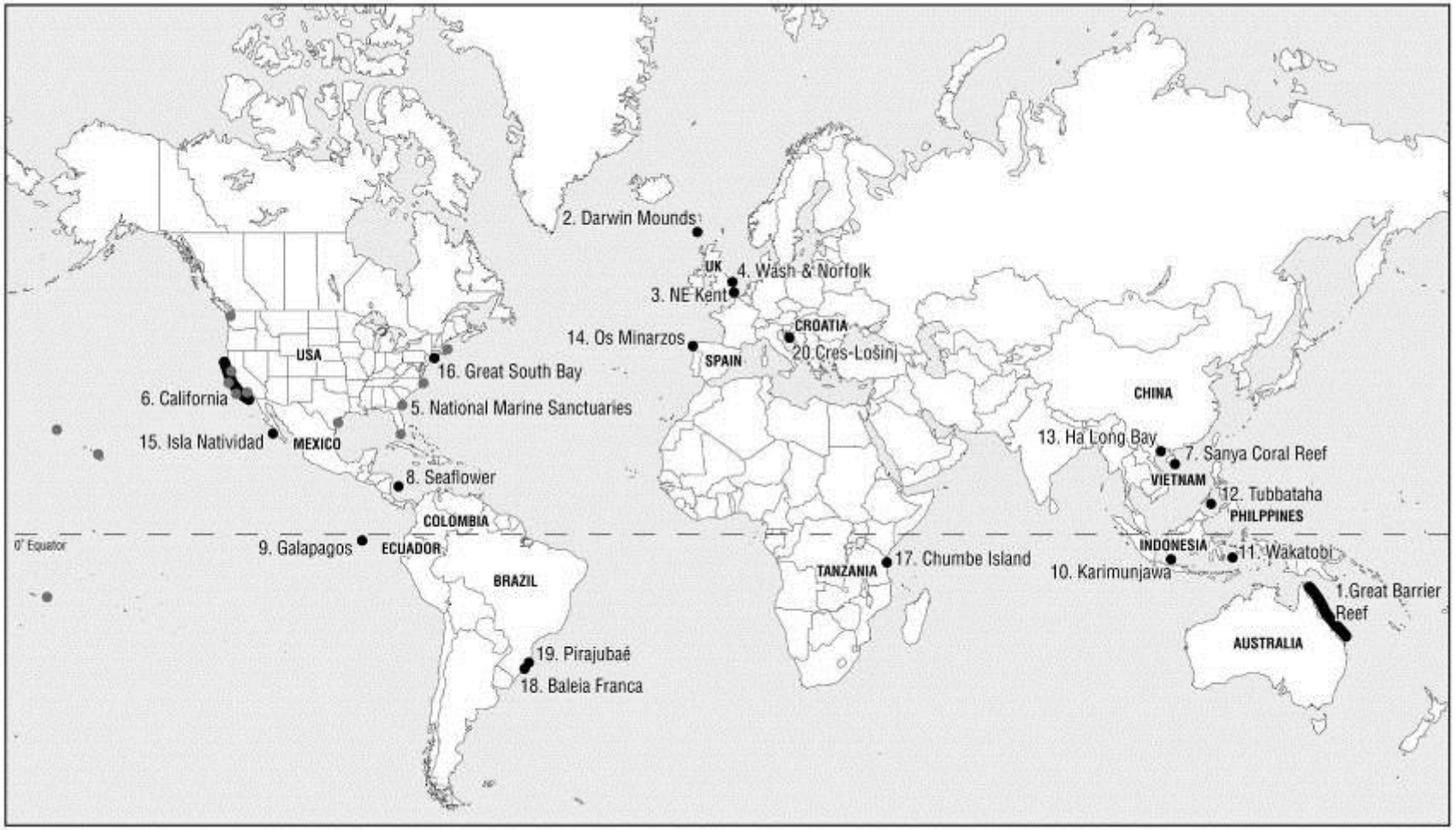


Too simplistic and linear to provide guidance on the **complex interactions** between stakeholders and the state in governance processes, **including the diversity of different priorities & values**

