

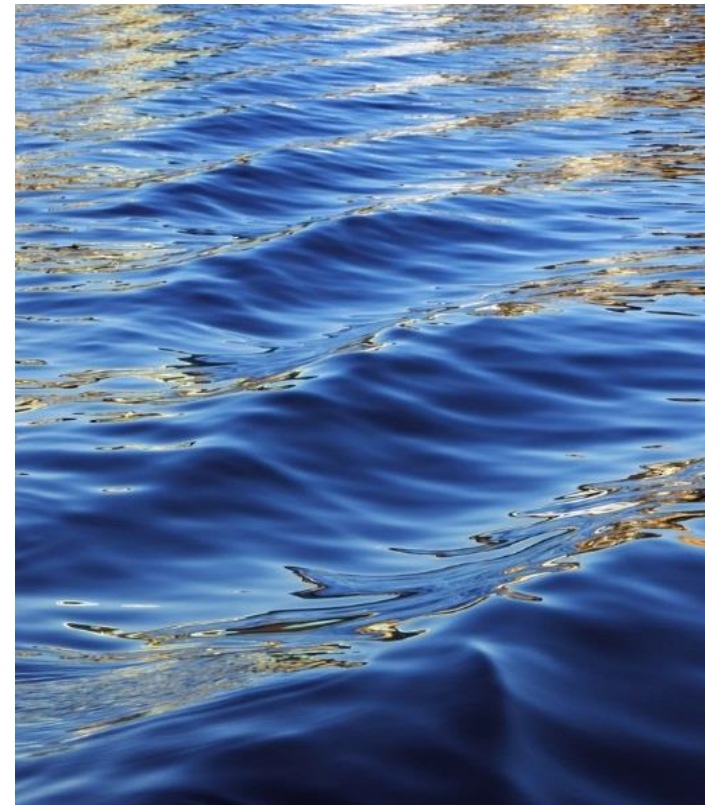
7.–8. nóvember í Hörpu

**Stjórnun
fiskveiða**

– svo miklu meira en kvóti

Fisheries management and sustainability, abroad

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2024

What is a fisheries management system?

Hvað er fiskveiðistjórnunarkerfi?

A **management system** (stjórnkerfi) is a set of **policies**, **processes** and **procedures** (stefnur, ferlar og verklagsreglur) used by an organization to ensure that it can fulfill the tasks required to achieve its objectives (Wikipedia).

Policies in fisheries management often include issues of:

1. **Sustainable use** of commercial resources for current and future needs (sjálfbær nýting auðlinda, núna og í framtíðinni)
2. **Efficient use** (hagkvæm nýting) of commercial resources
3. **Conservation** (vernd) of ecosystem services
4. **Resource sharing** (deiling auðlinda)
5. **Community support** (stuðningur samfélagsins)



5 key principles of sustainability for food and agriculture (lykilhugmyndir sjálfbærni)



