

Strengthening regional resilience through adaptive collaboration

A case study on the fisheries co-management
Northern Bohuslän

POLICY BRIEF 2020:5



Nordregio



This policy brief examines how co-management arrangements within small-scale fisheries can play a key role in enhancing sectoral and regional resilience. Despite major challenges, “multi-stakeholder collaborations” - such as co-management - demonstrate the potential for innovative knowledge transfer and strategic adaptation processes within the fisheries sector. The focus here is on Co-management Northern Bohuslän (Samförvaltning Norra Bohuslän), which promotes sustainable local fisheries and blue growth on Sweden’s west coast. The case illustrates how, under appropriate conditions, participatory local efforts can significantly contribute to sustainability and resilience. The policy brief presents findings on related challenges and opportunities, including recommendations on future directions for the co-management initiative itself, and more general suggestions for co-management as a means to promote sectoral and regional resilience in the Nordic region.

The Nordic coastal fisheries sector: challenges and opportunities

Fisheries play a vital role in the economic growth and sustainability of Nordic coastal regions and communities. The sector offers employment to fishers, processors and supporting industries. It also promotes sustainable food provision, maritime cultural heritage and increasing the attractiveness of coastal communities. European Union (EU) and national level policies supporting local fisheries aim to enhance economic activities, resilience and socio-cultural values in coastal regions. However, these policies tend to benefit, disproportionately, large scale fisheries

over local small-scale practices, which has created uncertainty among many fishers (Tunon et al. 2019). As a result, small-scale coastal fisheries in the Nordic Region have become increasingly vulnerable, facing obstacles, such as, low profits, competition between fishing fleets, and urbanisation processes that significantly challenge the regeneration of fishers (Viðarsson et al. 2018; Björkvik et al. 2020, Høst & Christiansen, 2018). The ability to cope with these challenges, and strengthen sectoral resilience around fishing activities, has become essential for sustaining local livelihoods and the social and cultural identities strongly associated with Nordic coastal regions.

KEY RESILIENCE CONCEPTS

Within the social-ecological context of this study, resilience is understood as, “the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop” (Stockholm Resilience Centre, 2015). Regional resilience refers to, “a region’s capability to cope with uncertainty due to external and internal disturbances” (Giacometti & Teräs, 2019). As such, the management of natural resources needs to embed the boundaries and complexities of ecosystems, be adaptative to changes and involve local actors and users. Coastal regions must be resilient to disruptions in the ecosystem, as well as complex institutional and governance setups. The lack of capacity to adapt and innovate as inflections occur can compromise the efficient use of marine and coastal resources that support the blue economy and local communities.

Governance in the fisheries sector: from top down to co-management

Fisheries governance at the EU, national and municipal levels have in modern times been managed through top-down processes. Policymaking has been dominated by large scale fishing industry, policymakers and scientists, with a limited engagement of local small-scale fishers and ecological knowledge (Mackinson & Holm 2020; Björkvik et al 2020). In Sweden, for example, centralist corporativism implied an uneven representation of fishers on the National Board of Fisheries. Small-scale local fishers felt marginalised and excluded from the policymaking process, which led to mistrust both within the sector and between fishers, scientists and policymakers. This has contributed to knowledge gaps and deep-rooted conflicts between stakeholders who challenged the legitimacy and effectiveness of policies (Lind et al 2020). In response, the 2002 reform of the EU’s Common Fisheries Policy outlined the

need for a more holistic and integrative approach to fisheries governance based on participatory processes and increased stakeholder engagement (Holm et al., 2020). Consequently, the 2002 reforms facilitated a proliferation of co-managed fisheries in different European regions (ibid, 2020), highlighting the potential of governance through co-management for strengthening resilience in local and regional fishing contexts.

Co-management can be understood as a regime allowing key stakeholders to bring experiential knowledge into decision-making processes. In short, they are “systems in which responsibility for management is shared between authorities and user groups, usually at the local level” (Symes 2006). Co-management is often associated with addressing environmental, economic, social and governance issues, based on an approach tailored to the specific contexts in which they operate (Armitage et al. 2011). While other collaborative

fisheries governance models also exist, co-management arrangements have emerged, particularly at the national level within local and small-scale fisheries contexts. Co-management reflects a shared mission to bring political decision-makers, researchers and local fishers together, bridging the knowledge gaps and pooling resources in order to build trust and seek solutions to common problems (Holm et al., 2020). The degree of stakeholder involvement and power sharing can vary from promoting dialogue, advising policymakers, and delegating decisions related to the fisheries management in a defined geographic area.

