

Co-Management for Small-Scale Fisheries: Principles, Practices and Challenges



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Foreword

Defined as “as a partnership arrangement between government and the local community of resource users, sometimes also connected with agents such as NGOs and research institutions, and other resource stakeholders, to share the responsibility and authority for management of a resource or an area”, Co-management provides a central plank underpinning LIFE’s Mission to restore the health of European seas through improved governance that brings fishers from the periphery to the centre of decision taking, which takes into account different local and regional realities and which builds on the experience and skills of people who directly depend on the fishery.

Co-management is particularly useful for small scale fisheries as it provides the basis for more localized management, and strengthens the 3 pillars of fisheries sustainability. Co-management should be an ongoing collaborative process in a local community that evolves over time.

Several Member Organisations of LIFE are calling for or are engaged in co-management initiatives. They have developed good practices and learned useful lessons that could be shared with others. In its role of providing support and capacity-building for fishers in local communities, LIFE encourages a process of inclusive community-based management, applying a bottom-up approach to understand fishers' challenges and provide guidance on ways forward. LIFE is documenting fishers' traditional knowledge, including that of an ecological nature, and discusses with them effective management measures that could be implemented through a co-management approach.

In addition to promoting exchange of good practices between these and other groups, LIFE aims to bring together key actors from co-management initiatives in a **Co-management Focus Group**.

LIFE has established a discussion group on co-management comprising 10-15 individuals and representatives of organisations with different backgrounds, with direct experience of co-management, including fishers, academics, NGO project managers, administration officials, etc., from a variety of geographical regions across Europe. This "core group" of professionals were tasked to reflect on the necessary conditions for successful co-management, to develop the direction of the work, and

² EC Guidance No 2014/2 – On Integrating the Market Dimension into EMFF Operational Programmes https://ec.europa.eu/fisheries/sites/fisheries/files/docs/body/guidance-on-marketing-measures_en.pdf

to use their expertise to construct proposals with the following aims: 1) Providing a “think tank” to reflect on co-management models and how to make them more effective. 2) Promoting the replication and scaling up of local co-management initiatives that have proved successful to the wider national and regional level in the European context; 3) Making recommendations in line with these aims; 4) Promoting cooperation and developing joint strategies and synergies amongst the key players in co-management across Europe towards better coordination and greater impact for the benefit of resources and fishing communities.

The following paper has been written bringing together literature available on the subject, the lessons learned directly from experience at field level, and through the reflections and discussions of the aforementioned focus group in several meetings held from 2018 to 2020.



Abstract

Co-management has been increasingly discussed among literature, fisheries decision taking forums and it has gained recognition as a fisheries management strategy that shows promise for improving governance towards greater sustainability, efficiency and fairness. This is especially (but not exclusively) true for small-scale fisheries.

Despite a significant body of literature, there is a lack of regular up to date policy briefs in Europe that clearly summarise the key elements of the model to properly inform all the stakeholders (administrations, fishing communities, researchers, NGOs, among others) involved or otherwise interested in the potential of co-management as a way forward in their local realities.

Defining co-management as “a partnership arrangement between government and the local community of resource users, sometimes also connected with agents such as NGOs and research institutions, and other resource stakeholders, to share the responsibility and authority for management of a resource or an area”, the present document outlines the main practical benefits, describes the basic principles that govern it, its requirements and attributes, basic functioning, and provides a critical analysis of its challenges. All of this with the intention of shedding some light on the issue and enabling its successful practical application.

The document argues that the formal establishment and strengthening of a Focus Group on Co-management would have a role to play in the following aspects: 1) develop and hone a common vision, terminology, common language, 2) act as a network to document, share and analyse fisheries co-management experiences, promote cooperation and build synergies between researchers and practitioners; 3) create a toolkit and training materials for stakeholders and 4) develop a shared advocacy strategy to pave the way for the wider implementation of co-management in the European Union.

CHAPTER 01

Fisheries as Common Pool Resources



CO-MANAGEMENT FOR SMALL-SCALE FISHERIES:
PRINCIPLES, PRACTICES AND CHALLENGES

Common pool resources is the term used to describe the natural resources accessible to all members of a society, including natural resources such as, air, water, and a habitable earth, which are held in common, not owned privately.

The term was introduced by William Forster Lloyd in 1833, but popularised by the ecologist Garret Hardin in his influential article "[The Tragedy of the Commons](#)" in 1968, which introduced this tragedy as a social dilemma and aimed at exposing the inevitability of failure that he saw in the commons, which was widely interpreted to mean that private property is the only means of protecting finite resources from ruin or depletion.

The tragedy of common pool resources is that they may suffer from overuse and degradation if unmanaged rivalry is allowed to take place between users, who do not respect each other's rights or follow common rules, effectively making access to the common pool open and unregulated, and, in the case of fisheries, creating a "race to fish".

However, in the case of small-scale fisheries and peasant agriculture, the privatisation argument has been widely criticized, refuted and discredited. In 2009, Elinor Ostrom, a political scientist at Indiana University, received the Nobel Prize for her research proving the importance of the commons around the world. Her work investigating how communities co-operate to share resources drives to the heart of debates today about resource allocation, use and management, the public sphere and the future of the planet. She was able to document many places around the world where communities have devised rules to govern the commons to assure its sustainability for their needs and future generations. Based on these rules, she drew up a list of 8 principles for managing the commons that do not lead to tragedy, and which should be used as the basis for the co-management of common pool resources.

Fishery resources are common pool natural and renewable resources that are vital for the food security and well-being of millions of people worldwide. However, global fish catches have reached maximum levels while human populations and demand for seafood continue to increase. As on land, at sea the term “the tragedy of the commons” has been used widely as a label to describe in a simplified way the degradation of these resources, due to increasing levels of Illegal, Unregulated and Unreported (IUU) fishery activities and wide scale overfishing generally (Bowles, 2004). This rationale has prompted calls to privatise fishery resources (with claims that private ownership encourages responsible use), or what others call “ocean grabbing”.

