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The Governance Perspective

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Background

Capture fisheries are in crisis. Documents and figures on the state of global fisheries that have appeared since the 1990s point out a strongly negative trend, with three related components. The first is the decline or collapse of fish stocks, the world over. The degradation of aquatic ecosystems is reflected in the levelling off of the total world catch in the 1990s (FAO 2002a), and in the declining catches of individual fishers. The second component of crisis is fishing overcapacity. There are simply too many vessels and too many people fishing. Their aggregate activity is the main cause of the collapse of fish stocks. The third aspect of crisis relates to management. Despite signals that things were going terribly wrong, fisheries managers have been unable to reverse the trend. Thus, the foundations of fisheries management theory and practice have been called into question.

New economic players have been quick to fill in the gap. As cod stocks in the North Atlantic during 2002 reached deleterious levels, and the European Commission suggested a total ban on cod fishing, the first cod farms opened up in the Norwegian fjords. Scientists and policymakers often view aquaculture as a solution to problems faced by capture fisheries. Figures would seem to confirm their points of view: as capture fisheries went into decline, global aquaculture entered a period of strong growth, meeting an ever-increasing proportion of the demand for fish.

Capture fisheries and aquaculture would thus seem to reflect different conditions of crisis and opportunity. Whether the situation is as black-and-white as this would suggest – and indeed we believe it is not – the comparison highlights societal phenomena that play an important part in this book. Crises and opportunities occur, in differing mixes, in all sectors and societies, and at all times. Their governance is therefore a matter of great concern.

Food security is another matter demanding attention. Five decades of development effort have not significantly impacted the incidence of poverty, particularly, but not exclusively, in the South. According to the World Bank (2001), a fifth of the world's population lives on less than US$1 a day. They constitute the world's poor. One of the multiple deprivations they suffer is a lack of food security. Fisheries and aquaculture have often been singled out as making a meaningful contribution to the alleviation of hunger and malnutrition. Fish and other aquatic produce are highly nutritious

and often affordable to low-income households. This applies to coastal and landlocked states.

The aim of the fisheries governance network (FISHGOVFOOD), of which this volume is a result, was to develop and to share a new, interactive perspective on the governance of fisheries and aquaculture. The reason for the initiative was that we, the participants, believe that the crisis that is currently affecting the sector cannot be resolved by conventional methods. There is a need for creative thinking, which means crossing boundaries between disciplinary understandings and routine approaches. This implies a shift from a problem-solving approach to one that emphasises opportunity-creation and the effective handling of tensions.

Two general assumptions underlie policymaking. One is that governments, researchers or user groups possess, or can develop, sufficient knowledge on their own to form the basis for policy. The second assumption is that the world in which we live can be represented in simple models. We find both assumptions untenable. Academics, policymakers and users have to interact 'to get the picture right'. In addition, they have to put the diversity, complexity and dynamics of governance issues right on the table.

Four bodies of literature have informed our views. Governance literature considers problem solving and opportunity-creation as a joint and interactive responsibility of all parties – state, market and civil society (Kooiman 2003). According to this perception, public responsibilities are handled with an eye for private needs and capabilities, while private tasks are fulfilled with a concern for public needs and capabilities. The literature on food security is our second source. It emphasises access to food as a moral and a practical issue, and concentrates on the situation of the poor in developing countries. It is concerned with questions of food quality and safety as well as quantity (Kurien 2004). Third, socio-economic literature highlights the intricacy and interconnectedness of capture, processing and marketing activities, and the role of institutions in regulating the usage of natural resources (cf. Schlager and Ostrom 1993; Platteau and Baland 1998; Hersoug, Jentoft and Degnbol 2004). Finally, the aquatic life sciences highlight that well-functioning ecosystems underlie the capture and culture of seafood, and hence that durable fisheries and aquaculture depend upon their conservation (Abramovitz 1996; Boyd 1999a; Pauly and Maclean 2003). Without the ecosystems that produce them, there are no fish. Without social and economic circumstances that support the people who catch and farm fish, there are no fisheries and aquaculture.

Besides drawing on different literature sources, we use various scientific methods – deductive reasoning, empirical observation and interactive learning. The latter includes a step-by-step focused dialogue between academics from different disciplinary backgrounds and professionals in fisheries and aquaculture. We believe that the process of knowledge development proceeds in stages, and rests on elements such as professional self-reflection, peer review, dialogue and integration.