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

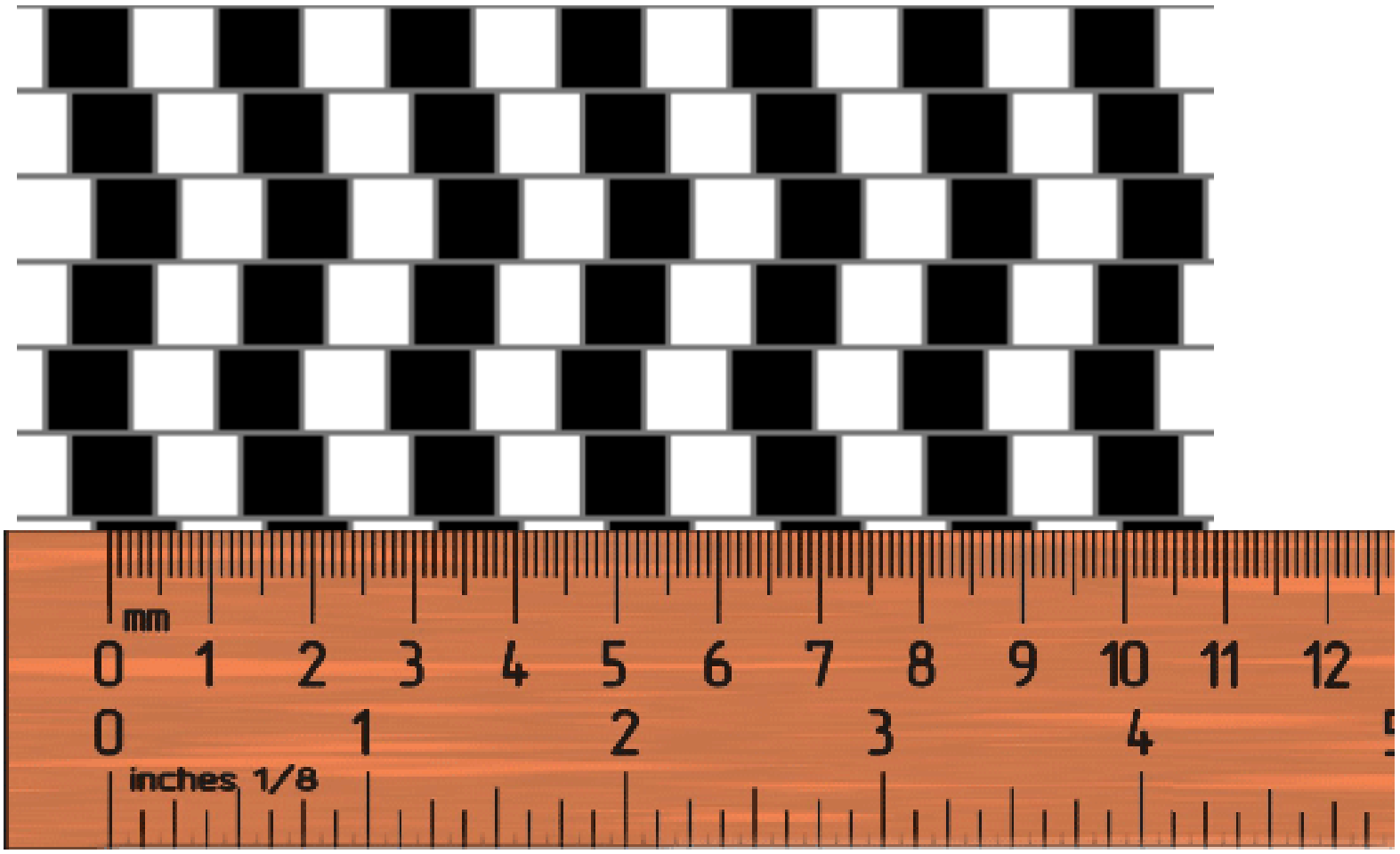




1: Great Barrier Reef Marine Park 2: Darwin Mounds Marine Special Area for Conservation
3: North East Kent European Marine Site 4: Wash & North Norfolk Coast European Marine Site
5: National Marine Sanctuaries (a network of MPAs with locations shown in grey colour)
6: California MPAs under the MLPA 7: Sanya Coral Reef National Marine Nature Reserve
8: Seaflower MPA 9: Galápagos Marine Reserve 10: Karimunjawa Marine National Park
11: Wakatobi National Park 12: Tubbataha Reefs Natural Park 13: Ha Long Bay World Heritage Site
14: Os Minarzos Marine Reserve 15: Isla Natividad MPA 16: Great South Bay Marine Conservation Area
17: Chumbe Island Coral Park 18: Baleia Franca Environmental Protection Area
19: Pirajubaé Marine Extractive Reserve. 20: Cres-Lošinj Special Zoological Reserve

