



WWF

GUIDELINES

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# FISHERIES CO-MANAGEMENT WWF GUIDANCE PAPER



## WHAT IS FISHERIES CO-MANAGEMENT?

**Co-management is typically defined as a collaborative and participatory arrangement between representatives of local user-groups and government agencies, sometimes also connected with agents such as research institutions and NGOs, and other stakeholders, to share the responsibility and authority for management of a resource. According to the [OECD](#), co-management is “a process of management in which government shares power with resource users, with each given specific rights and responsibilities relating to information and decision making.”**

In fishery science, co-management is a decentralised fishing management framework where fishers and administration share responsibilities over a fishery or fishing area. Scientists and civil society organisations often participate too, providing a scientific basis for the measures approved and ensuring that environmental or developmental aspects are also included.

The overall goal of co-management is to create trusted processes between the actors involved, by including the traditional knowledge of fishers ([TEK](#)) and their active participation in management, to enhance compliance, and improve monitoring and control of their fisheries.

These factors contribute to all actors taking co-responsibility for conserving resources in the fishing sector. Co-management has to be seen as a tool to implement adaptive management in fisheries, centering decision-making processes on an ecosystem-based use of resources (i.e. [EAF](#)). This is of the utmost importance in the current global context with climate change worsening the overfished status of stocks and the resilience of coastal habitats.

Historically, management plans for fisheries have been developed using a top-down approach which overlooked fishers, despite their expertise with the issues at stake. This has generated a massive drawback. In fact, when fishers are not consulted on decisions which directly impact their work and livelihoods they are rarely committed to implementing, or enforcing, management measures, seeing them as an unjustified imposition.

Administrations and fishery managers now recognise that putting stakeholders at the core of management action by adopting multi-stakeholder engagement and participative design in resources management is key to having meaningful, long-lasting and self-sustaining fishery management plans in place. This is highlighted in the strengthened focus on stakeholder participation in the [EU Common Fishery Policy](#).

Potentially, multi-stakeholder engagement, which includes cooperation of fishers in management and overall planning, can build or implement effective fisheries management, to ensure sustainability in the exploitation of the marine environment.

From an ethical point of view, co-management gives people the right to contribute to decisions that ultimately affect their lives and livelihoods. It also offers a tool for empowerment and is a way to reinforce self-esteem. This is of particular importance when we consider small-scale fishers who are ordinarily marginalised (especially fisherwomen).

From a practical point of view participating in decision making:

- strengthens the commitments of resource users to outcomes
- enhances the legitimacy of management
- promotes transparency and accountability
- encourages greater levels of compliance and stewardship
- elicits a more extensive knowledge base for decisions
- fosters a greater awareness of sustainability issues and ownership of marine environment resilience and good status.

Although fisheries co-management is an emerging concept (e.g. in the [FAO-GFCM Regional Plan of Action on Small Scale Fisheries in the Mediterranean](#)), traditional and self-management of fisheries has existed since ancient times, particularly in local and isolated contexts.

Co-management is an approach recently adopted in response to the perceived failure of centralised management of fisheries in avoiding the decline of fish stocks, and to a lack of government resources allocated to managing fishery resources effectively.

The participatory process is one of the key principles of sustainable development in a fisheries context and the [FAO Voluntary guidelines for Securing Sustainable Small-Scale Fisheries](#) specifically mentions co-management as a valuable tool. Co-management supports sustainable development in fisheries.

**CO-MANAGEMENT  
CREATES TRUSTED  
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OF FISHERS AND THEIR  
ACTIVE PARTICIPATION IN  
MANAGEMENT.**



# WWF AND FISHERIES CO-MANAGEMENT

**In essence, WWF considers co-management to be a collaborative and participatory process of regulatory decision making between relevant representatives of user-groups, government agencies, research institutions, NGOs and others.**

There is no blueprint for co-management and no standardized approach. Rather it represents a spectrum of arrangements, levels of sharing of responsibility and power, and ways of integrating local management mechanisms and more formalized government systems.

The scale of stakeholder engagement in these decision-making processes can vary widely, and can be seen as a continuum from fully top-down approaches (i.e. no stakeholder participation) to genuine co-management, where fishers and other actors are empowered to share decision-making power.

