Fisheries Co-Management - Theoretical aspects, international experiences and future requirements

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Theoretical aspects, international experiences and future requirements

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First I will thank the organizing committee for giving me the opportunity to give a presentation on Fisheries co-management here at this conference.

The paper I am going to present this afternoon is based on material obtained through participation in 3 research projects on fisheries co-management, as part of the OECD study on: Efficient Management of Living Marine Resources, the EU Research project: Devolved and Regional Management Systems for Fisheries and the Fisheries Co-management: A Worldwide Collaborative Research Project. The presentation draw on work, which I have undertaken in collaboration with my two colleagues Sevaly Sen and Tomas Vedsmand.

Introduction

The crisis in the fishing industry has gradually led to increasingly rigorous rights and rules of fishermen's activities. This, therefore, places fisheries management institutions in the very centre of the debate, where the possible solutions to the problems may be found. The current crisis in fisheries management can thus be argued to be caused to some degree by a lack of legitimacy of several management regimes. Government-centred regulation which has been applied in the past (quota management, input restriction, limited entry and individual fishing quotas) creates incentives to race for fish, break the rules and to mis-report catches. In addition it has also been expensive to administer and enforce these rules.

The effectiveness of existing fisheries management regimes in maintaining or achieving sustainable resource utilisation is constantly debated and questioned as fisheries in many parts of the world continue to be under pressure or in crisis. In recent years there has been growing recognition that user groups have to become more actively involved in fisheries management, if the regime is to be both effective and legitimate.

Legitimacy of management regimes and compliance of rules can be improved by transferring greater responsibility to user-groups or by consulting them in management matters. In this relation representation and participation of user-groups in the decision-making process is important. In fact there is a growing awareness among fisheries administrators world-wide, that sustainable and efficient fisheries management regimes depend not only on the content of the schemes, but also on the support and adherence from the users.

What is Co-management? (Overhead 1)

Fisheries co-management is defined as an arrangement where responsibility for resource management is shared between the government and user groups and is considered to be one solution to the growing problems of resource over-exploitation. If the regime is both to be effective and legitimate. introducing a co-management arrangement, which can be defined as a dynamic partnership using the capacity and interest of user-groups complemented by the ability of the fisheries administration to provide enabling legislation.

Co-management is also a mean to reorganizing the fisheries management system. Co-management is - from this perspective - an institutional process of integrating and reallocating management responsibilities and competence (legal power) among participants by sharing the costs deriving from fisheries management with the users. Fisheries co-management is based on the following hypothesis. The involvement and participation of user-groups create incentives for cooperation in order to formulate and implement more efficient, equal and sustainable management schemes which would benefit all parties.

Co-management provides some sense of ownership to the fish resources, which makes user-groups far more responsible for obtaining long-term sustainability of the fish resources. It might also be more cost-efficient in terms of administration and

enforcement than centralized systems, but administration costs may increase in a co-management system, as the process may be rather time consuming, involving several interest groups.

Co-management is often referred to as relations between fishermen and the national administration including fisheries research institutions, mainly concerning regulation methods, quota allocation and stock assessment. However, co-management can also be perceived in relation to market activities, whereby relations between fishermen and buyers come in focus. As market dynamics become more important to fishing activities, it can be expected that coordination of market performance and fisheries management measures will be increasingly important.