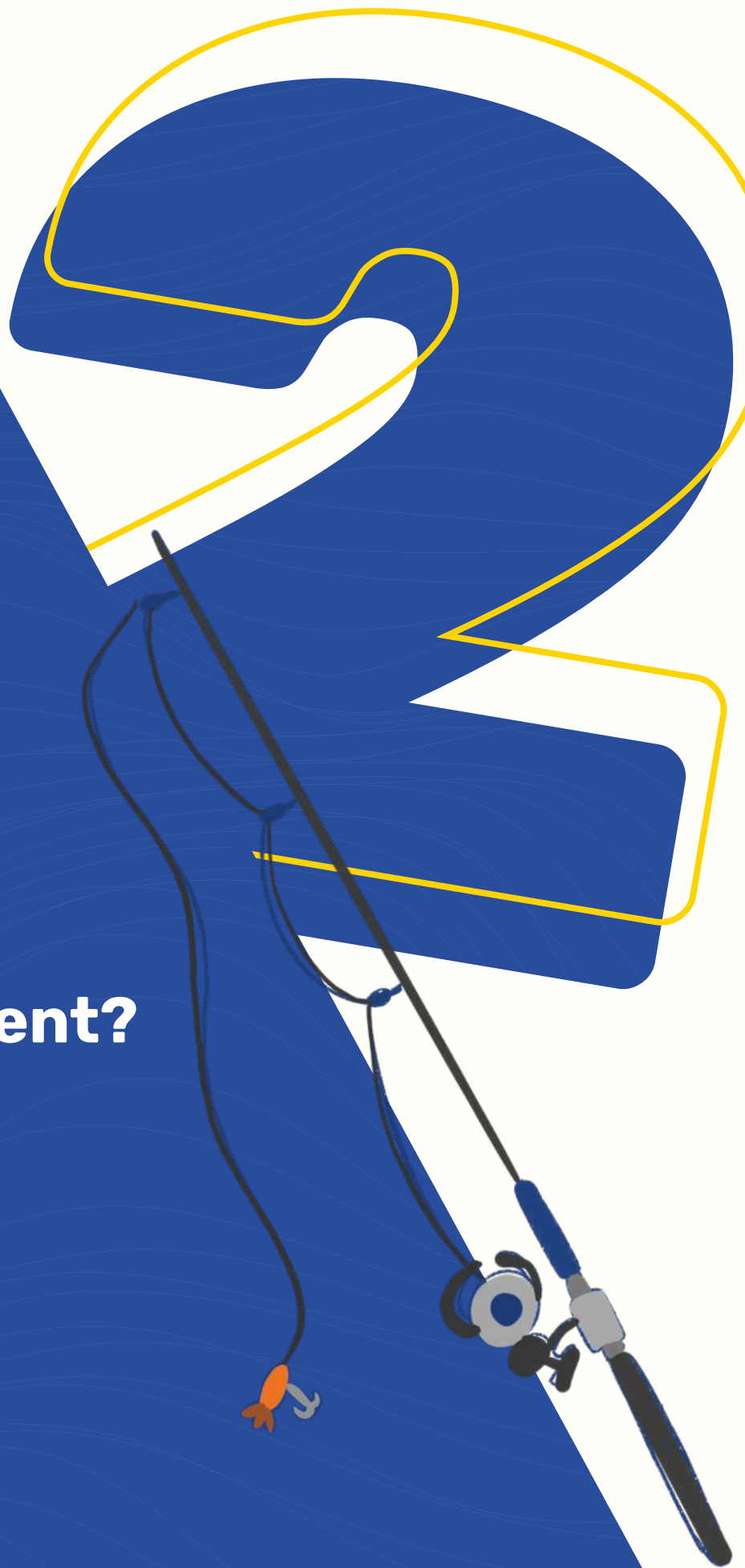
However, the **causes of overfishing are not due to lack of ownership, but rather due to poor or dysfunctional management.** We know that the **government top-down, “command and control” approach to fisheries management, does not work well** (Wilson, D.C. et al, 2003). This system has alienated stakeholders from management decision-taking processes and, combined with a lack of capacity and political will at national level to enforce regulations, lack of attention to local ecological knowledge, has encouraged a vicious circle leading to overfishing, nonviable fisheries and weakening fishing communities. Fishery crises are widespread and the capacity of states to manage fisheries effectively has been brought into question. Fisheries management experts recognise that the underlying causes of fisheries resource over-exploitation and coastal environmental degradation are often of social, economic, institutional and/or political origins and that the main focus of fisheries management should be people, not fish per se (Pomeroy, R.S & Williams, M.J., 1994). After all, humans may be able to manage their own activities (fishing), but they are incapable of managing nature (fishery ecosystems).

In such a context, **new forms of governance are required that build trust and cooperation between national authorities and fishery stakeholders, promote co-responsibility, and which unite them in the common purpose of sustainable fisheries and in the fight against IUU fishing.** This requires a **paradigm shift away from a centralised top-down command and control approach to a new strategy in which fishers and fisheries managers jointly manage the fisheries** (Pomeroy, R.S & Williams, M.J., 1994). In this respect Ostrom's and others work has demonstrated how community-based co-management (hereafter co-management) may be able to achieve sustainability by improving governance of marine resources.

CHAPTER 02

What is Co-management?

CO-MANAGEMENT FOR SMALL-SCALE FISHERIES:
PRINCIPLES, PRACTICES AND CHALLENGES



A plethora of definitions on co-management exist, but there is no single globally accepted definition of co-management (Armitage et al., 2007). However, it is generally accepted that co-management is a **suite of arrangements with different degrees of power sharing allowing joint decision-making by the state and user groups over access to and use of a defined set of resources or area**. Co-management shares many features with other kinds of partnerships and cooperative environmental governance arrangements involving multiple actors (Plummer and FitzGibbon, 2004). However, a critical characteristic of co-management is the presence of at least one strong vertical link between the resource dependent community or user group and the government, **including formal arrangements for sharing responsibilities and authority** based on collaboration between themselves and with other stakeholders (Berkes, 2002; Borrini-Feyerabend et al., 2009). Genuine co-management **should include a devolution of both power and responsibility from the authorities to the stakeholders**. Thus, fishery dependent stakeholders should be part of the decision-making process and vested with the necessary powers to implement those decisions.

In addition, **ad hoc public participation in management decisions or mere consultation should not be regarded as co-management**. Literature has described a gradation of participative arrangements, going from those where fishers are “informed” from by the government before regulations are introduced to those in which fishers design, implement and enforce laws with advice from the government and could be described almost as “self-management”. **Co-management sits somewhere between these two extremes, ideally with Government and stakeholders as equal cooperating partners in fisheries management**.

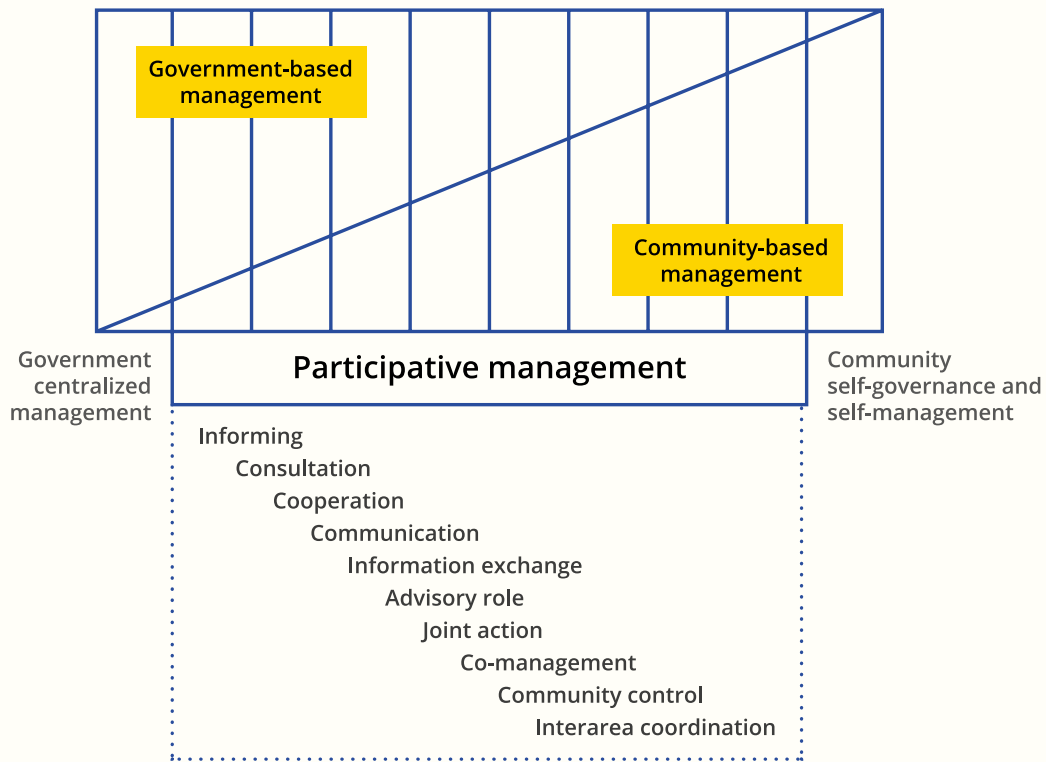


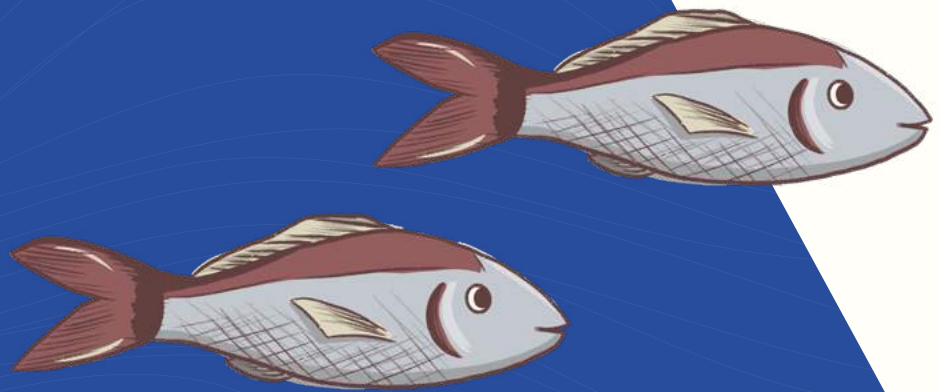
Figure 01. Gradation of participative arrangements (Based on Pomeroy's hierarchy (1994) with our own contributions).