## Co-management: a serious institutional innovation

Bringing together fishers, government officials and others operating within the fisheries sector, co-management systems and processes vary in terms of the nature of power sharing:

- Information (when administrations explain their decisions to stakeholders)
- Consultation (when administrations collect stakeholder suggestions but decision making takes place with or without stakeholders' input)
- Collaboration (when administrations collect stakeholder suggestions and decision making takes into account stakeholders' input)
- Co-decision (when there is cooperation with stakeholders towards an agreement for solutions and implementation)
- Empowerment (when there is a delegation of decision-making power to stakeholders).

The degree of responsibility and consequent balance of power between administration and stakeholders can therefore vary substantially. WWF considers co-management to be a serious institutional innovation and to be effective when users (all stakeholders, including NGOs, and so WWF) are encouraged and empowered to participate in the setting of management objectives on equal terms.

WWF believes that the sustainable use of resources is an evident result of effective co-management. An evaluation of this effectiveness requires continuous feedback of information regarding the achievement of sustainability objectives. For this reason, a set of indicators for assessing the effectiveness of co-management have always to be adopted to assess the contribution of co-management to fisheries sustainability and sustainable use of resources.

Co-management can also be a valuable tool to achieve targets in multi-stakeholder efforts bundled in Fishery Improvement Projects.

Fisheries management globally is characterized by weak local coastal management capacity and governance, combined with the absence of formal legal frameworks and information and decision-making systems.

WWF is convinced that co-management can be of great advantage in particular to small-scale fisheries management.



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## WHAT ARE THE ADVANTAGES OF CO-MANAGEMENT?

**Co-management can deliver greater benefits to local communities because, by strengthening tenure rights and decision-making processes, it can result in increased and more equitably shared economic benefits.**

While co-management has been shown to deliver social benefits, it can and should also bring ecological benefits including an increase in the abundance of catches, while protecting habitats and promoting the sustainable use of resources. Co-management offers a way to overcome many of the failings of conventional resource management by creating a sense of responsibility and ownership in all those who have a stake in the undertaking.

### **Co-management encourages:**

- An enhanced sense of ownership and commitment to the outcomes which are supported by responsible fishing
- A greater sensitivity to local socio-economic and ecological restraints
- Improved management through use of local knowledge which creates a more extensive knowledge base for decisions
- Collective ownership by users in decision making
- Increased compliance with regulations through peer pressure
- Better monitoring, control and surveillance by fishers
- Improved opportunities for conflict management
- A greater awareness of environmental issues
- Improved quality of science and decision making for response to impacts of climate change in fisheries management.

**WWF RECOGNISES THAT CO-MANAGEMENT IS A TOOL THAT CAN OFFER A PROCESS WITHIN WHICH SOLUTIONS - IN FAVOUR OF SUSTAINABILITY - ARE LIKELY TO EMERGE.**



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## CO-MANAGEMENT AND SMALL-SCALE FISHERIES

**For small-scale fisheries in particular, co-management is a beneficial strategy. Standard centralised fisheries management approaches tend to focus on industrialised fisheries.**

In general, small-scale fishers target multiple species, whose stocks and growth rates can vary greatly from place to place. There is often a lack of information regarding the number of small-scale fishers per country and governments often have insufficient resources to enforce regulations on a national scale.

Small-scale fisheries regulations and management need to be adapted to local conditions and require buy-in from fishers to improve compliance and reduce enforcement requirements.

However, even when co-management meets the criteria of good governance, it may still fail to achieve the desired goals of ecological health and socioeconomic wellbeing because decision-making processes remain insufficiently flexible in their responses to ecosystem change (i.e. there is insufficient adaptive capacity in the decision-making system). To overcome this deficiency, it is necessary to go one step further and focus on adaptive co-management.

### **Adaptive co-management**

Adaptive co-management recognises that marine ecosystems are such complicated phenomena that we have to accept a significant amount of uncertainty and to adopt a strategy of 'learning by doing'. This involves experimentation with different measures to see what works and to adapt policy in the light of lessons learned.

Adaptive co-management allows for more nuanced knowledge. It is really the best option for small-scale fisheries as management measures can be refined and tailored to suit each unique context. Fishers' support for the measures they have designed increases the likelihood that these measures will be successfully implemented.

Furthermore, the co-management system supports the co-production of knowledge, where fishers, scientists and administrations have increased opportunities to work together to gather information that is more in-line with local needs and with increased levels of support in the findings. There is a huge benefit in terms of capacity building and empowerment in involving the different groups in data collection and ensuring that the findings are communicated in a language that is understood by all stakeholders. Where fisheries co-management is effective the environmental benefits can be substantial.

