# Common Pool Resources and Fisheries Management (2)

Key Sheet Series:
The purpose of these Key Sheets (Nos 1-4) is to ensure the effective dissemination of the findings of a research project funded under the DFID Fisheries Management Science Programme (FMSP) entitled 'Incorporating Common Pool Resource (CPR) Issues into Fisheries Management in Developing Countries: Key Lessons and Best Practice' (No. R8467). The main target audience are policy-makers and their advisers throughout the world with a responsibility for CPR management, especially fisheries.

DFID/FMSP Study on CPR Issues:
During 2005, IDDRA undertook this project (No. R8467) synthesising the results of 18 fisheries research projects undertaken in developing countries under the DFID Fisheries Management Science Programme (FMSP) (1992-2004) managed by MRAG Ltd. Further detailed information is available from these websites: (www.fmsp.org.uk/FTRs.htm) (www.onefish.org.id/281354)
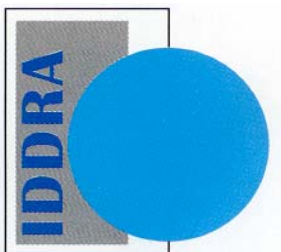
FACTORS WHICH AFFECT CPR MANAGEMENT PERFORMANCE IN DEVELOPING COUNTRIES: KEY LESSONS

Overview

The sustainable exploitation of Common Pool Resources (CPR) requires careful management, and the experience of the past 50 years in particular has shown that the design and implementation of effective CPR management systems can be a major challenge. In the specific case of fisheries, there is a widespread perception that fisheries management has been characterised more by 'failure' than by 'success', and as a result CPR (fisheries) throughout the world are both overexploited and degraded, with a loss of benefits to society. But is this true everywhere? And what is our general understanding of the requirements for effective CPR (fisheries) management?

In this second Key Sheet, the factors which affect CPR (fisheries) management performance will be considered, based on the findings of the FMSP. The focus is on fisheries in developing countries, and the following key issues were identified:

Key Issues
1. The *Importance* of Fisheries Management

Fish as natural capital for development: Fish stocks (both inland and marine) are a form of natural capital which represent a potential source of sustainable wealth for developing countries. The wealth from fisheries can be exploited as both direct benefits (for example, fish production, employment in fisheries, and fish as food) and indirect benefits (generation of economic surpluses; extraction and re-investment in the economy). Both approaches to fisheries exploitation require careful management (Box 1) in order to achieve a sustainable flow of benefits over time.

> **Box 1. Fisheries management defined (FAO, 1997)**
> The integrated process of information-gathering, analysis, planning, consultation decision-making, allocation of resources and formulation and implementation, with enforcement as necessary, of regulations or rules which govern fisheries activities in order to ensure the continued productivity of the resources and accomplishment of other fisheries objectives.

Overexploitation problems: Theoretical and empirical work has shown that an unmanaged fishery will almost certainly become overexploited (both biologically and economically). However, it is also understood that success in fisheries management is difficult to achieve. In addition, the conventional approach to fisheries management - which has emphasised fish stock management, fishing effort regulation and production maximisation - has been a partial approach to the challenges and opportunities represented by fisheries. For example, there has

The fishing harbour in Chennai, India showing that in many countries, fisheries management must cope with a diverse and large group of actors, different patterns of activity and levels of technology. Source: G. Bizzarri (1996), courtesy of FAO Media Archive.

been a tendency to ignore non-biological issues such as the management of resource rent (with severe implications for wealth generation and usage).

Learning from experience: Without doubt, the current status of the world's fish stocks[1] can be attributed to the weak performance of fisheries management over the past 50 years. At the same time, there are examples of 'successful' fisheries management [Box 2]. It is imperative to understand and learn from these different outcomes, and to use this as a basis for fisheries management in the future.