The premise of co-management is that **people who rely on a natural resource should be central to decisions about how that resource is used and managed.** This principle is at the core of community-based resource management (CBRM), and provides an important baseline to inform the implementation of co-managed small-scale fisheries (Raicevich, Alegret, Frangoudes, Giovanardi, & Fortibuoni, 2017).

Taking into account all of this, LIFE finds the FAO and Pomeroy's definition of co-management a useful working definition: ***"a partnership arrangement between government and the local community of resource users, sometimes also connected with agents such as NGOs and research institutions, and other resource stakeholders, to share the responsibility and authority for management of a resource"***.

CHAPTER 03

Why co-management is especially important for small-scale fisheries



CO-MANAGEMENT FOR SMALL-SCALE FISHERIES:
PRINCIPLES, PRACTICES AND CHALLENGES

Co-management is not only suitable for small-scale fisheries, it is actually **pointed as the only realistic solution for the majority of the world's fisheries** (Gutierrez, N. et al, 2011). However, it is here argued that **co-management has an especially relevant role to play in to address today's small-scale fisheries challenges and that there is an urgent need for progressive implantation of co-management arrangements to enable small-scale fisheries to survive and thrive.**

Small-scale fisheries **require specific management strategies** as they are heterogeneous, seasonally diverse, polyvalent, operating in different socio-political structures, and targeting a variety of demersal and pelagic fisheries, while exhibiting multi-tasking roles as they engage in pre-harvest, harvest and post-harvest activities (Chuenpagdee et al., 2017). They also play a key role in providing food security and livelihoods to coastal communities, contributing to the socio-economic fabric both through the local economy and cultural heritage (van de Walle, Gomes da Silva, O'Hara, & Soto, 2015). They also engage in low-impact fishing activities, compared to industrial forms of fisheries, and thus have the potential to be stewards of the environment (Nayak & Berkes, 2011).

Nonetheless, despite their fundamental roles in our societies, small-scale fisheries have been facing major challenges which are impacting their resilience, including declining fisheries resources, competition with-large scale commercial and recreational fisheries in open-access regimes (Damalas, 2017), limited access to fishing rights (quotas etc.), as well as competition from corporate transnational markets which affect the prices of fishers' local catches (Chuenpagdee 2011). In recent years, the development of the Blue Economy has prioritized the development of relatively few economic sectors such as offshore energy generation, aquaculture, and seabed mining, all of which compete with fisheries for maritime space.

Addressing the complexity of these challenges requires (i) greater emphasis on adopting **bottom-up processes through co-management to understand where the problems of small-scale fisheries lie**, and (ii) contextualising co-management approaches **within the local realities**, such that **any measures implemented are fit for purpose**. For example, measures for the reduction of fishing effort would require a socio-economic analysis of the impact that this will create, and alternative solutions may lie in the quest of new markets, or added-value (price) of existing products, that could be developed to improve fishers' resilience. In other words, the existing needs and way forward in shaping the future of small-scale fisheries requires in-depth knowledge which ought to be gained from bottom-up fact-finding processes and a bespoke fit for purpose decision-making procedure for the sector.

In Europe, the coastal zone within the territorial waters provides the mainstay of Europe's majority fleet (80% by vessel numbers) comprising small-scale coastal fishing (SSCF) vessels under 12 metres in length using non-towed gears (STECF, 2020). The management of these zones falls under national jurisdiction, within the overarching framework of the Common Fisheries Policy (especially Article 5 EC Regulation 1380/2013), whilst the Marine Strategy Framework Directive (MSFD Directive 2008/56/EC) aims to conserve species and ecosystems (Crise et al., 2015). Both legislative frameworks provide the basis for small-scale fisheries management, however, co-management has not yet received the wider policy recognition required for it to be applied widely by national authorities in the management of coastal fishing activities. **With the focus of the Common Fisheries Policy being mostly on larger scale fleet management, relatively scant attention has been given to what the management needs are for small-scale fisheries within the coastal zone** (Said, Mac-Millan, & Tzanopoulos, 2018). Given its relatively minor economic importance compared to other sectors (e.g., tourism), fisheries are not afforded a high priority, and relatively few resources are allocated to fisheries management. The EU's MedFish4Ever initiative is geared towards addressing this problem, and to garner greater political will.

It is therefore necessary to move away from one-size-fits-all policies to ensure that policies match the needs of all fishing sectors through appropriate governance systems. Although often considered as a (fish)ery dependent problem, fisheries sustainability is much more than that, as it is impacted and influenced by various factors including wider environmental changes, culture, community, the markets, the political economy, power relations and so on. For this reason, a **bottom up, nuanced co-management approach**– in contrast to the one-size-fits-all technical fix top-down approach conventionally used in fisheries management – **is necessary to attain not only sustainability of fisheries but also the socio-economic viability of fishing communities** (Said & Chuenpagdee, 2019).

Such an approach is **in line with the Sustainable Development Goals, especially with SDG 14**, as well as other SDGs on food security (SDG2), on gender equality (SDG 5), decent economic growth (SDG8), reduced inequalities (SDG10), community sustainability (SDG11), strong institutions (SDG16) and partnerships (SDG17), amongst others. Also, co-management is an **important and explicit element of the FAO SSF Voluntary Guidelines, and of the human rights-based approach to fisheries** more generally (Charles, 2011). For the Mediterranean region, co-management is also an integral component of the **Regional Plan of Action for Small-scale Fisheries (RPOA SSF) in the Mediterranean, being implemented by the GFCM**.

CHAPTER 04

Benefits identified when applying co-management



CO-MANAGEMENT FOR SMALL-SCALE FISHERIES:
PRINCIPLES, PRACTICES AND CHALLENGES

Testimonies and case studies provided by the “Co-management Focus Group” and examples from across the literature (Pomeroy, RS & Williams, MJ., 1994; Berkes, 2007; Pittman et al., 2019; Oliveira, 2013; Stöhr, 2014; Bergmann et al., 2004) allow us to highlight several **key benefits of co-management in the short, medium and long-term as follows:**

- Improved fisheries governance to benefit current and future generations of fishers, by improving relationships, common understanding, trust and better communication among different stakeholders;
- Strengthened the capacity of fishers to claim their rights to access and properly manage fishery resources and to have a say in the decision-making processes that affect them.
- Enhanced sense of co-responsibility encouraging responsible fishing;
- More effective implementation of fisheries management (context-specific, fit-for-purpose and with more appropriate management tools designed and implemented)
- Collective ownership by users of decisions taken, greater sensitivity to local socioeconomic and ecological restraints;
- Valorized the traditional and experiential knowledge (TEK) of the fishers, combined with interdisciplinary scientific knowledge to better inform fisheries management decisions
- Increased compliance with regulations (including through peer pressure), reduction of IUU;
- Reduced conflicts between competing user groups (especially different scales and fishing gears)
- Better quality data for management decision taking;
- Enabled real-time and adaptive management, while enabling long-term commitments;
- Advanced in gender equity, human rights and subjective well-being within the fishery, among others.