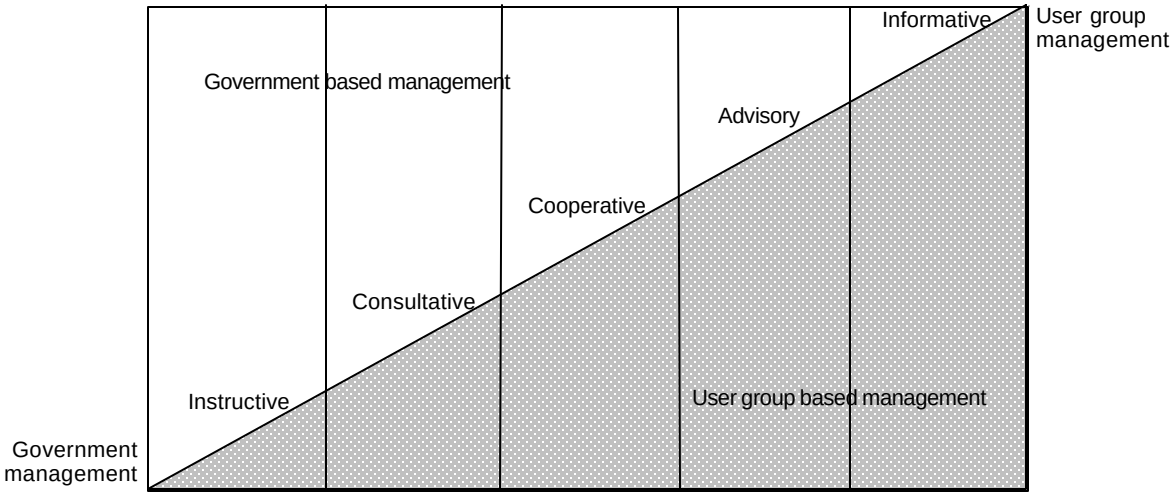
Co-management is a set of institutional and organizational arrangements (rights and rules), which determine how the fisheries administration and user-groups cooperate. A co-management arrangement is not a static legal structure of rights and rules, but a dynamic process of creating new institutional structures. A co-management institution can therefore be designed as an entirely new institution or can be based on already established institutional structures. The latter might often be the case in fisheries, where co-management institutions usually evolve as incremental user-group involvement in certain management tasks.

The devolution of authority to manage the fisheries, away from the fisheries administration to user-groups, may be one of the most difficult tasks of co-management. On the one hand, the fisheries administration may be reluctant to relinquish their authority, or portions of it, and are often opposed to decentralization. On the other hand, user-groups may neither have the aspiration nor the capabilities to undertake enhanced fisheries management responsibilities.

Advantages of approaching fisheries management as a bottom-up process versus the traditional centralized top-down system may be a high degree of acceptability and compliance with regulation measures, due to the participation of user-groups in the decision-making and implementation process.

Once user groups are involved in the decision making and implementation of fisheries management, a spectrum of co-management arrangements can be identified. The figure illustrates the various types of institutional set-up for different co-management arrangements.

Figure 1 Spectrum of Co-management (Overhead 2)



In the instructive type, there is only minimal exchange of information between government and users. This type of co-management regime is only different from centralised management in the sense that the mechanisms exist for dialogue with users, but the process itself tends to be government informing users on the decisions they plan to make.

In the consultative type, mechanisms exists for government to consult with users but all decisions are taken by government.

The cooperative type of co-management is where government and users cooperate together as equal partners in decision-making anf this type of co-management is of many scholars seen as the "real" type of co-management.

In the advisory type, users advise government of decisions to be taken and government endorses these decisions.

In the informative type, government has delegated authority to make decisions to user groups who are responsible for informing government of these decisions.

However, this typology is a simplification of a very complex situation. There is a multitude of tasks which can be co-managed under a different type of co-management arrangement at different stages in the management process.

Overhead 3
Co-management covers a broad spectrum of possible collaborative decision-making between government and user groups encompassing:

- the roles of government and user groups in decision-making;
- the types of management tasks which can and want to be co-managed by user groups and government and;
- the stage in the management process when co-management is introduced (planning, implementation, evaluation)

Roles of government and user groups ***(Overhead 4)***

In an idealised co-management scenario, both government and user groups cooperate as equal partners for all management tasks and at all stages in the management process. However, in most co-management arrangements, the role of government and user groups vary. The role user groups play in the decision-making process depends on who and how they are represented. They describe two types of representation for users: functional; which is based on gear types and; territorial, which is based on geography. The role of user groups in the decision-making process will depend on their relative negotiating capabilities, knowledge and strengths vis a vis each other and with government. Some groups may feel alienated or poorly represented and decide to boycott the decision-making process. There may also be other stakeholders who have a legitimate right to be represented in the co-management process such as scientists, and those representing the public interest such as environmentalists. The type of representation is often determined by the political culture of the country and whether participatory or representative democracy is encouraged or discouraged.