Increase productivity, employment and value addition in food systems

Auka framleiðni, atvinnu og verðmæti



Protect and enhance natural resources

Vernda og bæta náttúruauðlindir



Improve livelihoods and foster inclusive economic growth

Bæta lífsskjör og efla samfélagslegan efnahagsvöxt



Enhance the resilience of people, communities and ecosystems

Auka seiglu fólks, samfélaga og vistkerfa



Adapt governance to new challenges

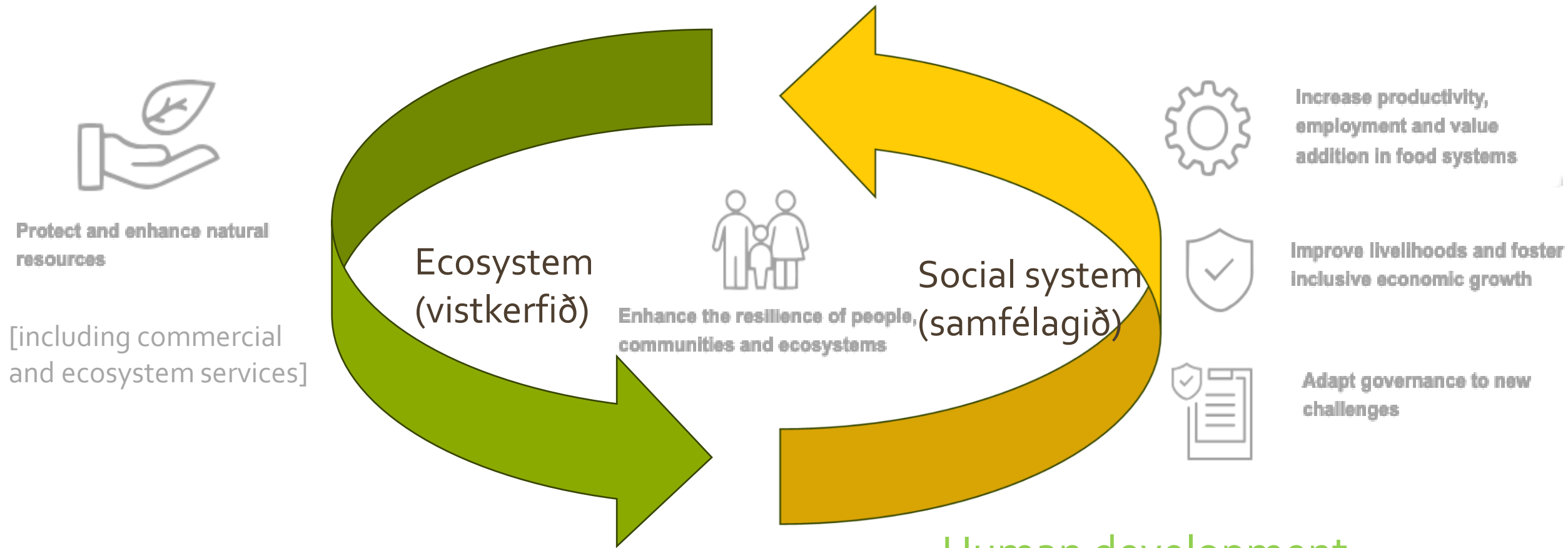
Aðlagja stjórnsýslu að nýjum áskorunum



Principles from: <https://www.fao.org/sustainability/background/en/>

United Nations, Food and Agricultural Organization (FAO)
Sameinuðu þjóðanna, Matvæla- og landbúnaðarstofnun

Social-ecological systems → ecosystem-based management



Human development
is a component of
sustainability

Principles from: <https://www.fao.org/sustainability/background/en/>
United Nations, Food and Agricultural Organization (FAO)
Sameinuðu þjóðanna, Matvæla- og landbúnaðarstofnun

Management systems are a component of the social system.

Stjórnkerfi eru hluti af félagskerfinu.

They cannot be viewed in isolation, rather they both result from society and affects society, and is therefore embedded in history, culture, political, economic, and environmental context.

For example, many industrialized nations, including Iceland, have fisheries management systems that were created to divert an on-going Tragedy of the Commons.



Governing the Commons, 1990



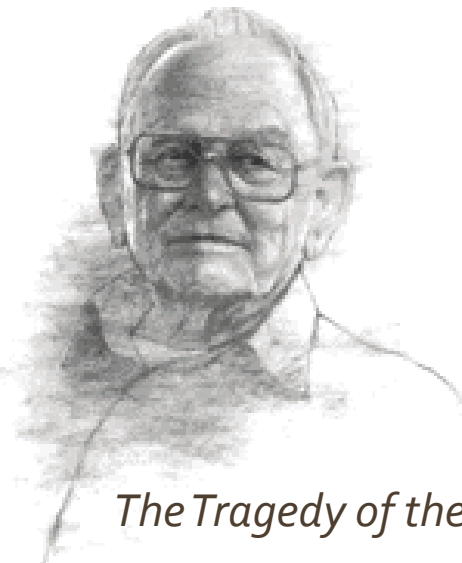
Cooperation

(Samvinna – getur verið sjálfbær)



Selfishness and Competition

(Samkeppni - Ósjálfbær?)