In short, **co-management can incorporate a wider appreciation view of what are complex and context-specific needs**, and it is becoming widely accepted that **co-management has the potential to represent an excellent delivery mechanism for sustainable fisheries worldwide** (Gutierrez, N. et al, 2011)



CHAPTER 05

Co-Management is widespread

CO-MANAGEMENT FOR SMALL-SCALE FISHERIES:
PRINCIPLES, PRACTICES AND CHALLENGES

Many co-management initiatives have been implemented around the world, illustrating various ways of conducting this process based on devolution of responsibility and power, cooperation, and the engagement of stakeholders (Finkbeiner & Basurto, 2015).

A world review of cases from the peer-reviewed literature, governmental and non-governmental organisation (NGO) reports and from interviews of experts on co-managed fisheries conducted from Gutierrez et al in 2011, identified 130 examples of co-managed fisheries in 44 countries covering artisanal and industrial sectors and a variety of ecosystem types, degrees of human development and social, economic and political settings. This study used eight indicators to measure success, grouped into ecological (e.g. stock abundance), social (e.g. social welfare) and economic (e.g. increase in unit price), which were aggregated to obtain a single holistic success score that captures natural and human dimensions of fisheries.

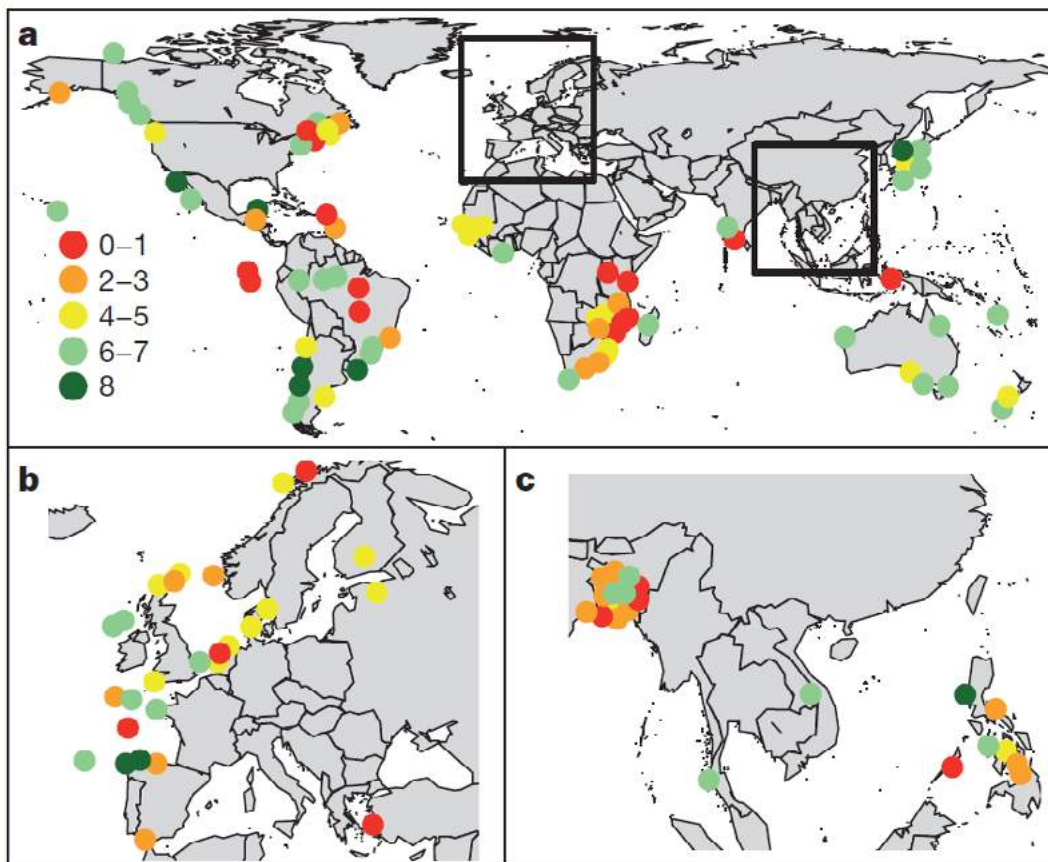
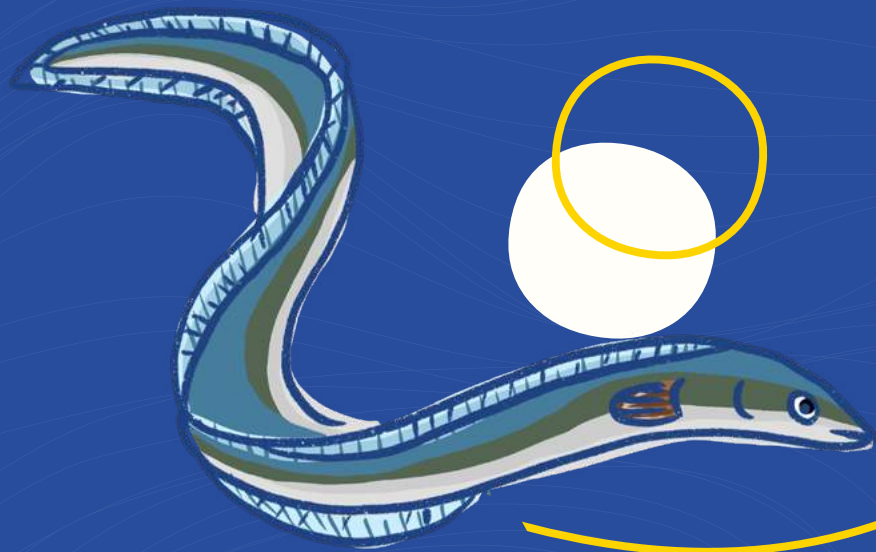


Figure 02. Location and success score for all study cases of fisheries co-management. a-c success was grouped in five categories according to a number of social, ecological and economic outcomes achieved. A. global map. Insets are Europe (b) and southeast asia (c). n=130. (Source: Gutierrez et al. 2011)

Around **Europe** there are examples where relatively small, localised, and often informal co-management projects have successfully brought state and non-state actors together and facilitated a dialogue and collaboration between them, establishing a basis for co-responsibility and improved acceptance of legally binding regulations, which in turn is contributing to addressing IUU practices and social conflict. In recent years co-management has been receiving increasing attention from national and regional authorities, and has been formalised as an integral part of fisheries management in a few locations (e.g. Catalonia and Portugal). In the case of the Mediterranean, co-management has been included as an integral part of the Regional Plan of Action on Small Scale Fisheries adopted by the General Fisheries Commission in 2018 for the Mediterranean and Black Sea (GFCM) members. The Co-management Focus Group proposes to provide a list with a brief description and analysis of examples of co-management in practice in a number of places across Europe.



CHAPTER 06

Implementing Co-Management: Basic 8 Principles

CO-MANAGEMENT FOR SMALL-SCALE FISHERIES:
PRINCIPLES, PRACTICES AND CHALLENGES

Based on her extensive work Elinor Ostrom devised 8 basic principles that need to be adopted to ensure sustainable and equitable governance of common pool resources. These may provide the basis for participative governance and co-management, as explained below:

Principle 1 - Define clear group boundaries.

Commons need to have clearly defined boundaries and an overarching management framework. In particular one should try to answer the questions: with who? how? for what? and where?