Here it is important to emphasise the importance of level, and related to this, scale. Level refers to the level at which decision-making should and does take place, namely local, regional, national or supra-national. Scale refers to the fisheries resource system and the management tasks to be undertaken; if the system and/or tasks are large and

complex then decision-making at a local level may not be effective or sufficient. Some management decisions may have to be made at the national level because the problems and solutions are of a scale which cannot be dealt with at the local level. Increasing the scale implies that there will be more diverse membership and representation so that direct democracy might become difficult and there might also be greater inequalities.

Management tasks ***(Overhead 5)***

Depending on the particular institutional and organisational set-up, different management tasks may be suitable for a different forms of co-management decision-making. There are a number of management tasks which include policy formulation, resource estimation, access rights, harvesting regulations, market regulations, monitoring, control and enforcement.

For some tasks, for example policy formulation, it may be desirable to have full and equal decision-making by government and stakeholders, whilst for others, such as access rights, it might be more appropriate that this is decided by government, based on consultation with user groups. Different management tasks might be subject to different types of co-management between government and users. With regard to the type of management tasks which can be co-managed, there is a need to differentiate between decentralisation (i.e. moving responsibilities to a lower level of government) from delegation which might mean transfer of responsibilities from government to a user group organisations (national or local). Depending on the management function itself, as well as the political and social context, some management functions may be appropriate for decentralisation and others for delegation. For example, it might not be appropriate to delegate to user groups management functions which are also in the public interest. Both decentralisation and delegation requires that capabilities and aspirations exist at another level of government and within user groups to carry out these functions. In addition, governments may be reluctant to relinquish some or all of their authority for all management functions.

Stage in the Management Process ***(Overhead 6)***

Another dimension to co-management is the stage in the process at which users become involved: planning, implementation or evaluation. Under an ideal co-

management regime, user groups should be involved at all stages of the co-management process, but what actually occurs might be quite different. Management processes are established to achieve particular objectives so the cost-effectiveness of the process has to be compared to other possible processes. A centralised approach at the planning stage will tend to have lower design costs than a cooperative approach as it is likely to take less time to reach decisions. However, implementation, monitoring and enforcement of the programme might be more costly because the regime is not considered legitimate by users who have had very little say in its design. Conversely, if there is a lack of information to manage the fishery, the co-management approach might lead to lower transaction costs at the planning and implementation phase because fishermen can provide information on fishing patterns, catches and the status of the resource.

Evaluating fisheries co-management (Overhead 7)

Evaluating fisheries co-management can relate to the meeting of management objectives or its' impact on the resource and its users. Evaluation does not necessarily entail quantifying these outcomes, but assessing whether co-management has had a positive or negative effect on them. The three main types of outcomes considered most relevant for evaluating a co-management arrangement are sustainability, efficiency and equity can be defined as follows:

- Sustainability can be divided into stewardship and resilience. Stewardship is the tendency for resource users to maintain productivity and ecological characteristics of the resource. Resilience is the ability of the system to absorb and deal with changes and shocks.

- Efficiency refers to the cost-effectiveness of the arrangement, in particular whether it has reduced transactions costs or improved the net returns to the fishery.

- Equity is divided into representation, process clarity, homogenous expectations and distributive effects. Representation refers to the extent to which users and stakeholders are represented. Process clarity concerns the transparency of the management process. Homogenous expectations is the extent to which

participants have similar expectations concerning the management process and it's objectives Distributive effects concerns the extent to which the management process has led to a more or less equitable distribution of benefits.