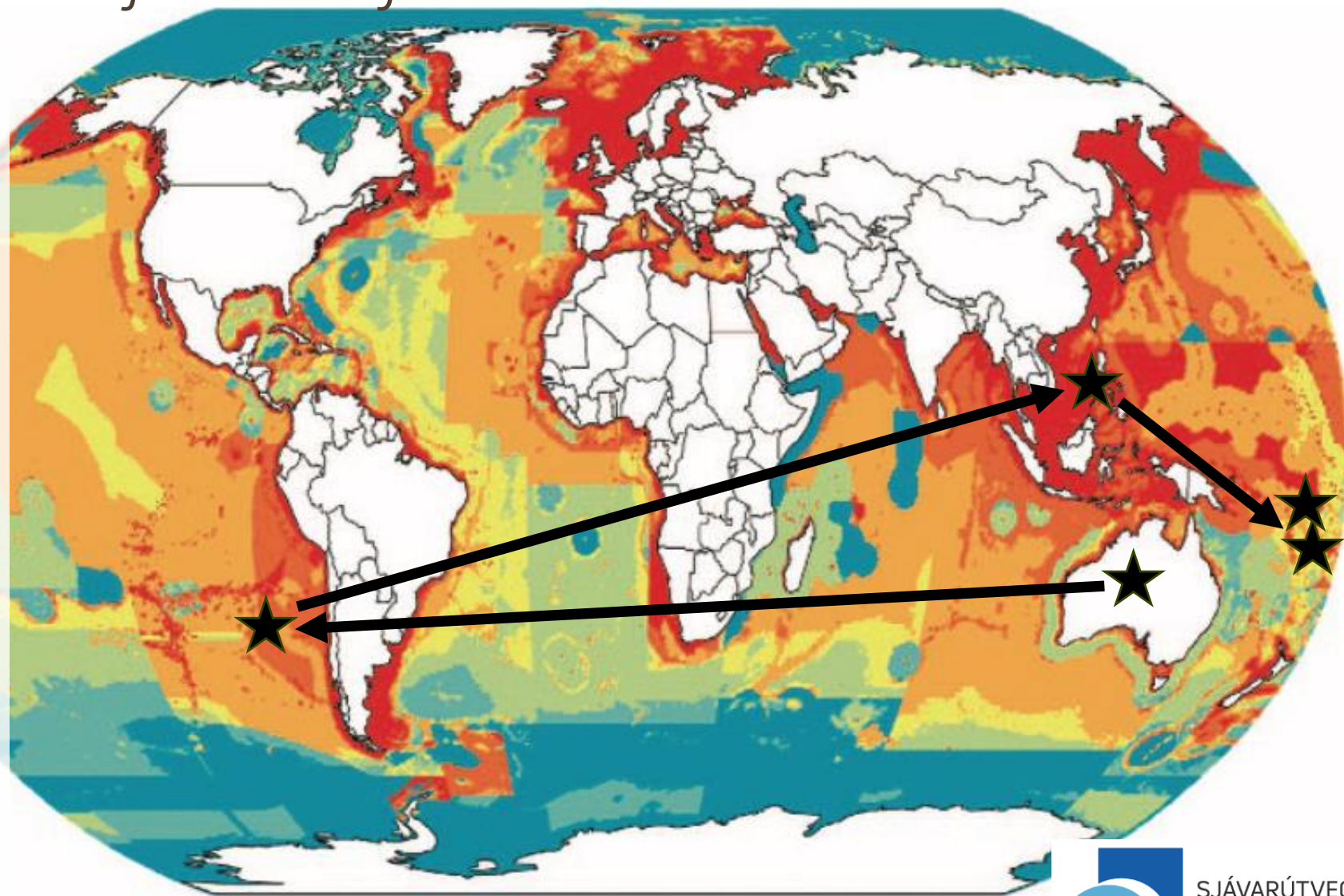
The Tragedy of the Commons, 1968

Garrett Hardin, source: www.science.org/doi/10.1126/science.280.5364.682

What do other fisheries management systems abroad look like?