## WHAT ARE THE CHALLENGES OF CO-MANAGEMENT?

Introducing co-management is a complex and fragile process, demanding commitment from all involved. In some communities, especially those not willing to take on increased responsibility, it may not even be feasible. The following challenges need to be taken into account.

### **In-depth understanding**

Co-management requires an in-depth understanding of communities and the political system and a sizeable investment of resources in the initial stages. Often the lack of finance and appropriate external agents and local leaders inhibit its implementation.

### **Political will**

Co-management requires specific attitudes and capacities and a significant level of political will, which can take time to develop. Often governments are not willing to devolve or share power.

### **Imposing limits**

One of the biggest challenges to the co-management approach relates to the issue of representation (who is eligible to participate) and the degree to which those who claim to have a stake in the resource should have a say in how it is managed.

The list of stakeholders i.e. individuals, groups, organizations or sectors in society that have a clearly identifiable interest in the outcome of a policy or decision-making process could be substantial. In the interests of efficient decision making, however, limits must be imposed upon who actually participates.

To complicate matters further, not all stakeholders have an equal stake and consequently some may have more to lose than others when management measures are implemented.

### **Ensuring democracy**

In fisheries management it is generally accepted that user groups (fishers, fish processors, traders) should be involved in management – but the question remains as to who else should participate.

When developing co-management systems it is essential that adequate consideration is given to this issue, and various degrees of involvement are defined for each stakeholder to ensure that the system is truly democratic.

### **Addressing complexity**

Attention must also be given to the complexities found between and within states and communities. States and communities are not homogenous units and often multiple local interests are at play and multiple governance agencies are involved. Care must also be given to the fact that communities are often characterized by social fissures, conflicts and power differentials which can be reinforced by co-management if not well managed.

**FISHERIES CO-MANAGEMENT IS A COMPLEX AND FRAGILE PROCESS, BUT WHEN IT IS EFFECTIVE THE ENVIRONMENTAL BENEFITS CAN BE SUBSTANTIAL.**



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## WWF'S ROLE

Co-management is the approach WWF recommends to improve sustainable resource management around the world. There are, however, no hard and fast rules when it comes to co-management and where certain conditions or factors are lacking, co-management might not be feasible. WWF can play a key role in strengthening, fostering and addressing many of these factors.

### Key drivers in successful co-management projects

#### PRESENCE OF COMMUNITY LEADERS

Strong leadership from even just one individual in the community with good entrepreneurial skills, who is highly motivated and respected and prepared to make a personal commitment to the co-management implementation process, can be a decisive driver for co-management. WWF can play a key role in helping to identify these individuals and ensure that they are guided by collective actions and not self-interest.

#### PRESENCE OF EXTERNAL AGENTS OR POLICY ENTREPRENEURS

An agent of change, who can help expedite the co-management process, could be an NGO such as WWF, an academic or research institute, a government agency or a project team. Policy entrepreneurs are individuals who take advantage of opportunities i.e. policy windows to influence policy outcomes. Change agents can assist the community in: defining the problem; providing independent advice, ideas and expertise; providing training and technical assistance; guiding joint problem solving and decision making and developing management plans.

#### STRONG SOCIAL COHESION

Communities with shared norms, high levels of trust and good communication channels and who are well connected in networks and groups (such as associations for fishers, neighbourhood committees) can help co-management succeed. Cohesive communities



are more resistant to institutional changes and crises. WWF can build on existing social capital and help communities to strengthen cohesion.

### A RESOURCE CRISIS

A resource crisis can act as a catalyst for fishers to engage in co-management, pushing them to face the reality of their situation and the need to make changes to the way they fish. Although a resource crisis is a key driver for a shift towards co-management, it is essential that WWF encourages co-management processes to take shape before communities reach crisis point and promotes co-management as a way to ensure that a crisis can be avoided.

### A WILLINGNESS TO TRY NEW APPROACHES

This is a key determinant of success since a shift to co-management often requires a change in the mindset of both stakeholders and government officials. To truly internalize this shift can take some time. Yet, such changes are necessary to generate the political will and stakeholder commitment needed to support the co-management process both initially and in the long term. WWF can inspire change through exchange visits to areas where co-management is working successfully.

### INDIVIDUAL OR COMMUNITY CATCH LIMITS

Catch limits (where communities along with regulators determine the final allocation of the fishing quota to the community) have in many cases helped to prevent overfishing, promoted stability and a sense of ecological stewardship. They can play a key role in fostering users' sense of security over catch or space, which has social, ecological and economic consequences. In communities where such systems exist WWF can help reinforce these systems; where they do not, WWF can support communities in establishing and adopting those limits within their resource management plans.