MPAG workshop
12-16 Oct 2009
Mali-Lošinj
Croatia

UNEP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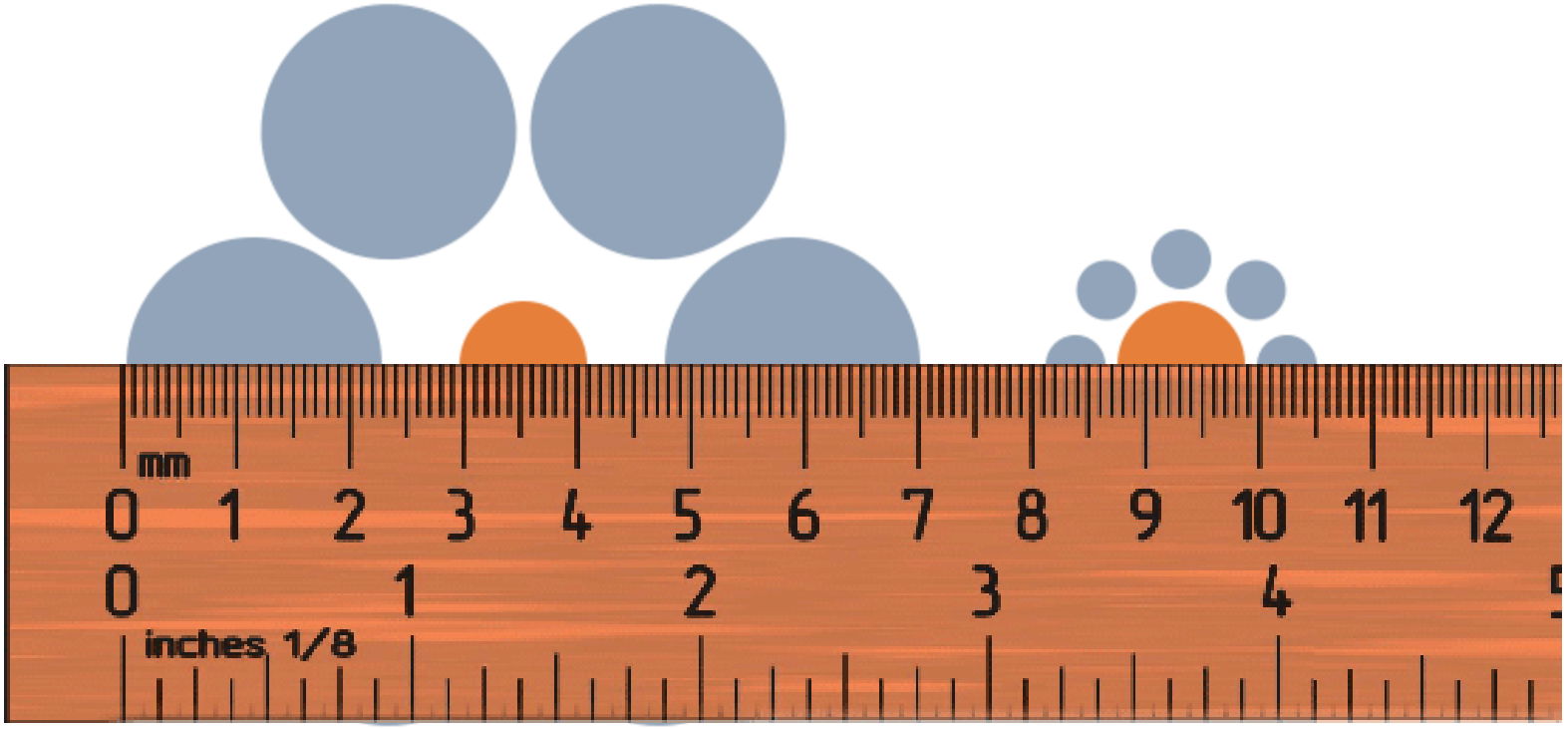
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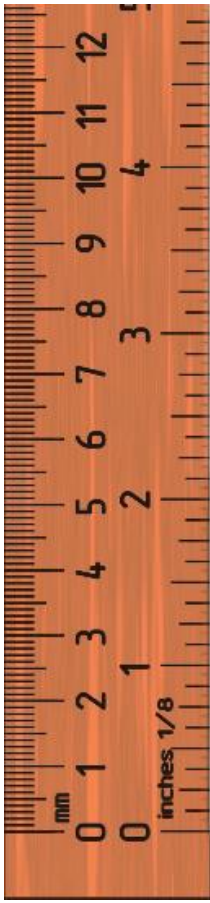
MPAG analytical framework [full outline]

- 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 (0-5)**
- Incentives **employed** & **needed**:

Economic
Interpretative
Knowledge
Legal
Participative



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

- Cross cutting themes: role of leadership, role of NGOs, equity issues

Case studies assigned to one of five 'governance approach' categories

Approach I - **government-led** (6 case studies)

