

FPIs and fishery comanagement: Drilling down on collective fishery management

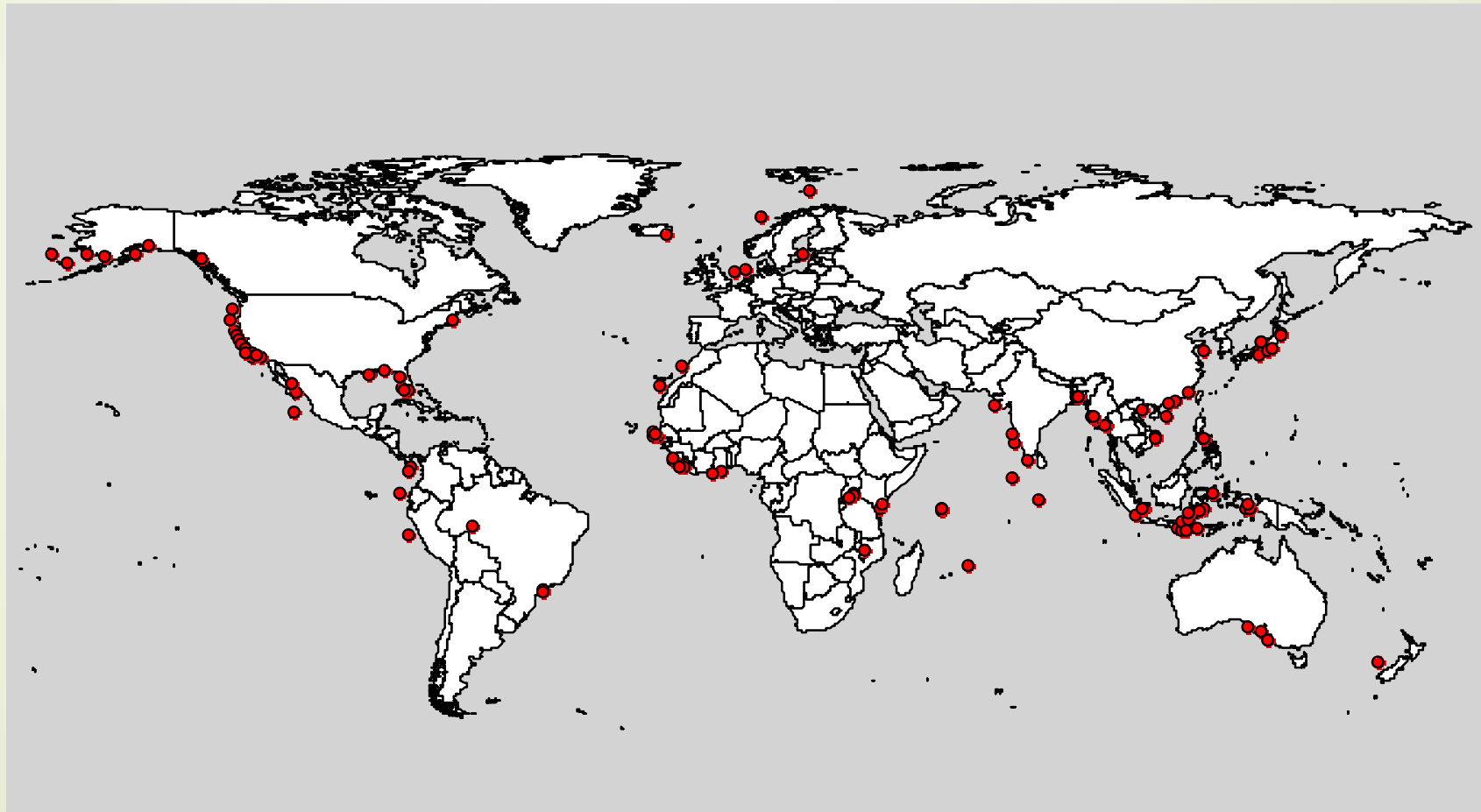
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Motivation:

- ▶ With N=121, fishery co-management in these case studies are exhibiting various colors and shades...



Co-management and current FPI

- Covers wide range of aspects:
 - Access/property rights (e.g., TURF)
 - Stakeholders participation
 - Collective action items that benefits co-management
 - Etc.
- When applied to specific cases, we noticed something.
 - Japan
 - New Zealand
 - Etc.