Hvernig líta önnur fiskveiðistjórnunarkerfi erlendis út?

1. Australia: like Iceland, but not...
2. Other forms of resource sharing: TURFs in Chile
3. A focus on conservation: co-management the Phillipines
4. Borrowing from cultural heritage: community-based resource management in the Soloman Islands
5. Sharing internationally: Parties to the Narau Agreement



Australia..... like Iceland, but not

Similarities to Iceland

- 1990s reforms: harvest control rules and individual transferable quotas
- Species-based advice, with management strategy evaluation
- Widespread recognition of social objectives and social license
- Fisheries Minister and Environment Minister

Differences

- Not heavily dependent on fishing
- Advice includes environmental evaluations
- Science advice is provided to a committee including main stakeholders, who then advises to the AFMA
- Includes some examples of collaborative partnership approaches to **co-management**

Australian Fisheries Management Authority (AFMA): experiments in co-management

Aims

- Reduce complexity, simplify regulations
- Streamline business
- Increase compliance (through peer pressure)
- Better control and monitoring by fishers
- Increase accuracy and timeliness of information (including local knowledge) for decision-making
- Reduce (not shift) costs
- Increase industry stability
- Maintain credibility (with external stakeholders)

Ideal conditions

- Clear objectives and receptive culture in authorities
- Motivated and cohesive fishing industry, financially viable, organized administration and/or access to range of knowledge or skills
- Good working relationship between authorities and industry, conflict resolution systems
- Solid legal foundation
- No social/community conflict associated with fishery

Mazur, N 2010, Evaluating fisheries co-management trials: a discussion paper, Bureau of Rural Sciences, Canberra

Nursey-Bray, M., Fidelman, P., & Owusu, M. (2018). Does co-management facilitate adaptive capacity in times of environmental change? Insights from fisheries in Australia. *Marine Policy*, 96, 72-80.

Australia: Northern Prawn Fishery; Spencer Gulf Fishery

- Northern Prawn: 5.000 – 10.000, 52 vessels, 8 shrimp species. One of Australia's most valuable federally managed fisheries
- Spencer Gulf: 2.000-4.0000, 39 vessels, 1 shrimp species.
- Sets total allowable effort based on **maximum economic yield, individual transferrable effort**, season length limitations, number of vessels, total gear length, past buy-back schemes
- Industry association responsible for real-time data collection and scientific and crew-based observation
- Manage fishery information and advisory role
- Real-time trigger for fishery season closure, monitored and/or administered by industry

Basham, H.D. 2020. Fisheries Management Series paper number 78: Management Plan for the South Australian Commercial Spencer Gulf Prawn Fishery



Pictures: <https://www.fish.gov.au/>

Territorial Use Rights Fisheries (TURFS) in Chile: another form of resource sharing - Landsvæðanotkunarréttur

Moreno A. and Revenga C., 2014. The System of Territorial Use Rights in Fisheries in Chile, The Nature Conservancy, Arlington, Virginia, USA. 88 pp.

MAP 1: REGIONS OF CHILE



Territorial Use Rights Fisheries (TURFS): Chile

Benefits...

- Promoted the formation of fishing associations
- improved communication among fishers, with scientists, and with the state
- Increased understanding, awareness, and stewardship
- Sometimes supported economic stability and income diversification



PHOTO 1. Small-scale artisanal boats and fishermen, Region XIV, Los Ríos.