Fisheries co-management: strengths and limitations

Co-management platforms have become integral to the implementation of the EU's ecosystem-based approach, maritime spatial planning and the blue growth agenda (Linke et al., 2020). This is consistent with the increased

involvement of fishers, which improves compliance, collaboration, and alignment of sustainability goals (Björkvik et al 2020, citing Birnbaum et al., 2015). Other research also highlights that co-management can enhance adaptive capacity to cope with disturbances, or changes in institutional, economic, social or ecological conditions (Armitage et al., 2011). Small-scale fishers are often strongly impacted by management decisions. In this aspect, co-management may also encourage the transfer of power and resources from central authorities to local levels of government (Cinner et al., 2012). Given the horizontal and vertical space provided for stakeholder interactions, and the ability to cope with variability and build longer-term adaptive responses, co-management can potentially strengthen sectoral and regional resilience (Linke et al., 2020; Armitage et al., 2011). In the following table is an overview over the key strengths and limitations.

Picture: Example of catch found in the Koster-Väderö region of Co-Management Northern Bohuslän. Photo: Andrea Morf.



Table: An overview of key strengths and limitations applied to small scale-fisheries co-management

Strengths	
Adaptive capacity and resilience	Promote learning and understanding amongst stakeholders which enhances ability to adapt to changing contexts.
Horizontal and vertical coordination	Strengthen links between stakeholders at different levels of governance in a local context.
Stakeholder legitimacy	Open and inclusive participation processes promote trust and creates a critical mass of stakeholders. Speaking with one voice can increase access and influence policymakers, thus fostering a transfer of power and resources to local level stakeholders.
Knowledge sharing & effective decision making	Stakeholders bring a wide range of knowledge, expertise and willingness to discussions that has an instrumental effect on the quality and effectiveness of consensus-based decisions-making processes.
Conflict identification and management	Conflicts between stakeholders are resolved through discussion and deliberation, which strengthens stakeholder relationships through enhanced trust and understanding.
Enhanced social capital	Collaboration facilitates the development of shared meanings, values, trust and common definitions among stakeholders within a policy area.
Limitations	
Mandate and accountability	Lack of formal mandate and informal structures can impact the long-term direction and purpose of collaborative frameworks. Stakeholders are not elected, thus lacking direct accountability.
Financial continuity	Reliant on public funding and resources to finance activities.
Leadership	Continuity of collaboration, project and/or policy implementation often dependent on proactivity and entrepreneurship of members.
Power asymmetries	Some members of a platform tend to be more dominant and influential than others, due to available time, resources, and knowledge, which can lead to lack of transparency in decision-making procedures.
Aggregation of Interests/ Lowest Common Denominator Policies	Decisions reflect an aggregation of different interests, rather than a genuine policy consensus. The policy that is acceptable to all group members is not necessarily the best policy for solving a challenge or fostering new opportunities.
Institutional memory	Knowledge and expertise can be lost when members leave the platform. This also affects recruitment and succession potential.

Sources: A synthesis based on Linke et al., 2020; Armitage et al., 2011; Symes, 2006, and Cinner et al., 2012.

Case study: Co-management Northern Bohuslän

The following case study of Co-management Northern Bohuslän (CMNB) exemplifies the emergence of fisheries co-management in the Nordic Region. CMNB has contributed to the development of joint strategies and solutions for sustainable small-scale shrimp fisheries for over two decades. The case study analysis is based on desk reviews of policy documentation, semi-structured interviews, and a feedback workshop with key representatives of the co-management. In exploring its key drivers, functions, governance structure, and challenges, CMNB emerges as a model designed for overcoming present and future local and regional resilience challenges.

Development of the co-management

The CNMB operates in Swedish coastal waters, including a marine trench (fjord) located between the Swedish mainland and the Koster and the Väderö archipelagos. The area is renowned for its unique biodiversity and outstanding nature conservation values in the water and onshore, while marine and coastal activities form an essential part of the local and regional heritage, identity and economy. The trench makes an ideal habitat for Northern Shrimp (*Pandalus borealis*) and supports a 100 year old tradition of small-scale commercial trawling. However, the Koster-Väderö area and the key fishing grounds have in the late 20th century undergone

Picture: One of the fishing boats that is part of the co-management. Photo: Andrea Morf.



substantial governance transformations toward strengthened environmental protection. This contributes to repeated conflicts between sea use and conservation interests, as well as mistrust between fishers and other local stakeholders, researchers, and authorities.