International experiences

The international experiences of fisheries co-management are based on a review of a number of case studies on fisheries co-management in small-scale, semi-industrial and industrial fisheries in developing and developed countries in Africa, Asia, the Caribbean, Europe, North America and the Pacific.

Information on the co-management arrangement varied. Although most of the cases studies provided a general overview, there was limited information on the details of the arrangement. Based on the review some form of co-management seems always to be appropriate. However, this does not imply, that delegated self management, the informative type is more appropriate than instructive or consultative management arrangement. The proper design principles depend upon the context and conditions under which the co-management arrangement has to work.

These will often evolve gradually through a process of muddling through and institutional change will often occurs as marginal adjustments of old structures rather than radical innovations or total reorganization.

Overhead 8

The way governments decentralise or delegate management authority has an effect on the type of co-management regime in place. Although the aim of government might be cooperative co-management, this can only be achieved if users are also willing and capable of taking on shared responsibilities. Cooperative, advisory and informative co-management occurred in situations where user groups were able and willing to take up the responsibility. Unorganised or poorly represented user groups, low levels of education, lack of empowerment all hindered a more equal participation in the decision-making process. The review indicated that developing countries trying to initiate co-management may be working with communities where there is no existing organisation of user groups so that these have to be introduced. Thus the type of co-management arrangement is more likely to be instructive or consultative until user groups are organised and capable to cooperate more equally in the management

process.

Overhead 9

The type of approach influences the type and nature of the user group participation in decision-making. It is more likely that the type of co-management approach is instructional or consultative when it is top-down and advisory or informative when it is bottom-up. In some of the case studies, government has actively pursued a policy to promote co-management. In these cases the type of co-management tended to be instructive or consultative. Whilst the type of arrangement is also affected by the capabilities of users, in some of the cases the implication is that government wants to play the dominant role in the management process. Where, co-management was a "bottom-up" it emanated from well-organised user groups. This is reflected in the type of arrangement: informative.

Overhead 10

Greater user participation in co-management also occurs when governments are unwilling to deal with the political, social or economic responsibility of taking hard decisions preferring to let the user groups deal with the problems..

Overhead 11

The type of co-management arrangement to be implemented also depends on the management tasks to be undertaken. In general, although the cases studies are not explicit about management tasks, there is evidence that the more specific the tasks are (harvesting and market regulation), the lower the level decisions are taken. In these situations, it more likely that the type of co-management arrangement will be advisory or informative. Very little information was available on the policy formulation process, but there are some indications that, where it does take place, it tends to be instructive or consultative.

Overhead 12

In general, the information from the case studies indicate that co-management arrangements, whatever the type, occur during implementation and only occur to a minor extent in planning. There is no clear evidence from the case studies on user participation in evaluation. However, there are indications that the implementation process is being continually evaluated by government and user groups.

Overhead 13

The importance of boundaries in fisheries co-management has been thoroughly discussed in the literature. In general the literature indicates that the more clearly defined the boundaries, the greater the role of users in the decision-making process. However the boundaries issue is very complex as in any fishery there are many boundaries. The case studies demonstrate that many kind of boundaries are in place, physical, residence, organisational and socio-cultural, lack of land ownership and resource. Although these are the "clearer" boundaries indicated, there is often a mixture of boundaries which determine (who, where and how) the type of co-management arrangement.

Overhead 14

In most cases user groups were homogenous either functionally, territorially or socio-culturally. This contributed to group cohesion. Socio-cultural homogeneity was also important for collaboration between user groups. Conversely, where there was socio-cultural heterogeneity in multi-user group situations, co-management was more difficult with government taking a bigger role in decision-making.

Overhead 15

The political culture and social norms of the country and/or society also affect the type of co-management arrangement. Societies not familiar with political empowerment may find it difficult to participate on an equal basis with government. The political (modern and traditional) structure in the country may also exclude certain types of co-management arrangements and/or encourage others.

Overhead 16

Although many of the co-management arrangements described in the cases studies are still at an early stage of implementation, some overall observations can be made concerning anticipated outcomes. Outcomes do not refer to actual outcomes, as in most cases it is too early to assess but to the outcomes anticipated by the co-managers.