### COMMUNITY-BASED PROTECTED AREAS

These can contribute to co-management success by confining the number of users, increasing access to information (i.e. local knowledge), lowering costs associated with information gathering, improved monitoring and enforcement, and restricting the spatial dynamics of fishing effort to well-defined areas. As above WWF can help strengthen the success of pre-existing protected areas or help communities develop plans for establishing protected areas through co-management.

### ENFORCEMENT MECHANISMS

Self-enforcing mechanisms in particular have been shown to contribute significantly to co-management success, especially when a system of penalties is imposed by strong operational rules designed, enforced and controlled by the local fishers themselves. WWF can help communities design these self-enforcing mechanisms.

### INFLUENCE OF FISHERS ON LOCAL MARKETS

This characterizes most successful co-management regimes. For example, fishers can improve their influence on the market through adopting specific marketing tactics, improved product quality, shorter intermediaries' chains, market timing coordination and eco-labelling strategies. The improved influence of users on local markets can result in multiple benefits to local communities, minimizing the probability of overexploitation and enhancing economic revenue by higher income per unit of effort. WWF can play a key role in this step by helping to identify alternative market access, proper eco-labelling systems and ensuring that actions are guided by collectivity and not by self-interest.

**THERE ARE MANY FACTORS, AS THE SCIENTIFIC LITERATURE HAS SHOWN, WHICH HELP STIMULATE A SHIFT TO CO-MANAGEMENT AND CONTRIBUTE TO ITS SUCCESS.**

## SPECIES:

sand eel  
(*Gymnammodytes  
cicerelus*)

## STAKEHOLDERS:

fishers, the fisheries  
administration, WWF  
and other NGOs and  
scientists

## FISHERY:

75 fishers along the  
Barcelona coast fishing  
with purse seines



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## “SONSO” SAND-EEL FISHERY CO-MANAGEMENT, SPAIN

### The initial situation

Driven by regulation changes at the European level the sand-eel fishery, which uses purse seines and involved 75 fishers along the Barcelona coast, was forced to close in March 2012. This closure created a huge crisis for the sector in the region and led the fishers to seek support from WWF, scientists and various administrations.

### Co-management measures:

- In April 2012 it was agreed to create a sand-eel co-management committee including fishers, the fisheries administration, WWF and other NGOs and scientists.
- The short-term objective was to meet the EU requirements to reopen the fishery by designing a new management plan based on a comprehensive scientific study and to manage the fishery during this interim period.
- In the long term, subject to approval of the management plan, the objective has been to implement the plan, to control its implementation, to monitor the indicators, to adjust fishing activity according to the harvest control rules and to decide on penalties in case of noncompliance.

### Outcomes and benefits

- In 2014 the sand-eel management plan was approved and the fishery re-opened.
- The co-management committee continues to monitor the fishery and adopts a true adaptive fisheries management approach.
- Their dedication to the committee has proven that co-management and the adoption of adaptive management has the potential to increase profitability without increasing fishing effort.
- Before the co-management committee was formed the price for sand-eel averaged €1/kg and now exceeds €30/kg.
- The fishers in this area have an increased sense of ownership, which has translated to high levels of compliance and long-term commitment to co-management.
- Having worked closely on the design and collection of data the fishers have increased trust in the data used; the collaboration allowed their essential knowledge to ensure stock sustainability was achieved easily and efficiently.

## SPECIES:

deep sea red shrimp  
(*Aristaeus antennatus*)

## STAKEHOLDERS:

scientists, fishers, WWF  
as observer, and the  
Catalonian government

## FISHERY:

bottom trawl fishery  
(300-900m depth),  
most important  
demersal resource  
in the northwest  
Mediterranean



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## RED SHRIMP FISHERY CO-MANAGEMENT, SPAIN

### The initial situation

The city of Palamós, 100 km north of Barcelona, is famed for its red shrimp trawl fishery. The fishery employs around 80 fishers, with the red shrimp making up 10% of the total landings (by weight) but 50% of total income.