Any new approach to fisheries needs to be cognisant of, and adaptive to, the characteristics of its particular field. In the following section, we high-

light two important features of fisheries. The first is a time trend toward greater diversity, complexity and dynamics. The second is scale. Both have important consequences for our case for bringing governance into fisheries.

Diversity, Complexity, Dynamics, and Scale

The globalised fisheries are highly *diverse*.

> Diversity is a characteristic of the entities that form fisheries systems and it points to the nature and degree in which they vary.

Catalogues of fishing technology point out that fishers and fish farmers exercise their professions in widely divergent ways. They hunt or farm different fish, using varying methods and techniques, resources and bodies of knowledge. Their understandings of, and meanings attributed to, fishing and farming differ from one location to another (see chap. 4). Globalisation, a process that has intensified over many centuries and recently accelerated, has tended to further the existing division of labour, creating a rich plethora of specialised niches and activities (see chap. 2).

Globalisation has also affected the *complexity* of fisheries and aquaculture the world over by lengthening the chains of interaction.

> Complexity is a function of the architecture of the relations among the parts of a system, and between a system and its environment. Interactions are exchanges that take place in a context of interdependency, and also affect the partners involved. One speaks of lengthening chains of interaction when more actors become involved, and/or when the geographical distance between them extends.

Thorpe and Bennett (2001) distinguish three forms of globalisation in capture fisheries: the globalisation of production, trade, and regulation. The globalisation of production refers to extensions in the range of fishing operations, and the globalisation of trade has connected more fishers to larger markets. The globalisation of regulatory control has resulted in a burgeoning body of rules and guidelines affecting the fisheries at all governing levels creating complicated, and often confusing, regulatory patterns. All three forms of globalisation contribute in different ways to the complexity of fisheries and their governance.

Diversity and complexity are reinforced by *dynamics*.

> Dynamics apply to the tensions within a system and between systems. They are associated with the incidence of, or propensity towards, change.

The dynamics affecting fisheries derive from various sources, affecting disparate moments in the fish chain. The origin of change may be the aquatic

ecosystem, the market, the wider social, cultural and political environment, or the regulatory regime. We argue that dynamics are increasing because of the vigour of modern society, in combination with a lengthening of the chains of interaction. When chains extend and include more actors, changes in any one aspect have a broad series of consequences.

Up to now we have discussed diversity, complexity and dynamics as societal phenomena, traversing the realms of the economic, the social, the political, and the regulatory. In recent years the same characteristics are, however, recognised as applying to ecosystems, and imposing limits on human control (see chap. 3).

We have argued above that globalisation and the lengthening of interaction chains have increased diversity, complexity and dynamics in fisheries and aquaculture. This is our first main premise. We also recognise *scale* of phenomena, events and structures, as their other major characteristic.

> Scale refers to time and space dimensions of systems to be governed as well as to governing systems.

The concept of scale is easily illustrated. Some fish species, and some kinds of aquatic ecosystems, have a geographically limited range, whereas others traverse the globe. The same holds true for types of fisheries and fish farming and for types of markets for aquatic produce. Spatial scale plays a role on all these fronts, as well as in any attempt at governance. Time scales play a role in ecology (e.g., the life cycle of a fish species, or the time needed to destroy or rebuild an ecosystem), as well as in capturing, trade, and societal processes in general. They also include the time perspective of human actors involved – the periods over which they assess, judge, plan, and expect things to happen. In governance, time scales are important.

This still sounds quite neat and tidy. In real life, the contrary is actually the case. If all governance efforts, at various scale levels, were to be diagrammed, the resulting picture would resemble a large, tangled and constantly changing spider's web. For ordinary citizens, the web in which they are entangled is sometimes very confusing, and even frightening. Next to diversity, complexity and dynamics, scale becomes a major factor in governance, the subject of the next section.

Governance Approaches

Governance has become a catchword in the social sciences as well as in the policy world. The term was in use even before it became widely known at the beginning of the 1990s, when the World Bank introduced the norm of 'good governance' to international development. Concurrently, it became a focal concept in more scholarly literature stressing the importance of other actors besides the state in governing at the local, the national, and the international level.