In practically all of the cases, the main rationale for introducing a co-management arrangement was the fact that the fishery was nearing overexploitation or was already overexploited. In this respect, co-management was a form of crisis management, seen as a way to impose stewardship over the fish resources. In other cases, co-management was implemented in order to prevent or resolve conflicts among user-groups or between user groups and government. With regards to conflict management,

co-management was introduced to make the management process more resilient

With regard to equity, information from the case studies was sparse. Greater representation in the co-management process was clearly a goal of the process, it was not clear how well stakeholders and users were represented. However, in all except one of the cases, it appears that users and/or stakeholders were better represented than before. It seems evident, that process clarity is great as a result of co-management. There seems to be no difference whether the decision-making arrangement is a Village Committee, a management council, a Fishing committee or has no formal structure.

Danish experiences

Danish examples indicate, that it is difficult to operate with one single co-management concept. One needs to adopt various systems of co-management to specific situations, where user-group involvement is the common feature.

A typology of fishermen's organisations based on an analysis of Danish fishermen's organisations is developed in order to examine the aspiration and capabilities in terms of resources, structure, learning and proactive strategies. We have identified four ideal types FOs.

Figure 2 Typology of Danish fishermen´s organisations (Overhead 17)

		STRUCTURAL CAPABILITIES	
		High	Low
STRATEGIC CAPABILITIES	High	TYPE 3 C Few FOs C Specialised FOs C Professional leadership	TYPE 2 C Some FOs C Small/medium FOs C Headed by younger - fishermen
	Low	TYPE 1 C Majority of FOs C Large FOs C Headed by former fishermen	TYPE 4 C Minority of FOs C Very small FOs C Headed by elder fishermen

Type 1 are typical larger FOs with administrative and financial resources. They are characterised by a heterogenous fleet structure (multi-gear and large and small scale vessels). Potential conflicts between different vessel groups are inherent in these FOs

and influence their ability to achieve consensus. These FOs have a rather passive attitude towards fisheries regulations and market dynamics.

These FOs have only vague strategic capabilities towards formulating alternative management procedures and market initiatives. Learning experience in relation to market initiatives simply does not exist, whereas knowledge on market dynamics is low. These FOs have, thus, a reactive strategy towards co-management and a significant lack of dynamic professional leadership.

Type 2 are mainly smaller FOs with scarce financial and administrative resources, although a few larger FOs are present. They have a diversified fleet structure, but are in general dominated by small and medium sized vessels. These FOs have the advantages of being small, so that local conflicts among gear groups usually can be avoided. They are typically strategic proactive towards fisheries management and/or market dynamics by having clear objectives and characterized by local entrepreneurship.

Type 3 are small and specialised FOs, organising large scale vessels using the same type of gear. They have administrative and financial resources, which give them a professional and business-oriented organisation both in terms of management and market development. They have clear objectives for their attitudes towards the aims of the fisheries regulations, where they encourage economic efficiency, as their members will benefit hereof. These FOs undertake lobbying in- and outside the formal institutions and utilize their widespread network and linkages to promote their strategies.

Type 4 are very small FOs located in marginal areas comprising small-scale, mostly inshore, fishermen. These FOs have no structural nor strategic capabilities after decades of declining activities and these are mainly of social importance for its members. A strategy can be identified towards protecting the traditional small-scale fishery as a traditional livelihood by advocating special privileges to these fishermen.

There are significant differences in the capabilities of FOs. Type 3 FOs have both the structural and strategic capabilities to aspirate for co-management arrangements and is the only type which has the essential professional and dynamic leadership, whereas type 4 FOs are not considered to have any motivation nor interest in co-management.

The analysis of Danish FOs shows that the majority of the FOs do not possess the necessary professional capabilities. They differ in size, structure, location, human and financial resources which imply that FOs adopt and pursue different goals and strategies. A few FOs currently meet professional needs while others simply do not. For the majority of FOs, there are identified common needs for professionalism, across structural disparities.