Great Barrier Reef (Australia); Darwin Mounds, NE Kent; Wash/Norfolk Coast; (UK); National Marine Sanctuaries; California MPAs (US)

Approach II - **decentralised governance** (7 case studies)

Sanya (China); Seaflower (Columbia), Galapagos (Ecuador); Karimunjawa; Wakatobi (Indonesia); Tubbataha (Philippines); Ha Long Bay (Vietnam)

Case studies assigned to one of five 'governance approach' categories

Approach III - **community-led** (2 case studies)
Os Minarzos (Spain); Isla Natividad (Mexico)

Approach IV - **private-led** (2 case studies)
Great South Bay (US); Chumbe (Tanzania)

Approach V – **ineffective** (3 case studies)
Baleia Franca; Pirujabaé (Brazil); Cres-Lošinj (Croatia)

Another 22 case studies since undertaken

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

Interpretative incentives: promoting awareness of the conservation features of the MPA, the related objectives for conserving them, the policies for achieving these objectives and support for related measures (3)

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

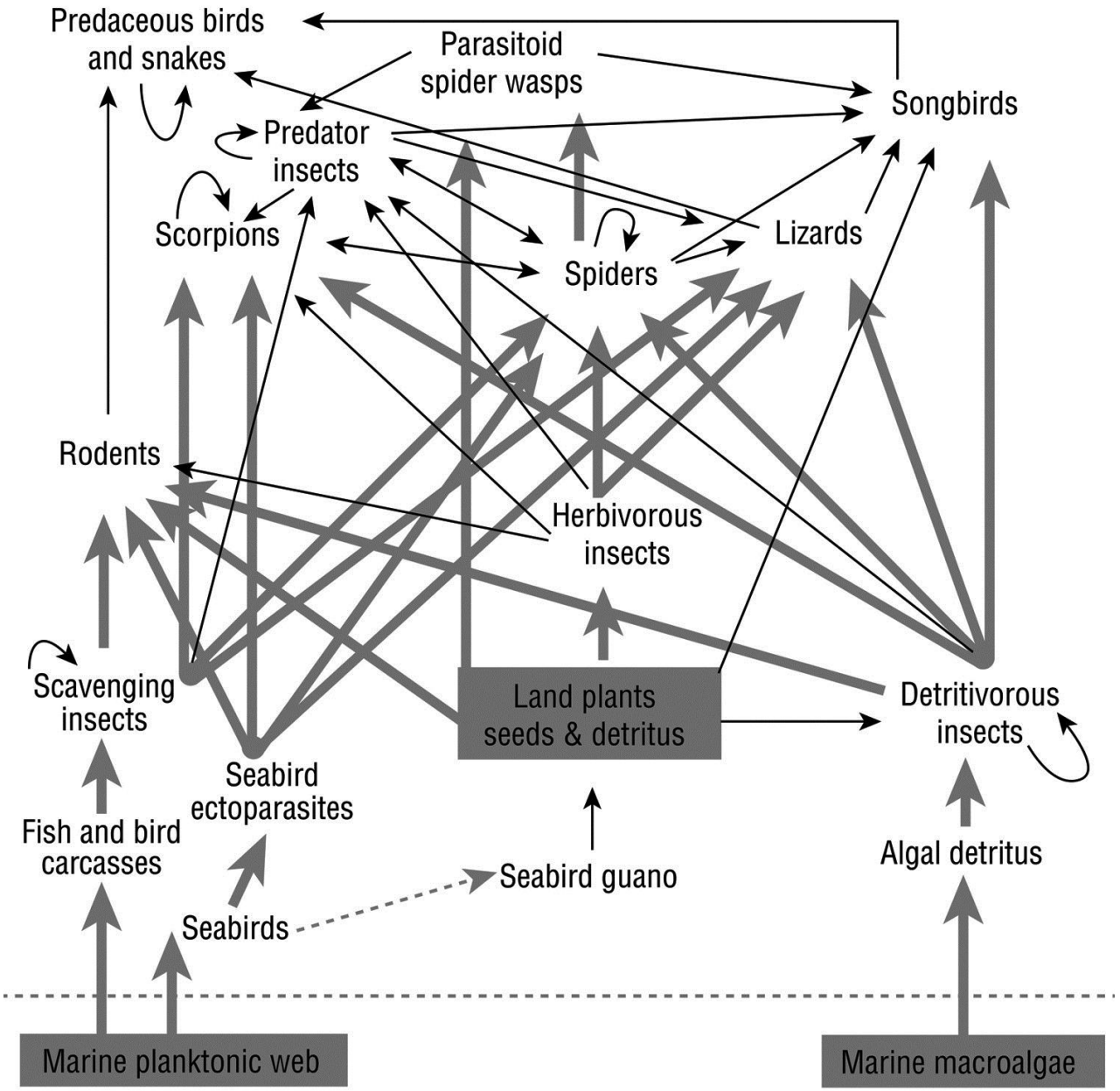
Legal incentives: use of relevant laws, regulations etc. as a source of 'state steer' to promote compliance with decisions and thereby the achievement of MPA obligations (10)