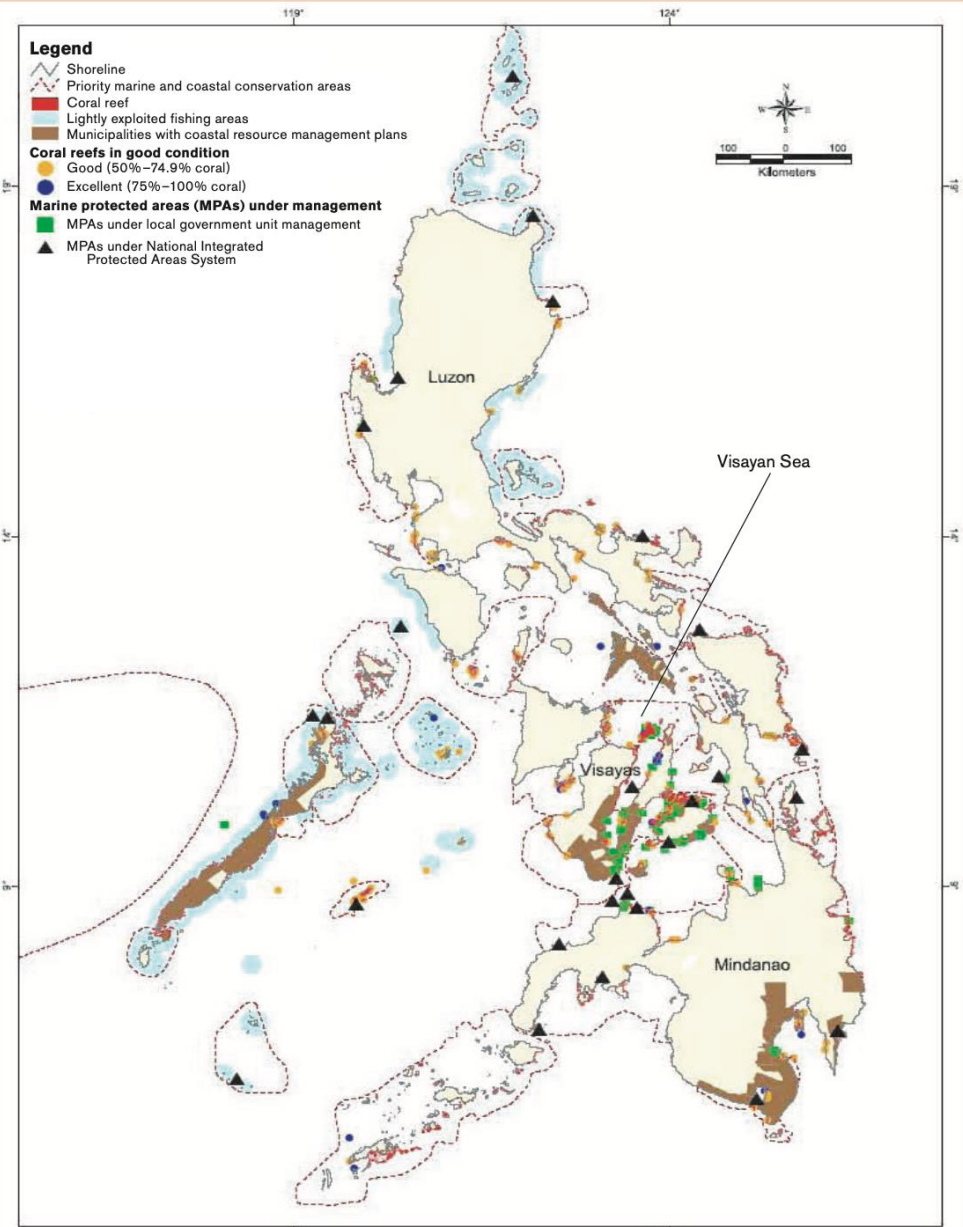
PHOTO 3. Mid-scale artisanal boats. Region XIV, Los Ríos.