As is the case with other terms that have become part of the popular vocabulary, the term 'governance' has different meanings for different people. In many cases, these differences revolve around the perceived role of the state. Governments have often failed to live up to expectations. This has resulted in analyses of weak, unstable, collapsing or failed states. Unable to rely on the state to carry out governing tasks, other actors move forward into prominent positions. Some authors thus argue for a minimal or limited state, as expressed in the often-quoted phrase 'less government and more governance'. Others view governance as 'self-organising networks', whereas in the field of international relations authors speak of 'global governance'.

'Good governance' and 'global governance' are relevant branches of enquiry for those interested in the governance of natural resources. Good governance is a concept closely connected with the World Bank's efforts to couch political renewal in terms of increasing political legitimacy as a precondition for sustainable development (World Bank 1989). Although the term good governance has been broadly applied and has become a major issue in developmental literature and practice, the Bank itself now seems to have narrowed down its original ideas on the subject. In a recent report on governance of fisheries the concept refers mainly to – in the opinion of the Bank – good practices (World Bank 2004). The rise of the concept of global governance in international relations followed from dissatisfaction with theories that limited themselves mainly to relations between states. Governance theory opened up this field to non-state actors. In this usage of governance, it becomes clear that private actors (market parties and non-governmental-organisations (NGOs) often play a much more important informal role than states, nationally and internationally.

For all their variations, however, governance perspectives have three common features. The first is the conviction that 'governing' is a matter of public as well as private actors. Traditionally, governance is viewed as the task of government – it is government, at various levels, that enjoys responsibility for the public good. Indeed, governments are equipped with laws and procedures, money, and staff – in short, with power – to undertake many kinds of action in the public realm. Governments, however, are not the only actors capable of addressing societal problems and opportunities. The range is myriad: individuals, voluntary associations, companies, NGOs, village councils, international organisations, political parties, and militant groups in a variety of roles and circumstances are engaged in shaping societal futures. Just as in a game of football, the interactions among players determine what actually happens, whether it is a goal, a fierce competition, or a boring match.

Second, governance approaches emphasise that the dividing lines between public and private sectors are blurred, and that interests cannot be assumed to be either public or private, but are frequently shared. In this connection, it is generally more appropriate to speak of shifting, rather than shrinking, roles of government. A reshuffling of government tasks and a greater awareness of the role of other societal actors does not render

government obsolete. It implies a growing awareness, not only of the limitations of the command-and-control form of governing, but also of the fact that many societal problems and opportunities require the commitments of a broader set of actors and approaches.

This brings us to a third common element, namely, the realisation that governance has a basis in societal developments, and constitutes a reflection thereof. The state of contemporary governance reflects in particular the growth of social, economic and political interdependencies, and trends such as differentiation, integration, globalisation and localisation. These processes result in lengthening chains of interaction, stretching across different scale levels and sectors. In addition to other effects, the lengthening of chains increases the numbers of parties participating in them, while interactions among these parties also multiply.

Governance approaches also suggest that there are important differences between management, policymaking and governance. These differences are not straightforward and unequivocal, and may vary with culture and language. Thus what is termed 'policy' in Anglo-Saxon political culture may be termed *'gouvernance'* in the Francophone tradition; American authors, on the other hand, may label the same phenomenon as 'management'. In this volume, we take the view that governance is the more inclusive term, followed by policy, and finally by management. In comparison with managers and policymakers, governors take a step back, and broaden the view in various ways. Governance thus goes beyond the problems at hand to consider longer-term societal trends and needs. In addition, it does not limit itself to one particular sector, such as fisheries, but considers sectoral issues as a reflection of more widely prevalent circumstances.

Governance is not considered here to be the natural prerogative of government or of fisheries managers, but rather a widely practiced activity and a broad responsibility. Governance transcends a problem-and-solution focus and brings an interest for the creation and exploitation of opportunities. It balances a concern for troubles and quandaries with an eye for fresh and promising chances. Governance pays systematic attention to institutional arrangements for governing activities and to the normative principles guiding them.

Finally, an important distinction to be made in discussing governance is that between an analytical and a normative perspective. Governance is both what is and what should be, reality as well as potential. It is in both senses that we use the concept in this volume, with the normative aspect surfacing most strongly in the latter part. In the first part, we are primarily interested in governing as a real-life phenomenon. After all, problems and opportunities emerge all the time, and are tackled, more or less successfully, by people and by institutions.

