12. Key concepts I: Fisheries management systems and governance

Overview

The debate regarding fisheries governance and its relationship to fisheries management systems centres on an understanding of these two key concepts. They are widely used terms but are not easy to properly define and to quantify. These terms are sometimes used interchangeably, indicative of this lack of definition.

Key issues

GOVERNANCE

The World Bank has defined governance as:

‘the manner in which power is exercised in the management of a country’s economic and social resources’ (1).

The power exercised in relation to the management of fisheries is generally broader than that exercised by a fisheries management authority through a set of management arrangements which it has put in place. While governments exercise considerable power over the management of fisheries, it is not, however, the preserve of government to have power or influence.

In a very practical way, power over the management of a fishery resource may be exercised, for example, by a fishing community, or a group of wealthy business people, a trade union, or an association of fish processors. The power exercised might even be illegal (e.g. through bribery), but nevertheless a real component of what, in effect, governs the management of fisheries resources. It is necessary to recognise the reality of existing power and influence if effective fisheries management is to be achieved. Institutional arrangements might need to change to accommodate the participation of stakeholders in their legitimate exercise of power, while undue power exercised by others might need to be curbed before management becomes effective in achieving its objectives.

A definition of governance from the Governance Working Group of the International Institute of Administrative Sciences (1996) captures some of these elements more explicitly:

‘Governance refers to the whole 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’ (2).

The governance literature emphasises the need for all societal institutions to be involved in governance activities, and for all relevant societal and institutional levels and inter-relations between them to be taken into account.

This understanding of the broad implications of fisheries governance is reflected in a shift in...
perspectives regarding the nature of fisheries management expressed in the international fisheries literature. The limitations of the conventional fisheries science-based conceptualisation of the fishery have been recognised, as have the management systems based upon it, with its emphasis on government top-down command and control mechanisms. These are giving way to approaches that take account of multi-disciplinary and systems-based conceptualisations of the fishery. These approaches focus on the nature of the interaction between government and fishery stakeholders, in terms of institutional development and the wider political, economic, and environmental context.

FISHERIES MANAGEMENT SYSTEMS

A fisheries management system may be defined as the institutional structure and administrative routines intended:

- to generate the information needed to make effective decisions on the use of limited financial and personnel resources with the purpose of optimising benefits from fisheries resources for society, and
- to make those decisions, and
- to implement them and assess their efficacy.

Three basic levels of conceptualisation of fishery systems are used in fisheries management.

At the first level, the prevailing fisheries science paradigm conceptualises a fish stock (the resource), which is affected by fishing activity (fishing effort). Management focus is on the harvesting sub-sector and, more specifically, on each of the particular fish stocks being targeted. Management focus on fishing effort arises from an assessment of the state of the stocks. Information is gathered by management on the fish stocks and fishing effort and is used as the basis for decision-making.

The focus of management is conceived as controlling fishing effort in order to achieve a particular catch and stock level. There is a range of biological (e.g. Schaefer, 1954), bio-economic (e.g. Hannesson, 1992) and bio-socio-economic (e.g. Panayotou, 1982) models associated with this paradigm. These share many common assumptions and features. In particular, the focus of management is the resource, the issues (problems and solutions) are considered at the level of each fishery, and many of the main assumptions are derived from the 'tragedy of the commons' paradigm.

At a second level, the human sciences approach to the conceptualisation of a fishery system has three basic components within the harvesting sub-sector – the resource (fish stock), activity (fishing effort) and the actors (fishers). This approach emphasises that the management of fisheries is primarily a problem about the behaviour of people, not about the behaviour of fish (as in the case of the fisheries science paradigm above). The actor (fisher) is the prime focus of management, and various attempts have been made to explore, explain and predict actor behaviour through

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Conceptualisation of fisheries systems references:

economics (e.g. Cunningham, Dunn and Whitmarsh, 1985), social and political economy (e.g. Jentoft, McCay and Wilson, 1998), institutional economics (e.g. Wilson and Lent, 1994) and cultural economics (e.g. Acheson, 1981).

At a third level, the fisheries systems approach sets the harvesting sub-system (actor-activity-actor) and the management authority within a much larger total system, comprising two major spheres – the physical bio-sphere and the social sphere. The behaviour of fish stocks is embedded in a much wider system of interactions in the bio-physical sphere. Fishing effort, through the behaviour of fishers, is embedded in a much wider system of interaction within the social sphere. This type of systems approach for fisheries has been explored by Catanzano and Mesnil (1995), Charles (1995) and Pido et al (1996).

Three issues of importance emerge from this exposition of the different approaches to the conceptualisation of fisheries systems and consequently for the fishery management systems based on them. First, the conceptualisation of fisheries systems has progressed from a simple fisheries science-based approach to the more sophisticated and all-embracing systems approach. Second, the limitations of the fisheries science approach to provide adequate fisheries management advice are now better understood. Third, the possibilities for developing appropriate fisheries management systems based upon multi-disciplinary approaches, which reflect the complexity and dynamics of the system, have been widely recognised.

IMPLICATIONS FOR KNOWLEDGE REQUIRED AND INSTITUTIONS

Fishery systems are complex, and the management systems needed to optimise the benefits accruing from fisheries require institutions and knowledge systems able to cope with the multi-disciplinary requirements of the fisheries management function. The discussion above suggests that fisheries managers need to have available to them more knowledge, over a wider range of disciplines in order to make properly informed decisions.

There is an indisputable need to build the capacity of fisheries institutions to identify, generate, deliver and utilise knowledge relevant to fisheries management. However, the level of complexity of the knowledge required is daunting and some is very expensive to obtain. This immediately raises the question as to how these knowledge needs can be met under conditions where many fisheries management authorities do not have the financial and personnel resources to meet a more limited spectrum of knowledge requirements.

The best available knowledge should remain the basis upon which decision-making in policy formulation and monitoring takes place. Knowledge should be within the realm of what is realistic and attainable. A useful aspect of the systems approach to understanding how a fishery works, is that it encourages broader and more realistic analysis of the fishery. However, decisions should not be delayed pending the availability of knowledge that goes well beyond the capacity of the expertise and finances available. The need for fisheries managers to make decisions on the basis of imperfect, though best available knowledge is closely associated with the application of the precautionary principle. The ability to define the dimensions or limits of relevant knowledge, and to succinctly present and cost-effectively produce this knowledge to inform decisions, is a skill that managers and researchers need to be encouraged to develop. Innovative ways of efficiently sharing relevant knowledge could also considerably enhance fisheries management performance.

Key literature


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