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


Mike Markovina/Marine Photobank

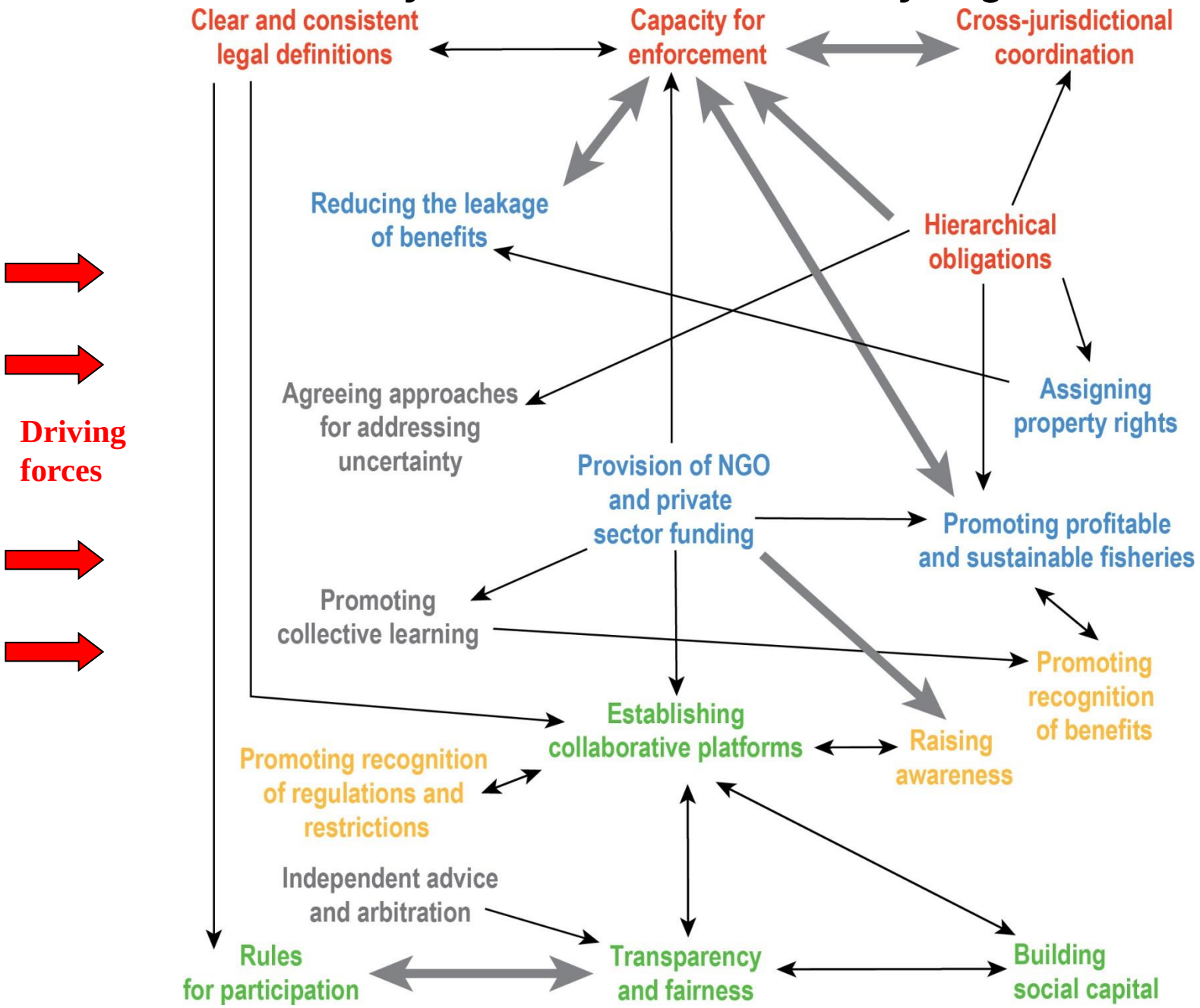

James Cervino

What key attribute confers stability in ecosystems?