2. New *Knowledge* on Fisheries Management Performance

Broadening fisheries information and knowledge: Over the past 11 years, the work of the FMSP has generated new information and knowledge on the nature and operation of fisheries management systems in a wide range of developing countries. This complements and adds to a burgeoning international literature on fisheries exploitation and management. The expansion in fisheries knowledge has been characterised by an increase in multi-disciplinary work and the use of holistic frameworks to examine the complexity and dynamics of the fishery system [2]. By focusing on key relationships such as those between fisheries management systems, fisheries policy, government and governance [3] this work has helped to broaden our understanding of CPR (fisheries) and the possibilities for management.

Fisheries systems concept: The **governance** context influences the relationships different actors in society and the characteristics of the **government** of a particular country. In turn, the **policy and policy processes** of government will affect the structure and operation of different sectors within the jurisdiction of the state. In the case of a CPR sector such as fisheries, policies will impact upon the relationship between the resource (fish stocks) and the country's people (both fishers and non-fishers), usually through the operation of specific **fisheries management systems**. A successful fisheries management system would be expected to generate a sustainable flow of benefits for the people of its country in order to make a significant contribution to their welfare.

Determinants of success: But what determines a successful fisheries management system? Recent theoretical and empirical research has concluded that "there is *not* one single element that is responsible for success in fisheries management" [Cunningham and Bostock, 2005]. The analysis of fisheries management performance in developing countries is relatively new and the findings of the FMSP projects contribute to this growing body of knowledge. In particular, it is possible to identify five factors or processes which affect fisheries management performance, as follows:

(i) Information, knowledge management and decision-making capacity:
• an effective fisheries policy process and management system needs to be underpinned by an appropriate flow of relevant and timely information used in a responsible and transparent manner; as a <u>core function</u>, information should be generated to make effective decisions on the use of limited financial and personnel resources with the goal of optimising benefits from fisheries resources for society;
• the increasing use of broad conceptualisations and designs for fisheries management systems requires <u>multi-disciplinary information</u> and knowledge covering both natural and social sciences [Box 3];

Fishing for tuna in Cape Verde – in many countries in the past small-scale operators have not had the opportunity to contribute to fisheries policy design. Source: M. Marzot (1992), courtesy of FAO Media Archive.

- fisheries management authorities usually face severe financial and personnel constraints to acquiring and utilising information and knowledge; fisheries policy-makers and managers have to use the best available knowledge as a basis for decision-making; information systems have to be pertinent to needs, cost -effective, pragmatic and innovative;

(ii) Stakeholder participation in the policy process and fisheries management:
- there are often a wide diversity of stakeholders in any fishery (e.g. fishers, traders, gear supplies, consumers, government and external advisers and experts); the relationships which exist between them will influence the nature and operation of the fisheries policy process and fisheries management systems [Box 4];
- some stakeholders will have a greater influence over the policy process and management system than others, depending upon the governance context; and have greater access to the benefits generated ;
- the extent to which different government agencies and their policies involved in fisheries are coherent with one another will also impact on fisheries management performance;

(iii) Property rights, responsibilities and incentives:
- under open access regimes, where there are no property rights, fisheries will tend to become overexploited both biologically and economically; alternatively, property rights may be vested in the state or a group of states as public property, in a group of individuals or a community as a common property, or in individuals or companies as private property rights; property rights are an essential basis for fisheries management;
- a 'right' refers to the capacity to assert a claim and have others respect it; a right is more easily enforced if it is clearly defined, cost-effective to defend and backed-up by an effective legal framework [Box 5];
- rights should provide the correct incentives for stakeholders, in particular to avoid the 'race to fish', and instead to aim for a sustainable stream of benefits from fisheries into the future;

(iv) Institutions and organisational development:
- the performance of a fisheries management system will be affected by the institutional context, or in other words, the framework of rules which govern relationships between stakeholders, and between stakeholders and CPR such as fish stocks (e.g. rules over fishing access) [Box 6];
- the process of institutional development and change is often a long and gradual process of persuasion and consensus-building guided by effective leadership; and requiring the participation of a majority of stakeholders;
- within the institutional context, organization(s) will be established to form the fisheries management authority, with responsibilities for fisheries policy formulation and implementation (decision-making, regulation, enforcement); the development of a 'nested' organisational arrangement can be effective to proving a framework for co-management between government and civil society stakeholders, and for covering a range of levels of government and geography (see Key Sheet No. 3);