... but with limitations

- Limitations due to:
 - spatial variation in spread of valuable resources,
 - high operational costs (enforcement, administration, consulting)
 - Limited capacity for value creation and market access
 - Weak enforcement by state and sometimes by association
 - Data poor, difficult to assess, no formal periodic review
 - Can't expand to consider other needs, problems, aspirations, trade-offs In local communities
- Improvements could be:
 - better design in ecological connections and sizes necessary to prevent overfishing,
 - including no-take reserves

Moreno A. and Revenga C., 2014. The System of Territorial Use Rights in Fisheries in Chile, The Nature Conservancy, Arlington, Virginia, USA. 88 pp.

Figure 1. The Philippines and Visayan Sea



Co-managed no-take reserves in the Philippines: a focus on conservation



Alcala, A. C., & Russ, G. R. 2006. No-take marine reserves and reef fisheries management in the Philippines: a new people power revolution. *AMBIO*, 35, 245-254.

Fernandez, P. R. (2009). The sea around the Philippines: Governance and management for a complex coastal ecosystem. *Environment: Science and Policy for Sustainable Development*, 51, 36-51.

Co-management: no-take reserves in the Philippines

Expansion ...

- Began from a conservation and education program
- Expanded to include development (e.g., alternative livelihoods and family planning)
- Included trained facilitators in community preparation and organization.
- Spread across coastal communities, where now ~1000 reserves (Weeks et al. 2009) exist among the 832 coastal municipalities that border 36,000 km of coastline.
- Some integrated into more central programs, co-management in centralized fishery law (joint jurisdiction between central government and coastal communities out 15 km)

Alcala, A. C., & Russ, G. R. (2006). No-take marine reserves and reef fisheries management in the Philippines: a new people power revolution. *AMBIO: A Journal of the Human Environment*, 35(5), 245-254.

... but with mixed results.

- Sometimes problems persist:
 - Poverty persists
 - Power imbalances, corruption
 - Weak enforcement offshore, loopholes
 - Lack of continuity
 - Need for greater livelihood diversification
- But, good developments also:
 - formation of Fisheries and Aquatic Resources Management Councils at the village, municipal, and intermunicipal levels, which aid in advising local ordinances and guidelines and can promote social equity and stewardship

Fernandez, P. R. (2009). The sea around the Philippines: Governance and management for a complex coastal ecosystem. *Environment: Science and Policy for Sustainable Development*, 51(3), 36-51.

Community management, borrowing from customs and tradition: Solomon Islands



Photos: Þór Ásgeirsson, Director of the GRÓ-FTP

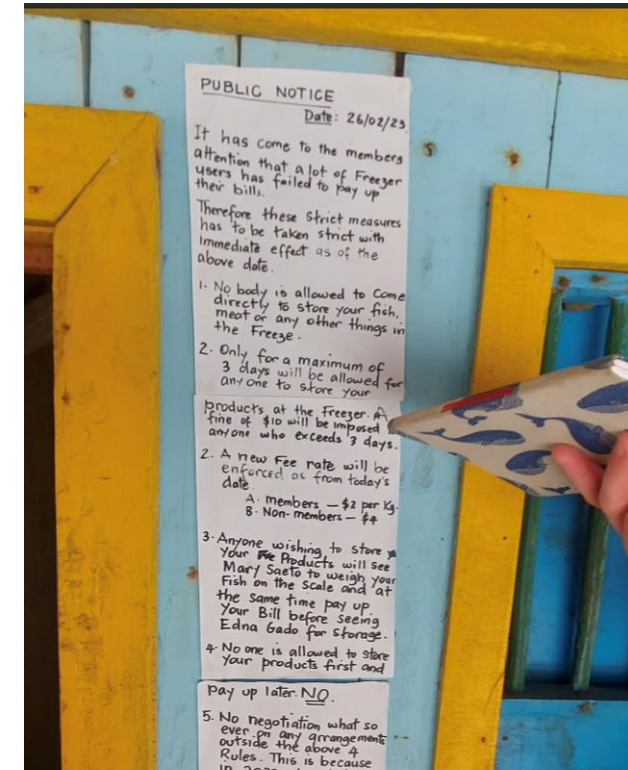
Philippa Cohen, Louisa Evans, and Hugh Govan. Chapter 3: Community-Based, Co-management for Governing Small-Scale Fisheries of the Pacific: A Solomon Islands' Case Study. 2015. S. Jentoft, R. Chuenpagdee (eds.), *Interactive Governance for Small-Scale Fisheries*, MARE Publication Series 13, DOI 10.1007/978-3-319-17034-3_3