This first step requires a stakeholder-identification analysis to identify those to be included in the stakeholder 'group' ("with who?"), and determining roles of participation (how?). The number of direct participants should not be too large so as to restrict effective communication and decision-making. However, in order for those to become legitimate participants, an open and transparent process of participation, communication and decision making should be designed and ensured (see following section "7. co-management requirements, conditions or attributes for successful co-management" for further details).

It must also be determined exactly what the co-management scheme will be applied to and result in (for what?) and in what particular space (where?). The most usual purpose of the co-management scheme is the development of a management plan, which may include a single specific fishery or the total number of fisheries in one area. At the same time, the physical boundaries of the area to be managed need to be specified, making sure that the fishers group engaged has an accurate knowledge of them (e.g., a bay, internal waters from one cape to another, an existing MPA, etc.). The boundaries should be based on an ecosystem that fishers can easily observe and understand.

Principle 2 - Match rules governing use of common goods to local needs and conditions.

The rules should fit local circumstances. There is no one-size-fits-all approach to common resource management. The rules should reflect the local reality and involve the local stakeholders, those that use and reside near the area to be managed, respecting local ideology, customs and belief systems, and creating a willingness to deal with collective problems.

Small-scale fisheries are heterogeneous and in different fisheries fishers have different needs and aspirations. They employ different gear combinations in different seasons and on different grounds, which sometimes leads to conflicts between them. For example, it is common to find conflicts between trammel net users and long-liners contesting the same fishing grounds in common pool fisheries, and competing for the same markets. Moreover, fishing communities' fishing areas may be diminishing due to increasing allocation of coastal space to competing non-fishery activities that condition access to their fishing grounds. These context-based realities which characterise common pool open-access fisheries need to be well-reflected in the governing rules which are implemented.

Principle 3 - Ensure that those affected by the rules can participate in modifying the rules.

Participatory decision-making is vital. Stakeholder identification needs to identify those who are affected, and that they are involved legitimately in a way that ensures their needs are incorporated. Identify power issues in the group, those with more voice are more likely to extend their voice. Create the platform and interface necessary to promote dialogue, use informal spaces, participatory mapping that puts fishers at ease. Visiting fishing ports rather than implementing formal round-table meetings in official settings may make fishers more comfortable and forthcoming. Understanding pre-existing factions in the group, due to their previous history is necessary to ensure that fishers who feel intimidated by the process have the facility to speak.

Principle 4 - Make sure the rule-making rights of community members are respected by outside authorities.

Passing from an informal agreement among stakeholders or voluntary codes of conduct into a formal management process will allow the “co-management agreement” to be legitimized, to be enforced (with resources made available for this purpose) and to be respected by all stakeholders, including those outside the boundaries established initially. For example, a law or decree that recognizes the rights agreed by community members will provide fishers with the necessary tool to ensure that the conservation efforts they are implementing are not undermined by neighbouring or distant water fleets fishing within these waters.

Involvement in and recognition of administrations for the co-management process (and its subsequent agreement) is obviously a pre-requisite for success. These administrations include those both directly and indirectly responsible for fisheries (transport, tourism, ports, recreation etc). However, as critical to the involvement and recognition of administrations is **an enabling legal framework** to ensure that governments have proper systems in place to enable the co-management process to take place. A critical step in the implementation of co-management is the political will to change policy, to include stakeholders in the development of policy and regulations and to devolve power to them.

Principle 5 - Develop a system, carried out by community members, for monitoring members' behaviour.

Once rules have been set, co-management committees need to establish a way of checking that stakeholders are respecting them. Commons don't run only on good will, but on accountability. Monitoring of fishing activities and social acceptance on the governance framework are necessary to ensure that community members are abiding by the measures they agreed to implement and that the co-management system in general is functioning as it should. The monitoring system should identify also the reasoning behind any contrary

behaviour against the agreed rules and possible causes. With such data, the co-management committee should be able to take action to address any problems arising, discussing or re-discussing issues that arise until systems work properly, and where necessary adjusting the system through “adaptive management”. Needless to say, that trust-building is a necessary exercise for monitoring systems to be effective. It is fundamental not to subvert the monitoring system back into a top-down ‘command-control’ approach as this will increase the mistrust in the system again, and make implementation and enforcement of rules more difficult.

Principle 6 - Use graduated sanctions for rule violators.

Adaptive management suited to the local reality and adopted by stakeholders should lead to higher acceptance and compliance with the rules. This implies that there is less of a need for the control and enforcement of rules, with less of a need for sanctions. Such sanctions for rule violations should be graduated and proportional to the gravity of the violation. Ostrom observed that the commons that worked best didn’t “ban” people who broke the rules as that tended to create resentment. Instead, they had systems of information, warnings and fines agreed at the community level (e.g last to sell in the auction, etc), as well as informal reputational consequences in the community. The use of sanctions should be a last resource, and participants must be fully informed and aware about any measures in place, so that potential violators are well-informed about the consequences should they willingly break the laws. A system of warnings for violators can also be implemented in the initial stages as part of the awareness-raising phase.

Principle 7 - Provide accessible, low-cost means for dispute resolution.

Conflicts are a constant in human life, between both individuals and groups. They are an inevitable part of managing common pool resources. Conflict resolution should de-escalate situations, and offer “win-win” not “winner-loser” scenarios. Mechanisms for conflict resolution need to be built on collective action and consensus that all participants understand and respect.

A centralised legalistic approach to sanctions tends to create victims, a guilty party, with a winner and a loser with the consequences that this entails. The change that co-management and adaptive management offers is that there is no longer a hierarchical relationship between stakeholders, with a judge/ judged relationship, but it is a system that seeks common solutions through consensus and the possibility of reviewing those agreements if they prove not to work. In this system there ceases to exist winners and losers, but a solution is sought that satisfies everyone and the common good (with the understanding that surely all parties will have yielded a little). There are cases of co-management committees that establish voting systems, but it is true that what seems to have worked best is when in which committees are managed by full consensus and time in discussions is placed to reach this consensus, while it is precisely when the vote has taken place that co-management process has been weakened.

Therefore, conflict management (including mediation, facilitation, etc.) is absolutely necessary for the proper functioning of co-management committees, and where participants will need specific training. It will be especially relevant in the early days of any new co-management system when the actors are not familiar with it and given a heritage of mistrust.

Principle 8 - Build responsibility for governing the common resource in nested tiers from the lowest level up to the entire interconnected system.

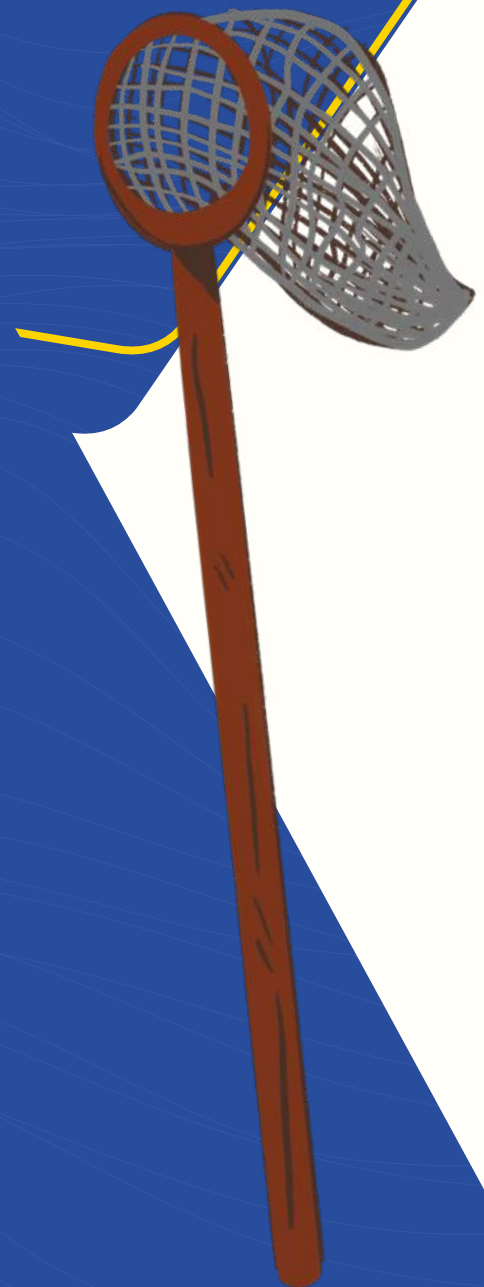
It is important that power is not centralised so that it can be subverted by particular interests. The co-management system needs to include an interconnected array of decision-making bodies which operate collectively, rather than having one overarching co-management committee vested with responsibility for all decision taking.