Component	Dimension	Measure
Macro Factors	General Environmental Performance	Environmental Performance Index (EPI)
	Exogenous Environmental Factors	Disease and Pathogens
		Natural Disasters and Catastrophes
		Pollution Shocks and Accidents
Governance	Level of Chronic Pollution (Stock effects)	
	Level of Chronic Pollution (Consumption effects)	
Economic Conditions	Governance Quality	
	Governance Responsiveness	
	Index of Economic Freedom	
Property Rights & Responsibility	Fishing Access Rights	Gross Domestic Product (GDP) Per Capita
		Proportion of Harvest Managed Under Limited Access
		Transferability
		Security
		Durability
	Harvest Rights	Flexibility
		Exclusivity
		Proportion of Harvest Managed with Rights-based Management
		Transferability
		Security
Co-Management	Collective Action	Durability
		Flexibility
	Participation	Exclusivity
		Proportion of Harvesters in Industry Organizations
	Community	Harvester Organization Influence on Fishery Management & Access
		Harvester Organization Influence on Business & Marketing
		Days in Stakeholder Meetings
Gender	Industry Financial Support for Management	
	Leadership	
	Social Cohesion	
	Business Management Influence	
Management	Management Inputs	Resource Management Influence
		Labor Participation in Harvest Sector
		Labor Participation in Post-Harvest Sector
	Data	Management Expenditure to Value of Harvest
		Enforcement Capability
	Management Methods	Management Jurisdiction
Level of Subsidies		
Data Availability		
Post-Harvest	Markets & Market Institutions	Data Analysis
		MPAs and Sanctuaries
		Spatial Management
		Fishing Mortality Limits
		Landings Pricing System
	Infrastructure	Availability of Ex-vessel Price & Quantity Information
		Number of Buyers
		Degree of Vertical Integration
		Level of Tariffs
		Level of Non-tariff Barriers
Infrastructure	International Shipping Service	
	Road Quality	
	Technology Adoption	
	Extension Service	
	Reliability of Utilities/Electricity	
	Access to Ice & Refrigeration	

Anderson et al. (2015)

Co-management scores/indices

Fishery			Triple Bottom Line Indicators			Sector Performance Indicators		Co-Management
			Ecology	Economics	Community	Harvest Sector Performance	Post-Harvest Sector Performance	
Naya-ura set net	Japan	2016	4.38	3.46	4.64	3.98	4.15	3.29
Toshi small boat	Japan	2016	4.13	3.43	4.62	3.85	4.18	3.42
Toyama Bay set-net	Japan	2016	4.50	3.47	4.60	3.93	4.18	3.19
Wagu lobster	Japan	2016	4.50	3.61	4.60	4.07	4.18	3.50
Nanao Bay sea cucumber	Japan	2016	4.13	3.58	4.50	3.80	4.24	3.31
Ofunato set net salmon	Japan	2016	4.38	3.82	4.48	3.95	4.32	3.29
Ofunato Saury	Japan	2016	4.13	3.74	4.43	3.82	4.35	3.21

- ▶ Seven JPN cases currently in FPI database.
- ▶ Co-management sub-component scores are strikingly similar, despite sufficiently nuanced differences exist.
 - ▶ Latter is based on anecdotes by authors.
- ▶ How to improve or introduce a module that captures such nuances?



What 'nuances' are we talking about?

- ▶ Two known FCAs in Toyama, Japan, with similar co-mgt scores, but:
 - ▶ One (set net) is vibrant with younger generation entering, business going well;
 - ▶ Another one (bottom trawler) the fishers are aging, no new blood, non-compliance
- ▶ Identifying and separating different levels of fishing effort coordination
 - ▶ E.g., NZ: similar rights-based management implemented across the board, yet outcomes differ significantly.
 - ▶ E.g., JP: marketing, especially direct-marketing is popular action item among FCAs, but not all are successful.
- ▶ Coordination may overcome other shortfalls.
 - ▶ Wagu lobster fishery: no biologically-based TAC or similar being set.
 - ▶ But coordination among fishers are at very high level – if overfishing is detected, it is very likely that the group will respond accordingly and appropriately.



Next directions

- ▶ Revisit the tools of assessing co-management based on relevant theories.
 - ▶ Logic of Collective Action (e.g., Olson 1965, Ostrom 1990, 2002)
 - ▶ Theory of firms (e.g., Deacon 2012)
 - ▶ Theory of clubs (Buchanan 1965, Uchida 2017)
 - ▶ Etc.
- ▶ Focus on coordination and its effectiveness in:
 - ▶ Achieving management goals
 - ▶ Endurance / participants' buy-ins