To mitigate conflict and promote common ways forward, co-operation mechanisms emerged in the late 1990s, facilitated by local authorities and stakeholders with the ambitions and skills necessary for conflict resolution and dialogue. A milestone was the Koster-Väderö Agreement of 2000, regulating the fishery inside the national trawling boundary by special requirements (codified in fisheries law in 2001, based on EU-nature protection legislation). In 2004, the Swedish Government launched a fisheries co-management pilot initiative designed to promote local coastal fishing, bottom-up engagement, and sustainable regional

and rural development. This provided an opportunity to formally establish the CMNB as a project with an overall aim to achieve sustainable coastal fishing activities in biologically important areas, while also promoting socio-economic development and cultural heritage values of the coastal communities in Northern Bohuslän.

Over time, the CMNB project-based format became a long-term arrangement carrying out collaborative activities. The co-management platform and activities was pivotal to the 2009 establishment of Sweden's first Marine National Park in the Koster Sea, implying a combined multiple protected area design with differentiated protection and allowing sustainable use in appropriate areas through e.g. aquaculture and fishing for shrimp and lobster (Morf et al., 2017). Now represented in the national park steering board, the CMNB is an essential member in its management, providing capacity and local knowledge.

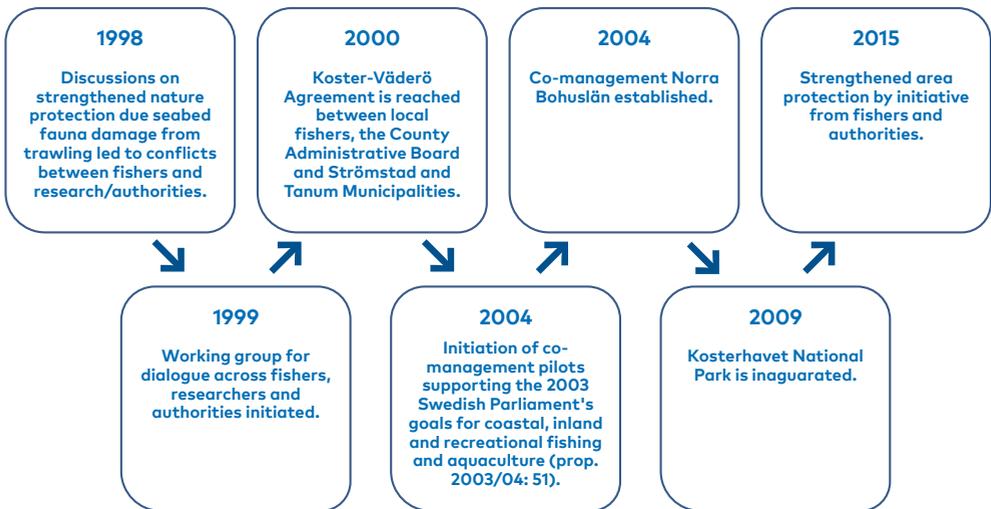


Figure 1: Key events in the development of the CMNB.

Sources: County Administrative Board, 2015; personal communication, 2020.

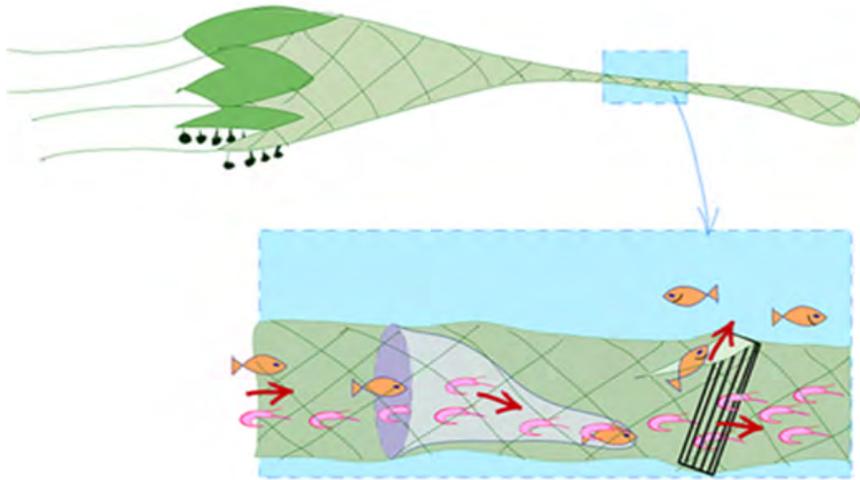


Figure 2: The Koster trawl method - Selective shrimp trawling that reduces by-catches.
Source: Co-Management Northern Bohuslän.