Polis (1998) *Nature* **395**(6704), 744-745

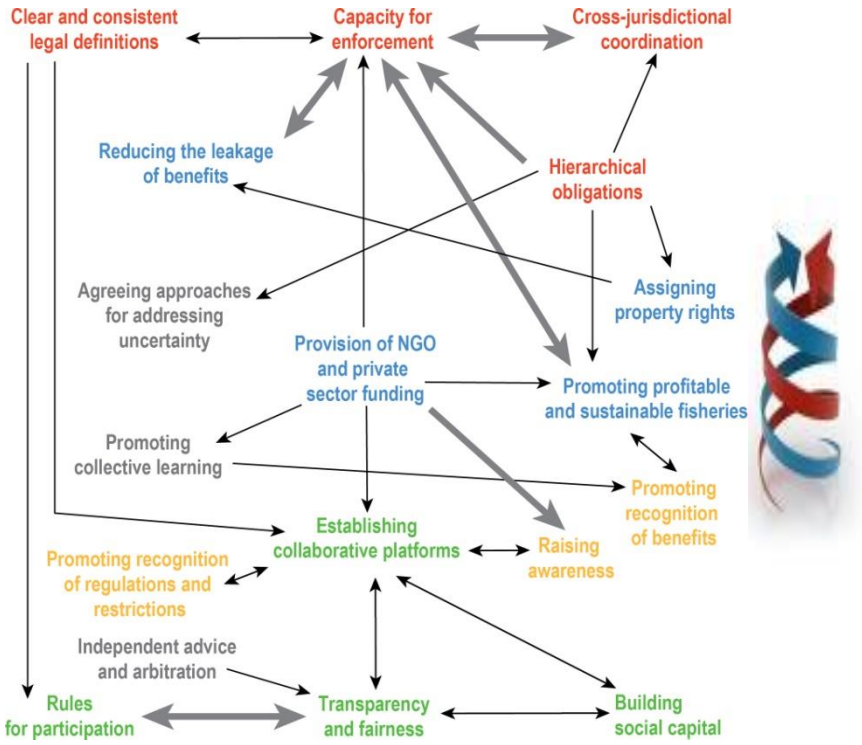
What key attribute confers stability in governance systems?

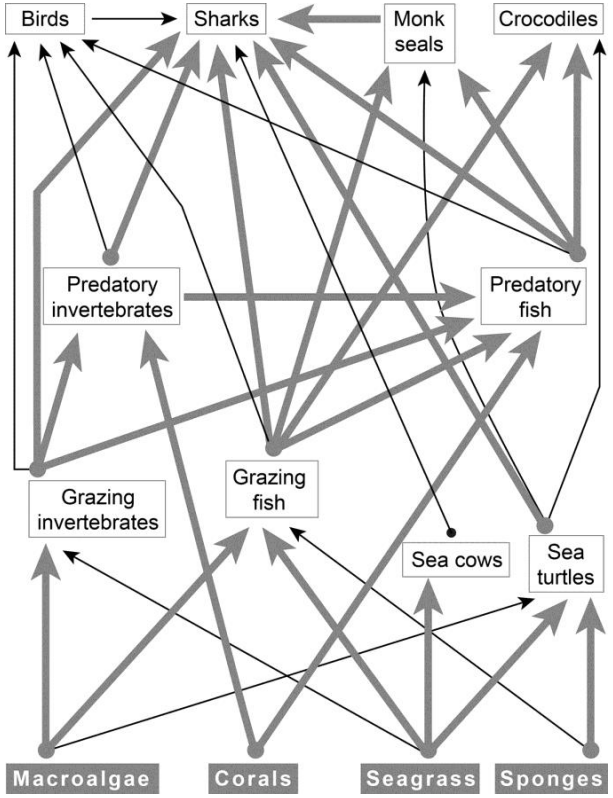


Incentive diversity → more resilient governance framework → increased effectiveness of MPA → increased biodiversity → more resilient ecosystem → increased ecosystem services: fish catches, tourism, coastal defence, etc → more resilient social system →

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 episodes related to ocean warming: increased survival and recovery rate;

Larval export promoted replenishment of populations in fished areas

Chumbe (Tanzania)