Community management, borrowing from customs and tradition: Solomon Islands



Photos: Þór Ásgeirsson, Director of the GRÓ-FTP



Abernethy, K. E., Bodin, Ö., Olsson, P., Hilly, Z., & Schwarz, A. (2014). Two steps forward, two steps back: The role of innovation in transforming towards community-based marine resource management in Solomon Islands. *Global Environmental Change*, 28, 309-321.

Community management, borrowing from customs and tradition: Solomon Islands

Emergence aided by...

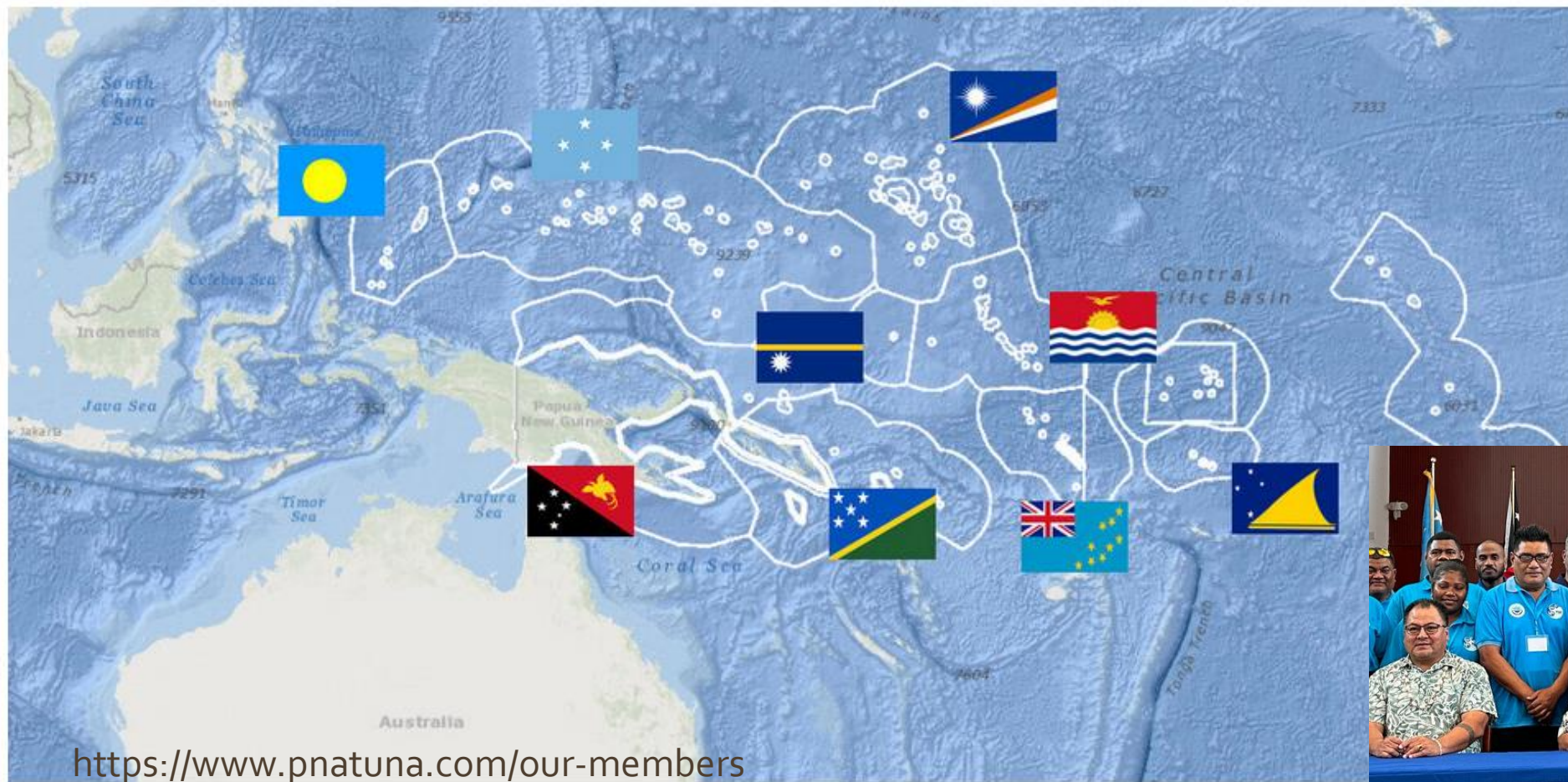
- Matching system to known social problems
- Strong continual interactions between key actors and the community; eg community awareness groups
- Community members witnessing benefits
- Making clear rules with the full community in agreement (legitimacy)
- The whole community taking responsibility for enforcement (accountability)
- Providing incentives for enforcement (eg fines go toward conservation and church activities)