Governance and collaboration arrangement

While collaboration among local fishers in Northern Bohuslän has been in place for a long time, the governance structure of the new co-management reflects a broad composition of actors, including fishers, researchers, and politicians. CMNB supports knowledge and information exchange at local, regional and national levels. The composition of the steering committee aims to balance potentially conflicting interests as well as to promote legitimacy; its informal and flat structure has been based on continuous consensus-driven processes implying an "open agenda" and "open door" policy.

"To me – this has been an exciting democratic journey – you can achieve things without formal boards – but instead an informal steering group where you solve issues just as well as if you would have decision-making meetings."

- Co-management representative, 2020

Both legitimacy and mandate are so far mainly informal, needing to be continuously re-created through contact, mutual trust, dialogue and collaboration. The co-management members meet regularly in person for roundtable meetings, while external parties are involved on a needs-basis.

The co-management members emphasise that this open dialogue processes helps exploring and anchoring

potentially conflictive issues before they enter a formal decision-making process. They also pointed out that the administrative principal and process leader plays a key facilitating role, coordinating both representatives and tasks of the co-management. The municipalities of Strömstad and Tanum are recognised as essential members, given their political priorities for local fisheries and collaborative approaches.

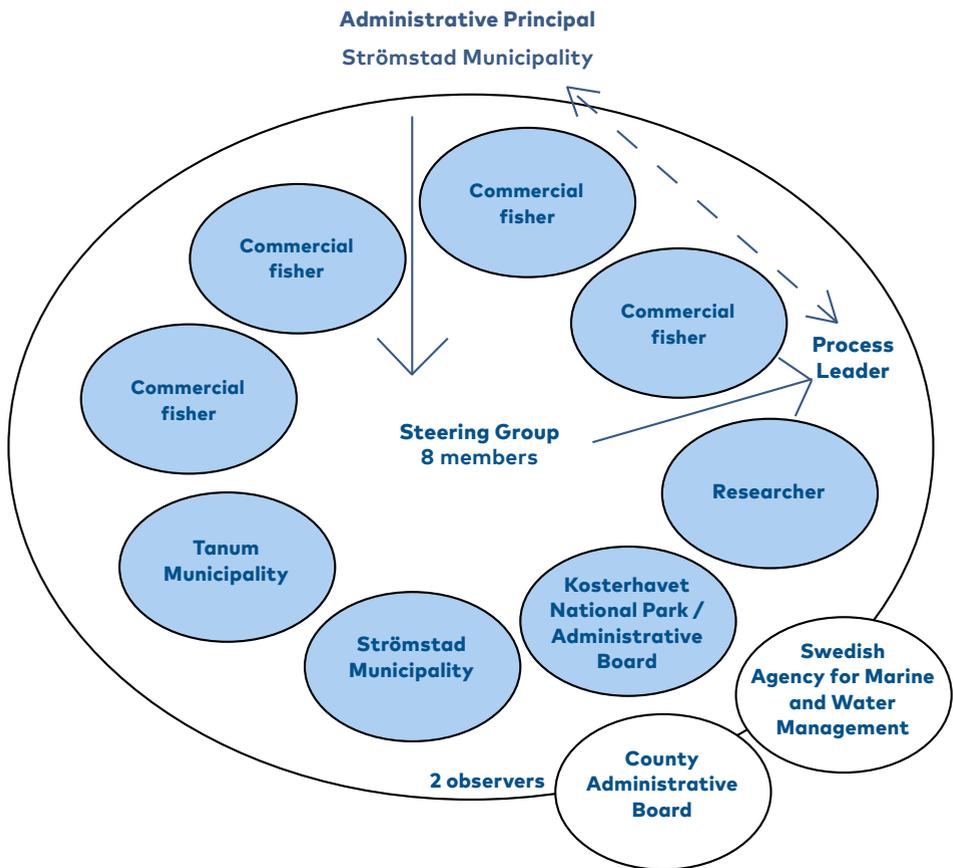


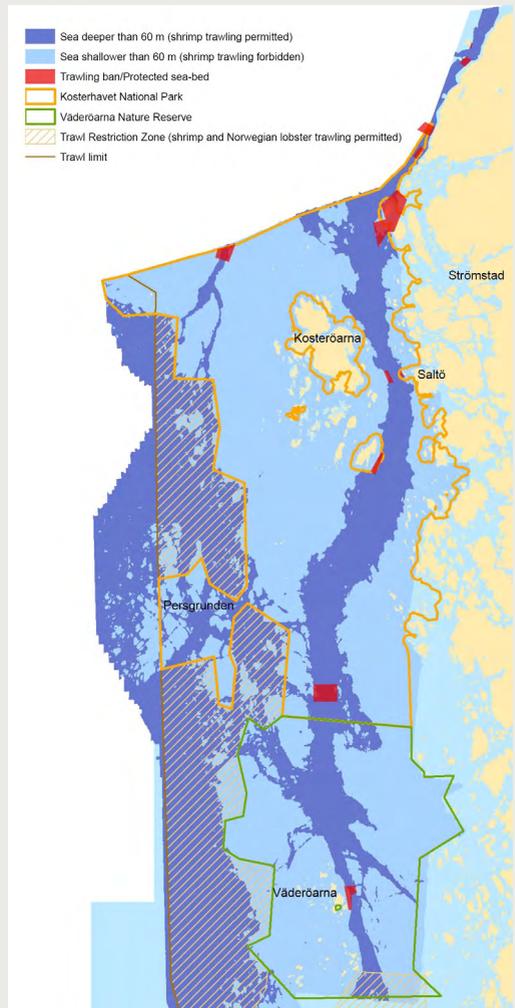
Figure 3: Governance model of CMNB. Source: County Administrative Board, 2015.



Picture: Fishing boats in the Koster-Väderö region. Photo: Andrea Morf.

Facts about Co-Management Northern Bohuslän

- A multi-stakeholder collaborative arrangement established in 2004, with the mission to promote coastal fishing culture in Northern Bohuslän, and sustainably balance biodiversity while creating growth and value for the local fisheries and communities