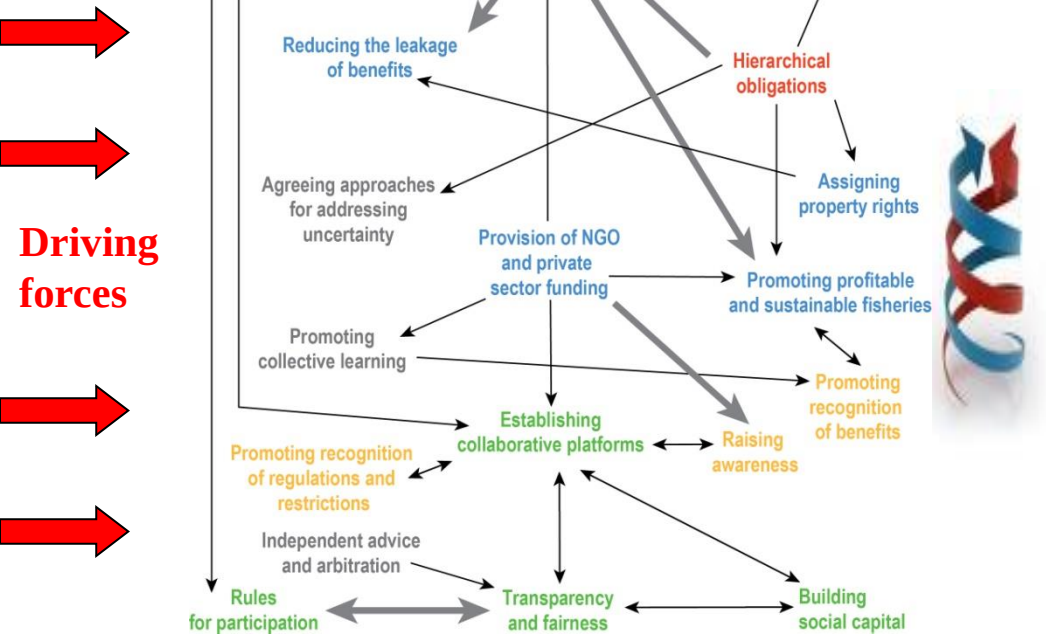
Coral reefs in no-take MPA less impacted by coral bleaching and recovered sooner: considered most resilient in Western Indian Ocean

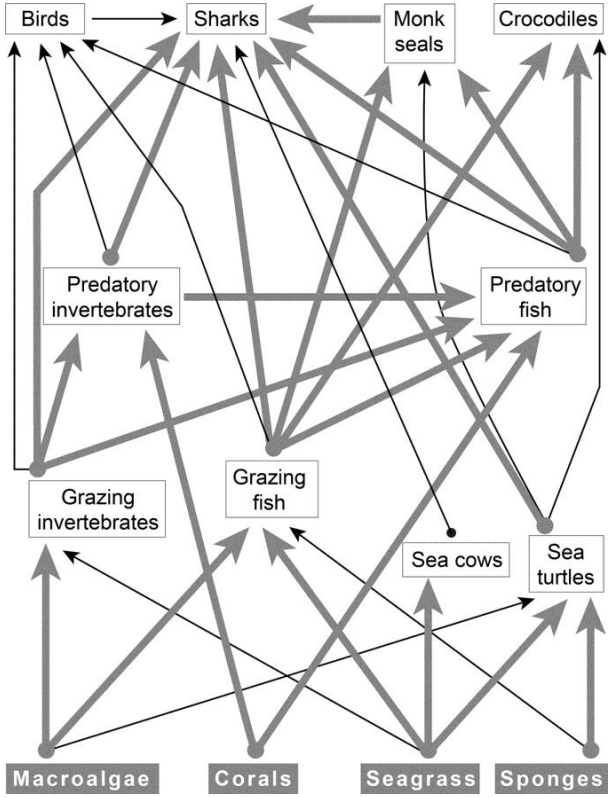
In the face of strong driving forces, the combined use of a diversity of inter-connected incentives makes MPA governance frameworks more resilient.