While consensus is necessary for managing the use of common pool resources, responsibility at the various governance levels is equally important to ensure that decisions are collectively endorsed and owned. A well-connected governance system with clear lines of executive and legislative power for implementing the management measures is thus necessary to provide both the support, as well as the resources to maintain the co-management process on a long-term basis. Without the ownership, responsibility and the necessary support from governments, researchers, and fishers themselves, co-management as a process to realistically co-manage use of fisheries resources will be challenging, and if it is not articulated within existing governing regimes, its success may be jeopardized.

CHAPTER 07

Requirements, conditions or attributes for successful co-management

CO-MANAGEMENT FOR SMALL-SCALE FISHERIES:
PRINCIPLES, PRACTICES AND CHALLENGES



Ostrom's principles for managing common pool resources have been validated thoroughly both in the relevant literature and in case studies on the ground. However, as experience grows, there is a need to incorporate further lessons learned to make co-management systems more successful. There is no simple formula to ensure success in fisheries co-management initiatives. Rather systems need to evolve over time-based experience and lessons learned. Some **further attributes** gathered from these experiences are set out below.

- **Relationships are at the heart of co-management.** Relationships between fishing communities, the government and other stakeholders. Equally important are the relationships within the fishing communities. Social cohesion is a crucial attribute for co-management. It requires motivation, trust, good communication, self-organisation and empathy. It is essential for informed, legitimate decisions and good governance within the co-management committee. However, social cohesion among fishing communities is not a given. Often just the opposite situation exists. Disempowerment and disengagement have usually undermined communities, allowing individualistic behaviour to override any attempts at collective approaches, leading to a vicious negative circle (miscommunication, deslegitimacy, faction fighting etc). Therefore, social cohesion is a prerequisite condition to ensure the success of co-management. In this respect, case studies have highlighted the important roles played by NGOs and social scientists in facilitating and fortifying social cohesion, accompanying processes of social change in the field, supporting leadership development among the fishing sector based on common good, providing skilled mediation to enable deliberative approaches and respectful dialogues to take place, while building capacity for collective action. This process, which requires embedding in good governance principles, can facilitate inclusive community-based management of small-scale fisheries. In essence, it must ensure appropriate identification and resolution of existing ongoing inequities, distributive injustices and marginalization that can make or break the process of co-management.

- Prerequisite for good social cohesion is **strong leadership** in the community. Strong leadership is critical for successful co-management of fisheries. The presence of at least one person with entrepreneurial skills, highly motivated, respected as a local leader and with a personal commitment to the co-management implementation process is essential. Legitimate leaders when guided by collective interest and not self-interest give resilience to changes in governance, influence user's compliance with regulations and enhance conflict resolution (Gutierrez, 2011). This leadership sometimes is not visible and sometimes may not only correspond to legitimate elected leaders of their organisations. There could be others with leadership potential who may be willing to support and positively influence the co-management process.

- **Empowerment** of fishers, their organizations and their communities is both a condition and a goal of fisheries co-management, as it involves bringing previously excluded, disenfranchised and sometimes alienated user groups and stakeholders into the decision-making process, and requires a transfer and redistributing power and responsibility from the centre to the periphery of the fisheries management chain (Jentoft, 2004).

- **Decentralisation and devolution of authority:** The government has or is willing to establish formal policy and/or laws for decentralisation of administrative functions and devolution of management responsibility and/or authority to local government and local stakeholders, e.g., through co-management committees. For that the political will is necessary and developing a legal or policy framework that is supportive of fisheries co-management is key. The approval of specific legal instruments supportive of fisheries co-management in the region of Galicia (2002) and more recently in Catalunya (2018) in Spain or Portugal (2020) are major steps forward for the success of co-management in these areas and beyond.

- Applying the co-management model involves a “**process of change**” and **social transformation** for all stakeholders involved. Building belief, trust and hope is not something that happens overnight. It’s a slow process, which takes time and patience to develop, implement and sustain.

Key enabling factors and lessons learned in this regard from case study experiences are:

- It can be a slow process. Sufficient time is needed for the entire process of planning, identifying and understanding challenges, discussing and agreeing proposals.
- Voting should be the last recourse for approving decisions. Decision making by consensus should be the main way to arrive at agreements. This requires time to discuss and build decisions in which all stakeholders see their ideas reflected.
- Process needs to be flexible enough to adapt to the reality and rhythm of different stakeholders. Do not rush or force if progress is slow.
- Start very small, local level.
- Avoid over building expectations or making promises that cannot be kept, or relationships will suffer as a result.
- Provide information and make sure all stakeholders understand the process they are immersed in, dispel fears and inform appropriately on what they can expect from it.
- Be holistic, inclusive and empathic. Listen, listen and listen.
- The use of intelligent, low profile external communication is crucial. Media can affect significantly the process of building trust.
- It involves people’s time and personal efforts. Participation will be sustained if the expected benefits to be derived from participation and compliance exceed the costs invested (in time and resources) in such activities. What can be considered as benefits for each individual obviously varies from one case to another, but motivation can come from a simple sense of hope for a better future scenario, including the participation and right to determine one’s own future, a feeling of being listened to and achieving

improved social cohesion. Other more tangible benefits may be required to motivate participants, for example securing fair access to fisheries and fishing opportunities, better enforcement of fairer regulations, etc.

- **Management rules need to be simple.** Designing and implementing a monitoring system to determine the progress and appropriateness of the management measures taken is important. In many small-scale fisheries, biological and socioeconomic information is often missing or incomplete, unreliable or inaccurate. In this respect relying on the **Traditional Ecological Knowledge (TEK)** and fishers' historical perspective of the systems under exploitation has become an essential source of information, complementary to scientific information. TEK is the cumulative body of knowledge, practice and belief accumulated over time and passed to subsequent generations. In many fisheries' co-management schemes TEK can act as baseline data to measure changes and from which to partially base some management proposals. Moreover, exploring ways for fishers to produce their own knowledge base is essential to any co-management process, as fishers can become empowered as owners of data, better-oriented to discuss the problems and identify opportunities for the management of their activities (Jentoft & Mikalsen, 2014).

- **Coupling production to market and social benefits.** Management plans need to consider people's basic livelihoods needs and not only consider ecological well-being. Co-management has the potential to empower fishers to devise and adopt specific marketing tactics, e.g. for improving product quality, shorter supply chains, labelling etc. Improving the influence of fishers in local markets may result in multiple benefits to local communities, minimizing the probability of overexploitation and enhancing economic revenues through obtaining a higher income per unit of effort (Defeo & Castilla, 2005). For example, in Catalunya (Spain) this has been formally addressed with the co-design and implementation of "**socioeconomic plans**" of each co-managed fishery.