... but difficulties persist.

- Enforcement difficult within the community - more likely to enforce rules for outsiders than with people they know (infringement).
- Inequitable distribution of benefits or involvement in decision making: clans are generally hierarchical

Abernethy, K. E., Bodin, Ö., Olsson, P., Hilly, Z., & Schwarz, A. (2014). Two steps forward, two steps back: The role of innovation in transforming towards community-based marine resource management in Solomon Islands. *Global Environmental Change*, 28, 309-321.

TUNA fishing in Pacific Islands: Parties to the Nauru Agreement



- › Federated States of Micronesia
- › Kiribati
- › Marshall Islands
- › Nauru
- › Palau
- › Papua New Guinea
- › Solomon Islands
- › Tokelau
- › Tuvalu



<https://www.pnatuna.com/our-members>

Lauren D. Bernadett, 2014. The Parties to the Nauru Agreement's Vessel Day Scheme: Accounting for the Rare Success of an International Agreement, Chi.-Kent J. Int'l & Comp. Law 103. <https://scholarship.kentlaw.iit.edu/ckjicl/vol14/iss2/4>

TUNA fishing in Pacific Islands: Parties to the Narau Agreement



<https://www.iss-foundation.org>

Governance is

“the whole of
public as well as
private
interaction taken
to solve societal
problems and
create societal
opportunities.”

“...allt samspil
almennings og
einkaaðila sem á sér
stað til að leysa
samfélagsleg
vandamál og skapa
tækifæri fyrir
samfélagið”

Kooiman, J., Jentoft, S., Bavinck,
M., & Pullin, R. (2005). *Fish for
life: interactive governance for
fisheries* (p. 432). Amsterdam
university press. (p. 17)



Sustainability via governance, supported by management

- Aligning common values (Samræma gildi)
- Creating a common future (skapa sameiginlega framtíð)
- Strong leadership (sterk forysta)
- Cooperation (samvinna)
- Analyzing economic incentives (efnahagslegar hvatir)
- Linking other sustainability initiatives (tengja sjálfbærniáttak)
- Generational justice (kynslóðar réttlæti)



Thank you for your attention.

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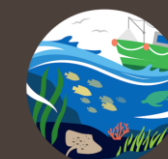
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