

policy brief

Promoting collaborative management

of small-scale fisheries in the tropics



Policy messages

- Collaborative (co-) management provides resource users with a greater say in making and enforcing rules for small-scale fisheries.
- When properly implemented, co-management can help to sustain fisheries and the livelihoods of people that depend on the ocean.
- Co-management is most successful when key socioeconomic, contextual, and institutional conditions are in place. These conditions are highlighted in this policy brief.

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Cover photo: Fisher in Papua New Guinea. Credit Joshua Cinner

People depend on the ocean

Some 200 million people depend on fisheries for some part of their livelihoods. An overwhelmingly proportion of these are in developing countries, where the capacity of national governments to effectively manage fisheries is challenged by insufficient human and financial capital. This frequently leads to weak governance. These governance constraints can often lead to overfishing, and this has been shown to profoundly alter marine ecosystems and threatens the wellbeing of people reliant on them.

What is collaborative management?

Many governments, conservation organizations, and civil society groups are engaging resource users in collaborative arrangements in an effort to deliver better fishery outcomes for both people and the ecosystems they depend on. This is frequently called “co-management” and is a process that provides people dependent on local resources with greater participation in the decisions influencing the management of these natural resources. An example is the Beach Management Units introduced in East Africa during the past decade, which have allowed stakeholders to develop and enforce locally-appropriate rules. These rules are expected to improve the management of a fishery that has historically suffered from weak management and enforcement. Such arrangements aim to make management more reflective of local conditions and more legitimate in the eyes of stakeholders, thereby increasing the incentives for people to comply with the rules of their own accord.



Kenyan fishers using a gill net on the reef flat. *Credit Joshua Cinner*

When does co-management work? Setting the stage for success

Evidence that co-management arrangements can help to sustain marine resources and improve fishers' livelihoods is accumulating. Nevertheless, there are also cases when co-management has facilitated overexploitation, exacerbated existing social inequalities, resulted in poor compliance, and led to undesirable social and ecological outcomes. Successful co-management has institutional, socioeconomic, and contextual attributes that need to be considered by managers and policy-makers.

Getting the institutions 'right'

Local institutions that are well-organized and functioning are a critical ingredient of making co-management work. Specific institutional characteristics, known as design principles, help to promote cooperation among people. These design principles include:

- **Graduated sanctions**, which are punishments that increase with the frequency and severity of infringements. For example, the first time a rule is broken the person gets a warning, a fine is given the second time, and lastly the person is jailed. These help to create a sense of learning and fairness about the rules. The government plays a key role in the strictest forms of sanctions by establishing the legality of enforcement and must work closely with communities to ensure due process.
- **Clearly defined boundaries and membership**, which helps people understand where and to whom the rules apply and who gets to make them.
- **Active participation**, which can be facilitated through forums that encourage users to actively participate in management, particularly in decision-making processes.
- **Conflict resolution mechanisms** are a critical part of managing natural resources. Having procedures in place before conflicts erupt increases the chance that they will be dealt with quickly, fairly, and effectively.
- **Transparent monitoring and leadership** provide the reassurances necessary for people to invest in co-management.



Fisherman on Zanzibar amidst a sea of small boats. Credit Joshua Cinner



Socioeconomic characteristics of resource users

People may avoid being involved in management if they do not have the time and resources (often associated with poverty) and do not understand that human activities can impact the condition of marine ecosystems. Nevertheless, these constraints can act to focus the policy actions of managers. The main constraints include:

- **Poverty** - People may have difficulty making the short-term sacrifices that are required to engage in co-management if they are struggling to meet their basic requirements.
- **Knowledge about how humans impact marine ecosystems** - People may be unwilling to restrain their use of resources because they do not see a connection between human activities (such as fishing) and the condition of the resource or ecosystem.
- **Dependence on resources** - People heavily dependent on fishing often find it difficult to find time to engage in other livelihood activities. On the other hand, when people are heavily dependent on fishing they are more likely to have an incentive to cooperate and solve problems.
- **Social capital and trust** - People need to trust each other and their leaders if they are going to work cooperatively towards solving fisheries problems.

Fishermen and buyers in Kenya dividing up the catch. Credit Joshua Cinner

The local context

Conditions that can either encourage or discourage people from participating in co-management include:

- **Population** - Small groups of people are more likely to coordinate and build the trust necessary to work together to solve problems.
- **Markets** - Temptations for people to break co-management rules are created by easy access to markets for their marine products. Co-management organizations can, however, harness markets and add value to products. This can create powerful incentives for people to participate in and comply with co-management, when done effectively.