CHAPTER 08

Basic elements required for the practical functioning of co-management

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Principles such as **democracy, transparency, legitimacy, accountability**, and sustainability are also key defining attributes of co-management. However, the way they are incorporated into co-management systems will vary according to the context, from one country to another and from one fishery to another. However, in many instances these basic principles are incorporated through the constitution and governance rules established for the functioning of a “co-management body” or “**co-management committee**”, which has the mission to co-design, approve, implement and monitor the new rules and regulations.

The **composition of the co-management committee** in the different case studies varies. While early co-management initiatives involved only partnerships between the government and the local primary resource users (fishers), over the years the practice of co-management has evolved to include multiple stakeholder sectors, including academic and research sector, and other stakeholders such as organised groups of civil society or NGOs, recreational fishers, and so on.

As a basic principle it is essential to ensure that at least the administration and fishers’ sectors share decision making power equally, so that the committee can act as a truly joint management body (in some cases researchers and NGOs may also have voting rights). While some argue that if other sectors are included and vested with decision making powers, this may dilute the decision-making powers of the fishing sector; others maintain it’s an enriching and necessary factor that leads to success.

In the following example we describe the co-management bodies that structure the “Co-management committee of the cuttlefish in the Bay of Roses and Pals, Catalunya, Spain”. It is structured in 4 decision-making bodies:

Presidency: The President of the Plenary is representative of the Co-Management Committee and normally is a fisher. In the event of a tie in a Plenary vote, the area to which it belongs has a casting vote. Once a Management Plan is approved, it is transmitted to the director for publication in the official gazette.

Secretary: Responsible for the administrative management of the Committee (both the Plenary and of the Technical Commission), organisation and dynamization of meetings. s/he is a staff member of the General Directorate of Fisheries in Catalunya, with a voice but no vote.

Plenary: It approves the Management Plan and makes general decisions or those that may affect other modalities. Formed by 5 or exceptionally 6 areas, with equal power in decision-making (20%).

Plenary		
Areas	Members	Representatives
Affected fishing sector (fishers targeting cuttlefish, using traps and trammel nets)	Fisherman from Cofradia of Cadaqués	1
	Fisherman from Cofradia of Roses	2
	Fisherman from Cofradia of Escala	2
	Fisherman from Cofradia of Estartit	2
	Fisherman from Cofradia of Palamós	1
Representative body of fishing sector	Federació Territorial de Girona	2 (President + secretària)
Scientific sector (environmental and social)	Institut de Ciències del Mar CSIC + Universitat Autònoma de Barcelona	2 (Director Dept. de Recursos Marins/ Investigador ICM + professora UAB)
Environmental & social NGOs	LIFE + Salvem l'Empordà	2 (LIFE + Salvem l'Empordà)
Administration	Direcció General de Pesca i Marisqueig	2 (Director general + Cap del Servei DGPAM)
Recreational fisheries sector	Associació Catalana per a una pesca responsable	1

Figure 03. Example of composition of a multiple actor scheme (concretely the plenary of the co-management committee of the cuttlefish in the Bay of Roses and Pals, Catalunya, Spain)

The Technical Commission. Technical work body formed by personnel from the “4 basic areas” with equal power in decision-making (25%), who meet periodically every 2 months and decide the basic elements of the plans.

Technical Commission	
Areas	Members
Affected fishing sector (fishers targeting cuttlefish, using traps and trammel nets)	Fishers from Cofradias of Roses i l'Estartit that using traps and trammel nets. They alternate with l'Escala every x months.
Scientific sector (environmental and social)	Institut de Ciències del Mar-CSIC + UAB
Environmental & social NGOs	LIFE + Salvem l'Empordà
Administration	DGPAM

Figure 04. Example of a multiple actor scheme (concretely the technical commission of the co-management committee of the cuttlefish in the Bay of Roses and Pals, Catalunya, Spain).

The **roles of each sector within the management committee** vary and may often not be clearly defined or understood by the players themselves, compromising an efficient and effective co-management of resources (Pomeroy and Berkes, 1997). Therefore, agreeing clear roles among co-management stakeholders is essential to the proper functioning of co-management committees. Here below there are some roles and responsibilities described from stakeholders in some case studies referred to above:

Administrations. Role: provide an enabling policy environment and a legal framework in which co-management can operate effectively. Responsibilities: technical support and human resource development, implementation of legal and administrative processes, and enforcement of new regulations, among others.

Fishers and their organisations. Role: Key stakeholders with user rights, participate in and implement decisions of the

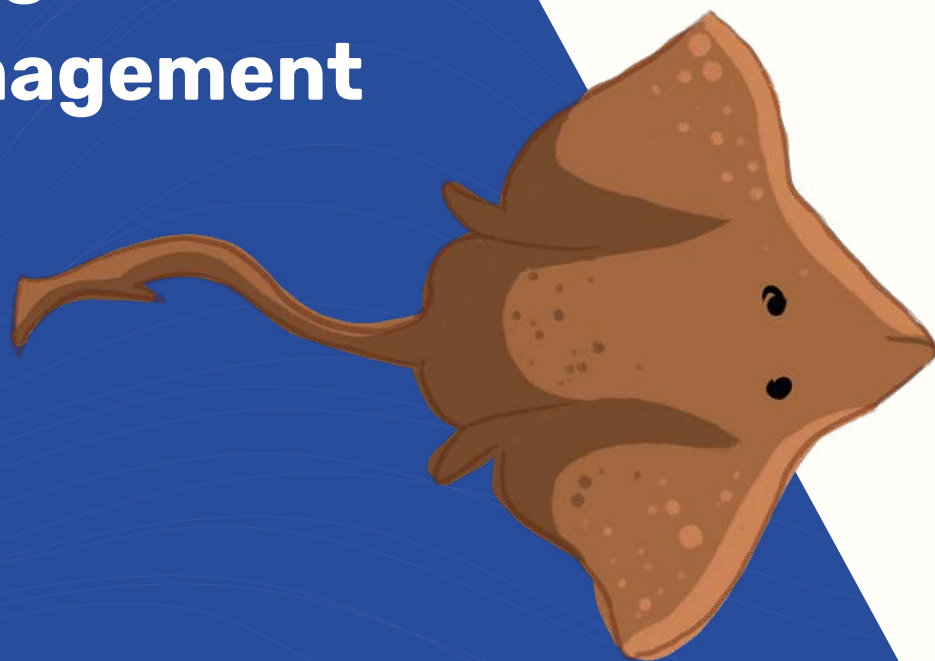
co-management and related committees (sanctions, control and enforcement, scientific advice etc). Responsibilities: co-create and abide by the co-management plan, provide their traditional ecological knowledge in the diagnosis of the fisheries situation and planning, properly communicate to the rest of their sector the issues under discussion and bring consensual proposals to the co-management committee, participate in management, collect and provide catch and effort and other data required for fisheries management, identify and help resolve conflicts, report non-compliance with the co-management rules to the co-management committee and give reasons for this, etc.

Scientific community (multidisciplinary). Role: provide scientific advice (on fisheries management in particular), advise and inform about the relevance or not of the proposals submitted to the co-management committee from a scientific point of view, sharing relevant scientific information and knowledge. Responsibilities: work with the fishers to combine scientific knowledge with the fishers' ETK and experiential knowledge into fishery management advice, monitor the fisheries activities with the fishers, respecting their rights as owners of their own data.

NGOs (social and environmental). Role: civil society stakeholders with economic, social and environmental stakes in the fishery, participate in co-management sub committees to provide advice, information and points of view. Responsibilities: they play a supportive role as critical and constructive observers and advisers, facilitating a participatory approach and linkages, mediation and conflict resolution, facilitating the discussions and ensuring that the whole co-management process is conducted in a fair, democratic, transparent, legitimate, and fully accountable fashion to achieve the management objectives set.

CHAPTER 09

Challenges of co-management



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Co-management is not, however, a panacea for fisheries management. The development of co-management systems is not automatic or simple; it can be costly to establish and require a long-term effort (Pomeroy, 1994).