(v) Political will and change:
- the operation of the fisheries policy process, leading to the implementation of specific fisheries management systems is affected by the governance context and political reality (the way in which power and influence of different stakeholders are exercised) [Box 7];

Box 6. Conflict and the need for institutional change: Ghana

In Ghana, coastal fisheries are an important source of employment, food and livelihoods. Fish from the canoe fishery moves throughout informal trade routes regionally. Under a traditional management system (TMS), access to the fisheries are controlled by local Chiefs or Chief Fishermen (CF), although under State Law the waters are open access *de facto*. In the past 10 years, fisheries have become overfished, and conflict between fishers (and with industrial fleet) has increased. In an attempt to bolster the role of the TMS/CF, new policy and laws recognise the role of Community-based Fisheries Management Committees. However, regulatory powers are limited, and conflict will continue to signal the need for further institutional changes as a basis for effective fisheries management. [FMSP Project no. R. 7334]

Box 7. Political reality of resource exploitation and sectoral competition: Cambodia

In Cambodia, 90% of the population live in rural areas; 40% of the population are below poverty line and fisheries and other CPR are important for livelihoods. Major concessions (fishing lots) are granted each year to powerful people; small-scale operators fish elsewhere in open access fisheries. The government has attempted to release fishing lots to communities under a Community-based Fisheries Management Programme but without effective regulation overexploitation continues under open access conditions. Fisheries are also threatened by emphasis on rice development, flood control and hydro-electric dam schemes in Mekong Basin which could alter flood regime. Plans might be challenged with increased information on the value and importance of fisheries and aquatic resources, but this is not available. [FMSP Project No. R8118]

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- In order to improve fisheries management performance, there needs to be political will to change institutions and organizations in order to modify the way in which different stakeholders interact within the sector, and also the relationship between this sector and other sectors as part of coherent national policies on major themes such as economic and social development;

- in fundamental terms, the improvement of the fisheries policy process and fisheries management performance will depend on the creation by government of an enabling environment for appropriate change.

3. The *Future Challenges* for Fisheries Management

Fisheries are clearly important for many millions of people throughout the world. However, the weak performance of many fisheries management systems gives great cause for concern. Research programmes such as the FMSP have contributed new knowledge and understanding of the factors which determine this as shown above using the perspective provided by CPR issues. In order to capitalise upon these findings, there are at least three future challenges which will have to be addressed, as follows:

(i) How to use the CPR research findings to contribute to the further development of new approaches for fisheries exploitation and management?

(ii) How to ensure that the new approaches can be effectively operationalised?

(iii) How to ensure that new approaches to fisheries management are accepted by fisheries management authorities?

In Key Sheet No. 3 of this series, some new approaches to fisheries management will be explored based on the empirical work of the FMSP. These new approaches aim to improve fisheries management performance in the future based on past lessons.

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Footnotes

[1] In 2003, 52% of fish stocks were fully exploited, while 16% were overexploited, 7% depleted and 1% recovering from depletion. Only 25% of the stocks monitored were under or moderately exploited. From 1974-2003, there was an increasing trend in the proportion of overexploited and depleted stocks (from 10% to 25%) (FAO, 2004).

[2] The concept of the 'fishery system' has progressed from a simple fisheries science-based approach [management focusing on the relationship between a fish stock and fishing effort] to a more sophisticated and all-embracing systems approach [the harvesting sub-sector and the management authority are located within a much larger system comprising the physical bio-sphere and the social sphere]. For further information see Catanzano and Mesnil (1995) and Charles (1995).

[3] A "fisheries management system" is the institutional structure and administrative routines required to undertake fisheries management [Box 1]; "policy" is the set of objectives and courses of action, adopted by those with responsibility for a given policy area and expressed as formal statements or positions. Policies are tied to the policy process; "Governance" is the array of processes whereby elements in society (government and non-government) wield power and authority, and influence and enact policies and decisions concerning public life, and economic and social development (www.onefish.org/id/213558)