Fishermen's organisations need to have aspiration for management authority and MAF needs to have the willingness and trust to devolve management authority to user-groups. In this respect it becomes important to place emphasis on institutional resiliency in fisheries co-management. Institutions created to solve todays problems do not necessarily facilitate solutions for tomorrows difficulties; institutions need to integrate knowledge and modify performance over time.

It appears that qualitative changes in learning processes are still required in order to adjust to continually changing conditions, not only in the global market, but also in systems of political decision-making and resource estimation. FOs need to undergo a continuous process of professionalising their organisations.

If fishermen's organisations shall be capable of carrying out fisheries management tasks. **Overhead 18** Three important capabilities are required:

1) financial resources to take over responsibility for management procedures,
2) professional skills in the administrative staff to formulate and promote the strategies and
3) capabilities to manage variations in external conditions.

Within the last 20 years, most segments of the fishing industry have become highly professional businesses. Fishermen have been very efficient at keeping abreast of technological change and utilize new types of gear and electronic equipment.

Many FOs have in the same period developed into modern, interest organisations which influence political decision-making in the light of ever-increasing regulation of the industry.

The link between local FOs and the federation could be strengthened and more highly developed in the long term, although it is primarily the federation, which needs to take

the lead in the process of professionalising and changing the association. At present, the federation seems to be caught in a deadlock between upgrading the organisation to meet the need to professionalise and the lack of financial resources to upgrade organisational skills.

Although, the organisational structure has undergone changes and it seems as if there is a shift towards improved professionalism of the organisation at the policy level in order to match increasing regulation of fisheries.

However, in a future perspective it seems necessary to upgrade skills and qualifications by professionalising fishermen's organisations at the policy and marketing level. Furthermore, a range of new players is entering the arena, and policy decision-making is now undertaken through a process of negotiation and compromise. A wide range of different interest groups influence decision-making at all levels, from the initial stages through to final implementation. It is therefore very difficult to put forward simple solutions as there are so many special interests and reservations to be taken into account, dramatically increasing the complexity of decision-making.

An effective organisation needs to have the capability of performing within a "negotiation economy", and should be able to foresee legislation and regulations even before they have been initiated, in order to act in the interest of its members at both national and international levels. Besides resiliency, it requires an understanding of the rationale behind the system and experience on where and how to perform within the complexity of decision-making. This can be achieved by forming links with decision-makers, institutions and groups with specific knowledge. They could then draw on external expertise and information as to how other interest groups perform and therefore position their own organisation in a strong strategic position. Furthermore, it requires highly-skilled staff with the capability to communicate in an international environment of decision-making and an ability to translate knowledge into specific and timed arguments which will be respected in the relevant arenas.

Co-management is seen as a tool to handle changes in the fishing industry environment. However, this requires internal adjustment within the fishermen's organisations and challenges their traditional role. The implication hereof for the fishermen's organisations is an increased demand for the ability to enter new learning process and the capability to translate this knowledge into specific, relevant activities and timed arguments.

As illustrated in the typology discrepancies between FOs foster divergent abilities for catching-up new knowledge. A minority of FOs exerts a proactive strategy in order to adjust the functions to match changes in the political and economic environment. However, the majority of the FOs lacks the necessary capabilities and applies a reactive strategy towards change.

In general, organisational restructuring seems necessary in order to create organisations which promote positive incentives for interactive learning. Negative incentives currently dominate the federation inherited in the present power-structure within the federation and the traditional functions carried out by the established leadership. Learning-by-doing in a former period with less regulation and a more stable market has created organisational capabilities, which are different from those required today to participate in a market-oriented fisheries co-management system. Potentials for creating positive incentives for learning to meet future requirements are present in the younger generation of both fishermen and the administrative staff. Though, it presupposes organisational change and formal training to sustain this process and thereby attain the necessary structural and strategic capabilities to perform proactively.

Thanks for your attention