### Co-management measures:

- The market value for red shrimp is very high (up to €150/kg) and has a total market value of €4 million a year. This led to the development of a co-management committee, which includes scientists, fishers, WWF as observer, and the Catalonian government. The committee has been working towards the sustainable exploitation of this resource.
- The co-management committee published an official management plan in May 2013 to regulate red shrimp fishing activity in fishing grounds off the port of Palamós and the fishing capacity of its trawling fleet. This was the first plan of its kind for the Mediterranean Sea, and included several measures to reduce fishing effort and preserve the juvenile population.
- The technical measures established by the plan included: fishery closure for two months in winter when juveniles are in the fishing grounds; use of a more selective mesh size and shape (40mm square instead of 50mm diamond); reduction of the number of trawlers in the fleet.
- The plan, with a five-year duration from the date of its publication, was implemented by the whole fleet from the first months of 2012, and officially published by the Spanish Government in 2013.

### Outcomes and benefits

- The results obtained show that the management strategy has been effective in reducing the fishing effort and improving selectivity thus moving the fishery towards sustainability.
- As with the sand-eel fishery, the co-management approach has allowed for more responsive and adaptive management strategies.
- In addition to improved management of the shrimp stocks, the fishers of Palamós have been empowered by the co-management collaboration to increase their visibility within the community and beyond. They have established a certification label for the shrimp, a local fisheries museum and a restaurant run by fishers for 'show cooking' events, offering them the opportunity to showcase the value of the fishing sector to the wider public.

## SPECIES:

common octopus  
(*Octopus vulgaris*)

## STAKEHOLDERS:

scientists, fishers,  
NGOs, development  
agencies and the  
Senegalese and  
Moroccan governments

## FISHERY:

1,650 fishers in Petite  
Côte, situated in the  
central area of the  
Senegalese coast



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## OCTOPUS FISHERY CO-MANAGEMENT, SENEGAL

### The initial situation

Octopus is one of the country's most important marine resources, and octopus fishing has a strong traditional influence. Its fleet works with motorised wooden canoes (*pirogues*) using a jig-style hook (the *turlutte*). There is no regular fishing pattern due to the biology of the species, which is highly influenced by environmental changes. Although there are many discrepancies in fishing statistics, data shows that octopus in Senegal is the victim of overfishing. This has given rise to the start of a participatory process to launch a national plan to manage octopus fishing.

- Senegal was the fifth exporter of octopus to Europe in 2016 (4,634 tonnes with an average first sale price of € 5.60 per tonne). Senegalese catches between 2004 and 2015 amounted to 5,600 tonnes of octopus (60% caught by the traditional fleet).
- The majority of catches come from the Petite Côte, situated in the central area of the Senegalese coast.
- This fleet employs 1,650 fishers and 720 people in the processing industry, the majority of whom are women.

### Co-management measures

- Work on co-management in Senegal began halfway through the 2000s; the first step taken was to determine the spawning period with the aim of establishing a closed season for octopus fishing.
- Stock was then reinforced thanks to the use of pots and jars to encourage egg-laying. After the initial success fishers became the main supporters of co-management. In fact, they launched additional measures, including the creation of a Marine Protected Area, comprehensive reserves, seasonal closures, a limit of 50 canoes per day and 20 nets per canoe.

### Outcomes and benefits

- Local co-management initiatives like this have led to a collaborative process in developing a national plan for managing octopus fishing. Nevertheless, there are still challenges to be addressed, such as the lack of information on the octopus population and definition of sustainable use levels.
- In 2016, this improvement process resulted in the signing of an agreement by Senegal and Morocco through which the latter will help develop a management plan for octopus fishing in Senegal.



- Co-management has brought huge benefits in numerous areas on the Petite Côte, both for the species and for fishers.
- Biological benefits include an increase in catches and the average size of the octopus. Furthermore, improvement has been seen in the number and abundance of species associated with this animal, according to the majority of people interviewed. This type of management has had a highly positive response from the fishing community. Unsurprisingly, traditional knowledge is being included as a basis for the measures that are implemented. The experience of fishers is reflected in co-management and compliance with measures, such as net mesh limits, has been improved.
- Another key issue is the increase in the income of fishers and sellers of fish, although this may be an effect of the strong demand for octopus on international markets.
- Recently the government has adopted some of the measures in operation in this zone, meaning they have made the leap from the local scale to state level within the national plan.

See this [case study](#) for further information.

Video material available [here](#) (EN/FR, subtitles in Spanish)

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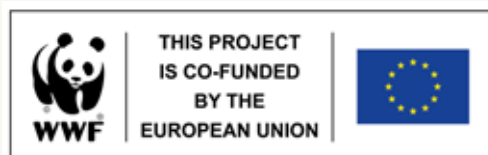
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