- Operates in the coastal waters outside Tanum and Strömstad Municipalities, up to four nautical miles from land. Fishing in this area is regulated by the Koster-Väderö Fjord Agreement and Swedish Fisheries Act (1993:787), and a limited number of licensed Swedish vessels operate there – making the fishers a defined group.
- The steering committee consists of local shrimp fisheries, municipalities (Strömstad and Tanum), regional and national authorities including County Administrative Board of Västra Götaland, Swedish Agency for Marine and Water Management (SwAM) and Kosterhavet National Park as well as research groups.
- Receives financing from the EU fisheries fund as well as targeted project funding from the municipalities
- Reflects how local efforts can continue to contribute significantly to the sustainability and resilience of coastal regions and municipalities.



Map: The Koster-Väderö Fjord and operative area of CMNB. Source: County Administrative Board Västra Götaland.

Co-management functions

The CMNB plays a key consultative role in promoting sectoral interests to the regulating authorities and decision-makers in the area.

Local shrimp fisheries are to a large extent regulated by national-level legislation, including the place-based Koster-Väderö Agreement. Yet, the fishers involved in CMNB have formulated their own management rules and in the wake of the agreement developed them further, proposing them to the relevant authorities.

After a recent review of regulations, their suggestions have become integrated, making resource management more effective. For example, complementing earlier delimitations and gear regulations with competence requirements for a license (e.g. training in marine ecology), and monitoring compliance and outcomes of SwAM, the Coast Guard and the County Administrative Board, including enforcement by fines and license withdrawal.

In developing and promoting adaptive collaborative practices among fishers, the CMNB demonstrates strong cross-level communication that encourages efficient regulation compliance processes. The co-management also supports diversification processes within fisheries, including technological development of selective and sustainable equipment used in fishing.

“When it comes to the establishment of the Kosterhavet National Park, the work done in the co-management has been essential for the dialogue and the capital of trust that was built in that process.”