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





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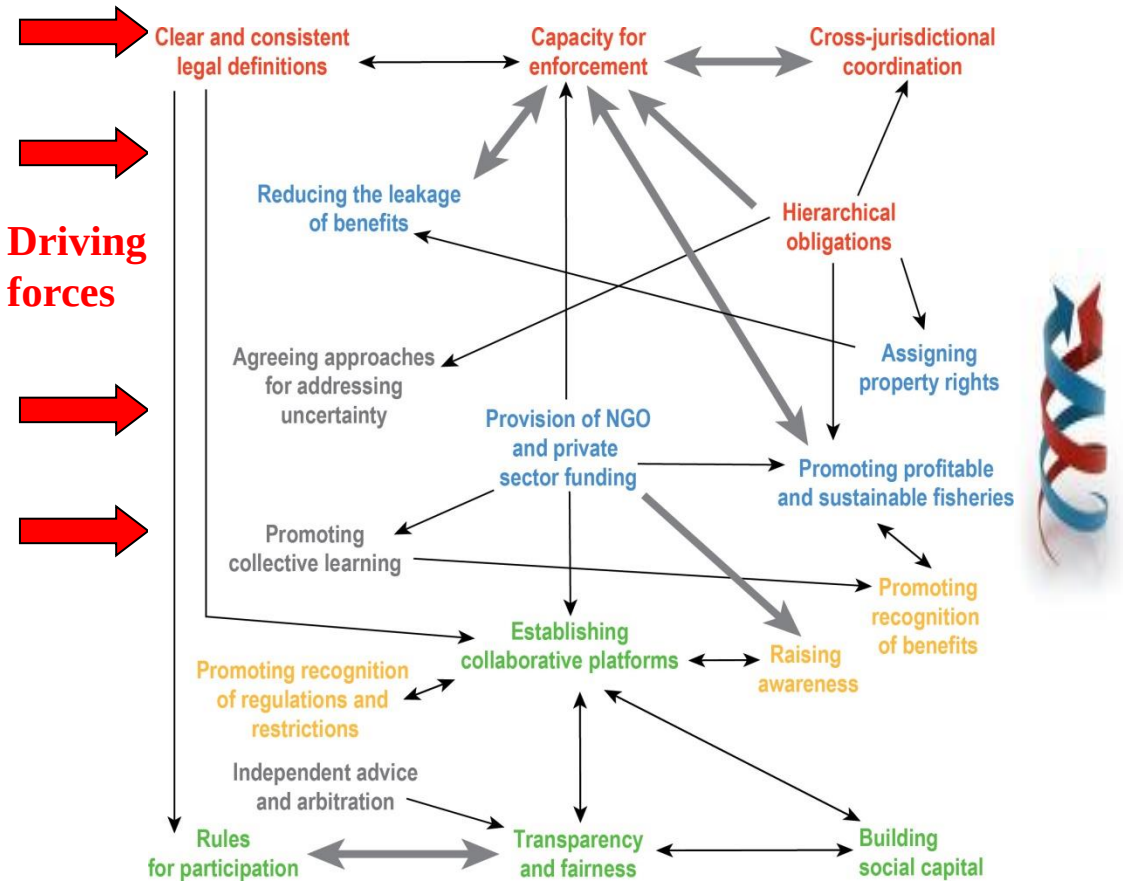
Systematic way of '**deconstructing**' MPA governance into different categories of incentives and governance approaches

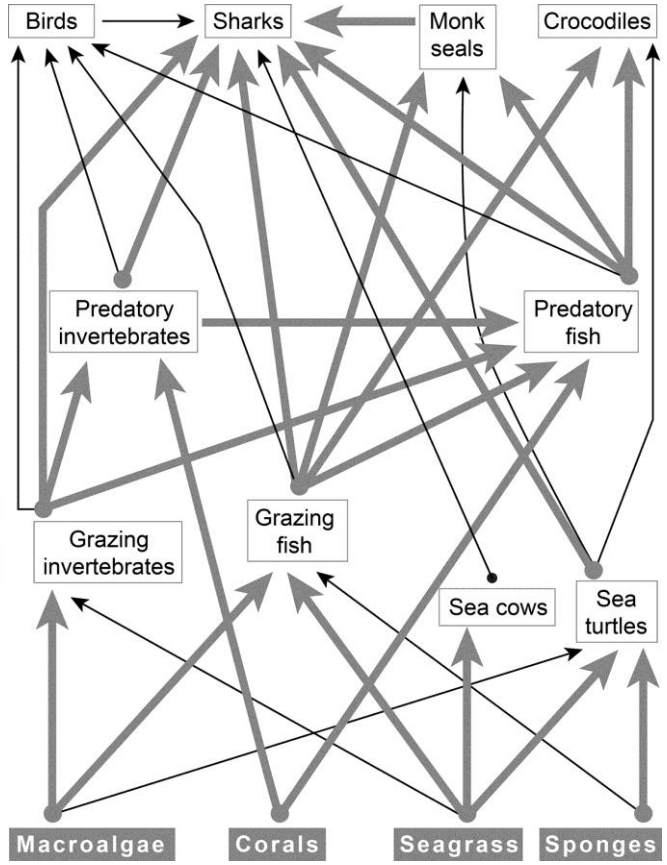
MPAG analysis framework can be applied on a **meta-analysis** basis to a larger sample of MPA case studies

Guidance for assessing governance issues in any given MPA and transferring 'good practice'

More realistic theoretical and empirical framework for studies related to wider natural resource governance

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





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