Co-management can take many forms, and not any type of co-management will be effective for the suite of challenges facing small-scale fisheries today (Finkbeiner and Basurto 2015). It is in fact recommended that co-management should be seen as an incomplete arrangement (Pinkerton, 2019), in which the scope and role of the government is relatively limited, and the arrangement evolves, and strives to reach joint policy-making at the local level over time. It is not possible for co-management to be initiated through a formal contract and achieve the desired impacts in the short-term. Also, any formal long-term decisions – such as management plans – which are agreed in the early stages of a co-management process are likely to be incomplete, and not sufficiently inclusive of the various parts of the sector. When co-management is implanted into existing institutional landscapes, or does not include the marginalized segments, it is likely it will reinforce existing inequalities, rather than resolve them (Linke & Bruckmeier, 2015). In such a scenario, it is likely that not all the fishers in a co-management group would buy into the process, and that they will build rivalries rather than alliances in the co-management process.

Some other challenges identified when co-management is implemented includes:

- Need of an enabling environment where there is political will to devolve power and change status quo.
- Achieving genuine understanding of co-management benefits at government level (across different political parties) and the provision of a supportive legal framework that embrace co-management schemes and protects those informal arrangements.
- Lack of capacity and proper understanding of co-management by stakeholders, limited staff capacity in government offices.

- Sufficient number of Civil society organisations (NGOs) that are available, ready and with the capacity to get involved in what co-management processes need.
- Policy conflicts between ministries or sectorial administrations, that don't interrelate enough.
- Legitimation of the process that determines identification of representative fishers and stakeholders within the Co-management scheme.
- Funding is a challenge. Co-management schemes are not necessarily costly but previous social processes to engage all stakeholders and provide social cohesion need resources.
- Culture and power relations: the culture of meetings and work in government offices is very different to the working culture of fishers. The way language is used by officials/researchers and the vocabulary they employ may be complex, technical and inaccessible to the fishers. Fishers may feel at a disadvantage in formal meetings, become shy and unwilling to participate. This asymmetry of power relations and differences in culture must be addressed in the co-management body, to create a culture of equality and mutual respect for each other's differences.

When these challenges are not identified or considered in the process, there is no guarantee that co-management can work. Co-management will not be able to transform extremely competitive and often antagonistic relationships into cooperative and responsible ones unless the process is sufficiently 'patient' and counts with the necessary support to develop a culture of trust both between fishers, and between fishers and the institutions (Berkes, 2009) or other stakeholders. Co-management processes need to examine and justify why changes to the status quo are needed, and to change attitudes and perceptions on why such management measures are needed. If not, attitudes of participants will remain unaltered, and their social relations remain guided by the values of individual gain rather than collective good (Jentoft, McCay, & Wilson, 1998). Co-management therefore needs to be approached as much as a political journey as a social and environmental

journey, as its success requires a detailed understanding and addressing the factors that could create barriers, rather than trying to apply an off the shelf and prescriptive solution to existing management systems (Kusumawati & Huang, 2015).

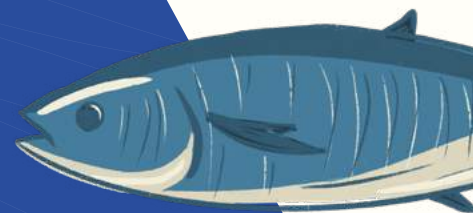
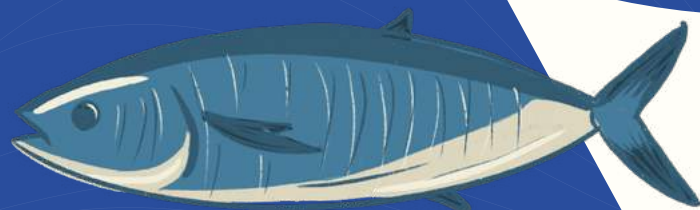
In his very early work on fisheries governance, Svein Jentoft explains that 'co-management is not so much about the rules per se as it is about the communicative and collaborative process through which these rules are formed: who participates, how debates are structured, how knowledge is employed, how conflicts of interest are addressed, and how agreements are reached' (Jentoft et al., 1998). Even with the best of intentions co-management might not work simply because the principles are not adhered to. For example, if the heterogeneity of small-scale fishers is not taken into account in the preparatory stages it is likely that measures will not fit everyone's needs (Robards & Greenberg, 2007). Hence, any co-management process requires an initial fisher's identification assessment, which maps out the differences within and diverse socio-economic realities of the fishing sector (Mitchell, Wood, & Agle, 1997).

Across the regions the principles of why, how, when and where to do co-management are similar, and their success is determined by the level to which the communities are involved as major players in the decision-making framework, and the political will of governments to make co-management a genuinely participative process of fisheries governance (Levine, Richmond, & Lopez-Carr, 2015). The co-management system and policy priorities agreed through the co-management process must be context specific. Implementing a co-management approach to fisheries sustainability is complex and context-specific, and there is a need to involve scientists and researchers across a wide range of disciplines to describe the complexity of fisheries dynamics and identify the tools necessary to address the fisheries problems identified (Said, Chuenpagdee, & Jentoft, 2018).

These challenges do not invalidate the co-management model – on the contrary, they reinforce it. All these insufficiencies are reparable. The model requires learning and time to improve its efficiency. For this, capacity building for all stakeholders and raising awareness on the model is essential.

CHAPTER 10

Conclusions and salient issues



CO-MANAGEMENT FOR SMALL-SCALE FISHERIES:
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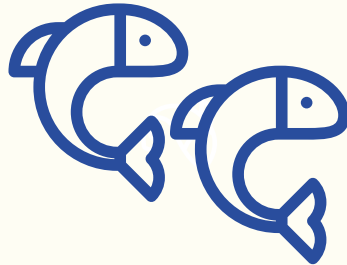
The idea of active participation of local resource users and communities in management is not a new one; it has been part of scientific literature and part of developing programmes since the 1960s. What is new is the increasing recognition, thanks to successful pilot case studies spread over the world, of the proven benefits of decentralized co-management programmes, that equally share authority and responsibility over resources and management areas (co-management).

The article highlights how co-management has the potential to contribute to the delivery of sustainable fisheries, whilst improving fisheries governance and empowering coastal communities to engage in the decision-making processes that affect their lives and livelihoods. Equally, co-management systems that have arisen around the world show promise to positively address equity and efficiency issues that are so important within small-scale fisheries today. Fisheries co-management will not be possible or appropriate in all fisheries and circumstances, but where appropriate it is a process that needs to be built from the bottom up and to evolve over time.

The article also dwells on the challenges of co-management, one of the most important being the need of governments and national administrations to understand basic principles of co-management and be genuinely willing to devolve power and to provide supportive legal frameworks that embrace co-management. In this way, the increased attention given to co-management by some European national governments, by the European Parliament, and its endorsement by Regional Fisheries Management Organisations such as the General Fisheries Commission for the Mediterranean and Black Sea (GFCM) is promising.

In this framework, it is very necessary to make sure the appropriate information, awareness and understanding of the benefits of co-management but also its key principles, attributes and functioning, is readily available to all the involved stakeholders, to enable them to apply this important potentially transformational tool successfully.

In this respect, the formal establishment and strengthening of a Focus Group on Co-management should have a role to play in the following aspects: 1) develop and hone a common vision, terminology, common language, the first step of which should be to agree on a common set of definitions; 2) act as a network to document, share and analyse fisheries co-management experiences, promote cooperation and build synergies between researchers and practitioners; 3) create a toolkit and training materials for all potential stakeholders (NGO, Administrations, fishers and scientists); and 4) develop a shared advocacy strategy to promote the wider implementation of co-management across Europe.



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