- Co-management representative,
2020

In a Nordic context, a key tenet of the co-management has been skills promotion the development of mutual training courses, project activities and events. Since the early 2000s, several CMNB initiated trainings in marine ecology have been held. These are targeting coastal fishers and tourism entrepreneurs interested in operating in the area, and with a willingness to learn more about collaborative management and sustainable fisheries practices. In parallel, fisheries technical workshops were held, where fishers shared their skills and discussed future avenues with scientists, authorities, politicians, civil societies, and NGOs. Both types of trainings have enhanced mutual understanding and co-production of knowledge, as well as, improving collaboration dynamics, often beyond the geographical scope of the CMNB.



Picture: Fishing boat in the Koster-Väderö region. Photo: Andrea Morf.

Key challenges – collaboration, continuation, and mandate

While CMNB has contributed to local and regional resilience within the fisheries sector, significant challenges remain that threaten its long-term continuity and relevance. In later years of operation, these challenges concern the internal capacity to keep up the so-called co-management strengths, including the ability to broaden participatory processes and address external threats that have become increasingly apparent and urgent. Other challenges are:

- Lack of funding and human resources, e.g. ensuring a continuous succession and recruitment of a young generation of fishers;
- Uncertainty about the continuity of leadership and coordination of activities;
- Defining a clear mission statement;
- Capacity to influence and deal with the complexity of high-level policy decisions;
- Threat of participation fatigue;
- Maintaining levels of trust between stakeholders with conflicting interests.
- External threats, such as potential changes in how trawl fisheries are generally regulated in marine protected areas (e.g. a potential ban of specific fishing practices).

Key contributions to regional resilience

By building a strong network and alliance based on shared interests and a common narrative, CMNB has stimulated the production and integration of scientific and experiential knowledge. This has added credibility, effectiveness, and legitimacy to management proposals. In turn, it demonstrates the importance of considering many socio-economic and demographic parameters to support sustainable place-based fisheries governance, as well as the upstream and downstream distribution of local blue growth values.

The co-management model also recognises that collaboration with engaged and invested researchers is important in identifying challenges and hands-on solutions for resilient fisheries practices. The key resilience contributions (figure 4) of the co-management have been considered across four overlapping dimensions related to governance performances, ecological issues, and social and economic achievements. These observations are based on documentary studies, interviews and a verification workshop with informants.

GOVERNANCE

- The flexible and informal way of working promotes mutual trust and agreement.
- The strengths of the "informal mandate" needs to be continuously re-established and deepened through active work of the members of the group.
- CMNB functions as official contact-point for feedback and formal review processes related to local fisheries, promoting effective coordination with political and management processes.
- A forum promoting multi-stakeholder dialogue from a local fisheries perspective - mobilising relevant networks and stakeholders.
- Consensus-driven process (top down meets bottom up), building on mutual trust and dialogue across key groups.
- Promoting scientific information in fisheries/conservation management and at the same time allowing participation and including different types of knowledges.
- Knowledge transfer and integration between different stakeholder groups and mutual capacity development.

SOCIAL

- Reflecting the importance of local fisheries for cultural identity, intangible maritime cultural heritage
- Disseminating the knowledge and good practices that the co-management arrangement provides.
- Facilitating communication and mutual learning amongst fishers, researchers, public servants, and other societal actors.
- Building of mutual understanding and trust over time (social capital, building "informal mandate").
- Facilitating meaningful participation with opportunities for life-long learning and jointly developing improvements.
- Over the years, deeper and more continuous participation, communication, collaboration and negotiation – resulting in mutual learning, collaborative problem solving and conflict resolution.

ECOLOGICAL

- The co-management in its design reflects a context-specific socio-ecological system - archipelago and marine trench with related small-scale marine use activities.
- Demonstrating the capacity of multi-stakeholder dialogue, thus enabling fishing activities when Koster Marine National Park was inaugurated, which in turn has been essential for the socio-ecology of the region including the Norwegian side.
- Network and activities have been important for the establishment of Koster Sea national park and still play a central role in its ecosystem-based management.

ECONOMIC

- Promoting the continuity of local fishers' livelihoods and related chains of sustenance and production. This includes both local produce and a first attempt on a local brand and marketing.
- Enabling an establishment and continuity of supporting services (both upstream and downstream) forming the basis of a thriving archipelago and building the attractiveness and identity of coastal communities.
- Providing a base for local livelihoods and coastal tourism building on the values created by fisheries and related maritime cultural heritage.

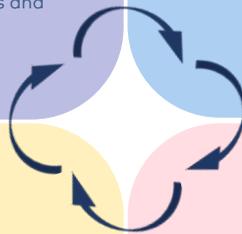


Figure 4: The key contributions of the co-management to regional resilience.