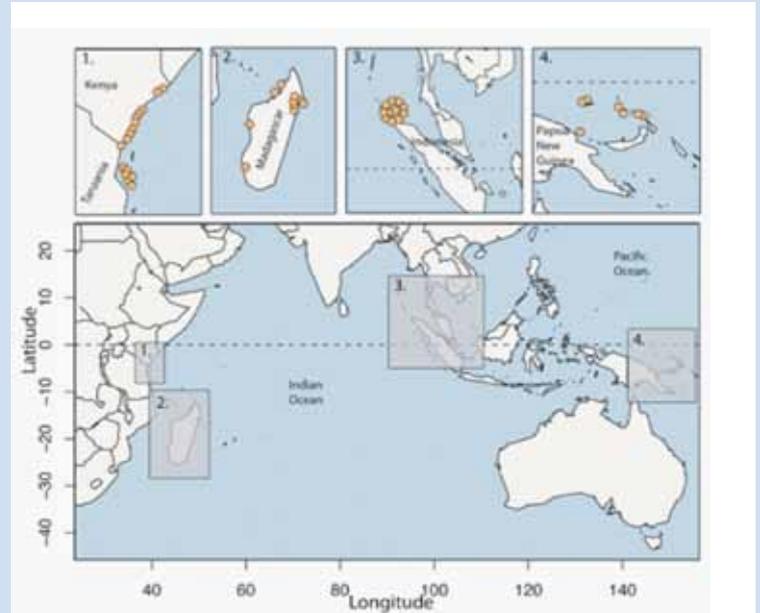
Fish market in Maronsetra, Madagascar. Credit Joshua Cinner



Critical questions remain about what policy-makers can do to promote desirable co-management outcomes. Results from a comprehensive empirical study on fisheries co-management from Africa, Asia, and the Pacific (Box), informs important policy directions on:

- 1) Making co-management work for people's livelihoods
- 2) Fostering the conditions for high compliance, and
- 3) Sustaining fisheries

An examination of the social and institutional conditions that can lead to better livelihood outcomes, higher compliance, and healthier fisheries was conducted across 42 co-management arrangements in Kenya, Tanzania, Madagascar, Indonesia, and Papua New Guinea.



Map of study sites from Cinner, J., TR. McClanahan MA MacNeil, NAJ. Graham, TM. Daw, A Mukminin, DA Feary, AL Rabearisoa, A. Wamukota, N Jiddawi, SJ Campbell, AH Baird, FA Januchowski-Hartley, S Hamed, R Lahari, T Morove, J Kuange (2012). Co-management of coral reef social-ecological systems. Proceedings of the National Academy of Sciences (PNAS). doi/10.1073/pnas.1121215109

Mama Karanga (fish lady) waiting for more fish to be landed, Kenya. Credit Joshua Cinner

Making co-management work for people's livelihoods

The study found that resource users had very positive perceptions about co-management, with 54% of 960 resource users reporting that co-management had benefited their livelihoods, only 9% reporting detriments to their livelihoods, and the rest were neutral. The most successful co-management arrangements occurred when:

- key institutional designs were in place (graduated sanctions, clearly defined boundaries, and high-levels of participation in decision-making);
- people understood how humans impact their ecosystems;
- people were involved in co-management for a long time;
- and people were wealthier.

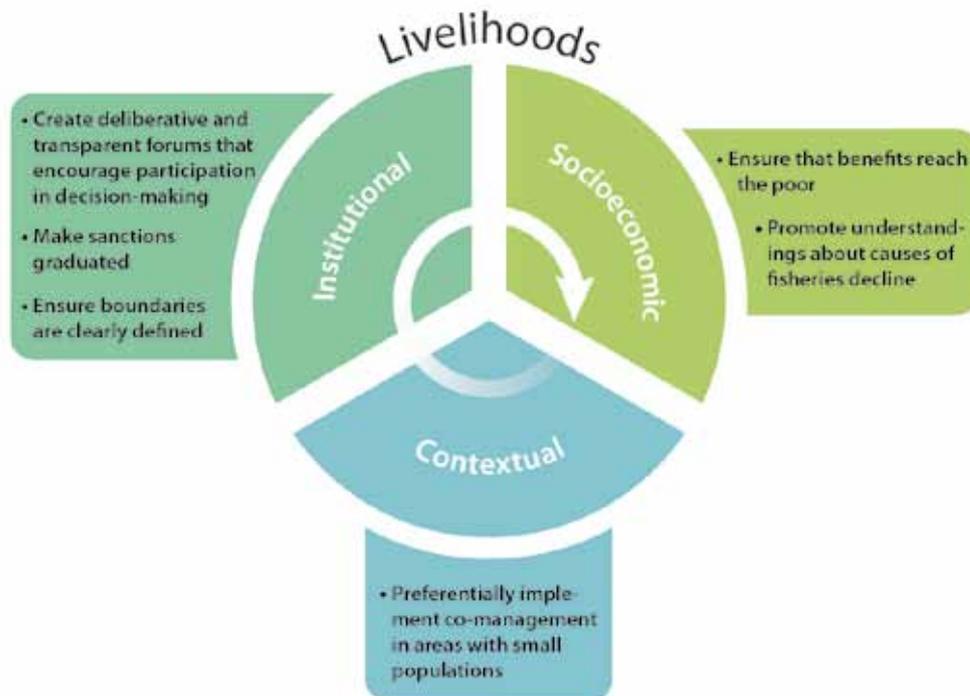


Figure 1. Key policies that managers can enact to facilitate successful livelihood outcomes in fisheries co-management.