CONCLUSIONS AND KEY RECOMMENDATIONS



THE FUTURE OF CO-MANAGEMENTS IN THE NORDIC REGION

This policy brief has explored the key role of co-management as a model favouring small-scale fisheries governance for sustaining local economic blue growth and environmental limitations in Nordic coastal regions. In the Swedish context, the development of CMNB grew out of conflicts between different interests and a need to protect nationally unique local biodiversity while sustaining commercial fishing activities. The co-management has helped to reduce conflicts and tensions among fisheries stakeholders by creating a context-specific framework fostering mutual learning and a co-production of knowledge. In doing so, the co-management has shown how the fisheries sector in the region is well placed to develop solutions to shared problems requiring collective action.

The co-management continues to play an important role enhancing local and regional identity, economic growth, regional resilience and sector adaptation. However, in a short- and medium time frame, the co-management needs to promote internal and external awareness of its strengths and weaknesses. This will help the co-management to establish a clear future vision on how they can continue to play a role strengthening the resilience of the region's fisheries sector and maximising opportunities for blue growth.

It appears justified to lift co-management as one possible 'best-practice' model for the fishing sector in the Nordic Region and also promote it beyond this sector and across all levels of governance. The unique dynamics of CMNB, and its legitimacy built over the years through continuous stakeholder engagement, provide lessons on how to apply co-management in other sectors and areas of policy and decision-making. However, given that the type of design and structure is determined by local and regional characteristics and contexts, there is no one size fits all model of co-management. There are valuable experiences and knowledge at local levels to be shared in the Nordic Region. In addition, cross-border areas could benefit from adopting co-management frameworks that are flexible and adaptable to local differences in governance systems.

KEY RECOMMENDATIONS

The following recommendations are targeted at local, regional, and national authorities, political decision makers, and other actors developing and implementing co-management models to promote long-term collaboration for sustaining local fisheries and enhancing sector and regional resilience.

Governance, process, and resilience

■ **Inclusivity within the platform:**

Broaden participation to include various types of NGOs and fishing associations, cultivating a wide-ranging common knowledge base and ensure that there are no specific dominating actors or groups.

■ **Think cross-border:** Consider the possibility of soft cross-border collaboration focusing on transboundary marine challenges (e.g. spatial issues) as well as cross-border knowledge exchange.

■ **Acknowledge trust-building and allow time and space:** Learning from experiences often depends on the degree to which stakeholders know each other. Acknowledging the time this process can take may help identify added strengths of co-management approach.

■ **Be ready to adapt to local situations and external changes:** Changes at all levels in governance, socio-ecology, fish stock, demand and pricing, regulatory regimes need to be acknowledged and included in the design.

■ **Think bottom-up and top-down:** Where appropriate and effective, mutually embed and link local-regional self-organisation with higher level processes.

Recommendations for Co-Management Northern Bohuslän

■ **Update the Co-Management Northern Bohuslän vision and mission statement,** including a revision of how current policies on co-management are integrated into local and regional strategies.

■ **Keep up the continuous "informal legitimacy" work** within and outside the organisation.

■ **Provide clear directions but maintain the flexibility in content and administration:** Maintain the "open-door and agenda", but also set specific goals, targets, and evaluation processes.

■ **Develop annual plans** that identify short and long-term goals for the platform, and identify the main challenges and opportunities for the fishing industry in the region to work with and set priorities.

■ **Promote the capacity to identify and address external change,** especially higher-level policy impacts by securing funding and human resources.

■ **Initiate fundraising** by linking the co-management's activities to the commercial potential of marine products in other sectors and local enterprises.

The co-management model in a regional and national context

- **Raise national awareness:** Enable co-management as a complementary resource management model, and formalise its mandate nationally, a process that has been initiated but is still pending.
- **Entrepreneurship:** Assess the potential to build on local brands and regional quality products. Connect industries and see collaborations such as CMNB as possible coordination platform for future clusters of fisheries-related initiatives, including but not limited to innovation in fishing, aquaculture and tourism.

- **Continued training – also for a future generation:** Enhance the support of existing education and training activities, possibly integrated with vocational training targeting youth. Explore cross-border collaboration for this purpose.

- **Comprehensive assessment of trainings:** Evaluate past educational and training courses and ensure both robust design and availability for the coming five years. Education in general and these trainings specifically have great cross-border and Nordic collaboration potential.

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