The last finding, about co-management benefiting the wealthiest, suggests that co-management has the potential to decrease social equity by creating opportunities for local 'elites' who control resources. By providing users with a greater say in the ways that resources are used and allocated, co-management is likely to redistribute access to the fishery and the wealthy may be better poised to take advantage of these changes. There is no evidence, however, that co-management is detrimental to the livelihoods of the poor. Consequently, managers should seek ways to deliver benefits to the poor by ensuring that co-management arrangements are equitable. This will require ensuring an equitable distribution of power and in some cases may involve poverty reduction strategies, such as the provision of micro-credit loans. Including these provisions will increase the chances for the long-term success of co-management.

The policy actions necessary to make co-management improve people's livelihoods are a substantial departure from the familiar activities of many fisheries managers. Effective implementation may require forging partnerships with social scientists, donors, financial institutions, and civil society.



Figure 2. Key policies that managers can promote to facilitate compliance with fisheries co-management.

Fostering the conditions for high compliance

Getting people to comply with restrictions on resource use is a continual challenge for many fisheries management and marine conservation initiatives. Where resources and capacity is limited, some rules may be particularly difficult to enforce. For example, reported compliance is lowest under territorial use rights that provide local resource users with exclusive rights to their fishing grounds. Where access to motorized boats for patrols is lacking, effectively implementing ownership of specific fishing grounds is likely to require strengthening of monitoring and enforcement mechanisms.

Co-management compliance is also about creating conditions that are conducive to people cooperating, which reduces the need for enforcement. By making targeted investments that lead to transparent and deliberative co-management systems, managers and donors can build the legitimacy, social capital, and trust that foster cooperation.



Many co-management arrangements operate where formal enforcement capacity is limited, like this broken down patrol boat in Papua New Guinea. *Credit Joshua Cinner*

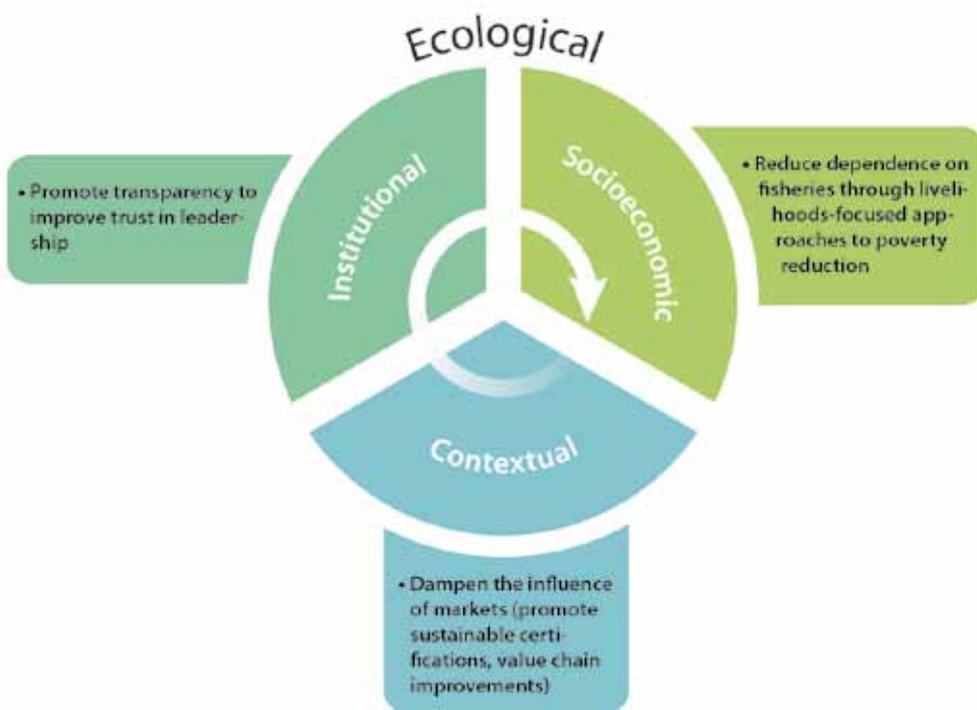


Figure 3. Key policies that managers can promote to facilitate more sustainable fisheries.

Sustaining fisheries

A key finding from the five-nation co-management study was that the exploitation status of co-managed fisheries is most strongly affected by access to markets and levels of dependence on marine resources, providing potential for control by policy actions. Addressing the linkages between ecosystems, local livelihoods, and market access will be critical for promoting sustainable fisheries co-management. These may include, for example, poverty reduction through promoting additional, alternative or more profitable livelihoods and by improving market governance through activities such as sustainable harvesting certifications (see figure 2).

Conclusions

There is no single management panacea for the problems facing the world's fisheries, but co-management arrangements that reflect local conditions can help to sustain fisheries and the people that depend on them, even where poverty is pervasive and national governance weak. The likelihood of co-management becoming successful is, however, higher when specific institutional, socioeconomic, and contextual conditions are in place. Communities, donors, and managers can facilitate desirable co-management outcomes by implementing locally-appropriate strategies to address these critical conditions (Figures 1, 2, and 3).



Canoe full of fish, Indonesia.
Credit Joshua Cinner

Acknowledgments:

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