All of the above indicate that the governing system, the framework of actors engaged in governing, is often as diverse, complex, and dynamic as is the system-to-be-governed. There is no reason to assume that fisheries and aquaculture are exceptions.

Our Governance Perspective

We use the following definition of governance:

> *Governance is the whole of public as well as private interactions taken to solve societal problems and create societal opportunities. It includes the formulation and application of principles guiding those interactions and care for institutions that enable them.*

The most important element of the above definition is the term *interactions*, which stands at the heart of the proposed new interactive governance perspective. For the moment it is sufficient to understand an interaction as a specific form of action, undertaken by actors in order to remove obstacles and tread new pathways. The definition of what constitutes a 'problem' or 'opportunity' depends on the issue and the position and understanding of the viewer in question. The adjective *'societal'* is best understood by way of its opposite, *'private'*, and is often replaced by the word *'public'*. 'Societal' is everything that has a common, social, and collective component. The definition refers also to the importance of *institutions* in governance. Institutions offer structure, order and predictability in human relations such that social actors would know how to interact, what is expected of them, and what they can expect from others. Thus caring for institutions is a part of governance. The same applies to *principles*. Without basic principles, no human relation or governing interaction can last. When governors try to solve problems or create opportunities, they inevitably bring to surface fundamental assumptions, world-views and ethical values for discussion and examination.

In our view, governance is made up of various components. Fig. 1.1 presents a schematic overview.

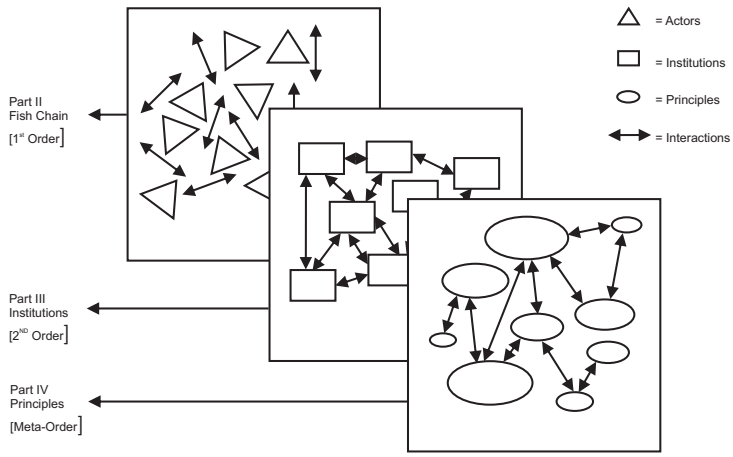

Fig. 1.1 The governance scheme.

In the following section, we discuss the various components one by one, starting with 'interaction'.

Governance as Interaction

The governance concept proposed in this volume has its basis in the social sciences. Its proponents recognise that society is made up of a large number of *actors*, who are constrained or enabled in their actions by *structures*. Actors, in this perspective, are any social unit possessing agency or power of action. These include individuals, but also households, associations, leaders, firms, departments, and international organisations. Structure, on the other hand, refers to the frameworks within which actors operate, and which they take into account. These include culture, law, agreements, material and technical possibilities, and the many other dimensions of that which we inherit from our birth, and which constitutes the world we live in. According to sociological reason, actors are continuously making changes to structure while at the same time being subjected to its influence.

It is a truism to note that actors in society interact. People communicate with each other in a large variety of settings, join up or compete, feel included or excluded, and deliver and demand services to and from one another. In the course of these interactions they often change their minds, adapt their strategies, and take or withdraw from responsibilities. The innumerable interactions that occur determine, in their totality, the courses that societies take. Interactions among actors are partly based on social interdependencies. In contemporary societies with a highly developed division of labour and which operate at a multitude of scales, and people rely on one another to a great extent. No single actor, public or private, has the knowledge and information required to solve complex, dynamic, and diversified problems; no actor has an overview sufficient to make the needed instruments effective; no single actor has sufficient action potential to dominate unilaterally.

Interaction is central in our governance approach. It is an essential part of the system-to-be-governed as well as of the governing system. An interaction is a mutually influencing relation between two or more actors, possessing an intentional and a structural dimension. The actors involved aim for a certain result; at the same time, the interactions in which they engage are constrained by what we established above as structures. It is important to note that interactions have intended as well as unintended consequences. The latter result from tensions between the goals, interests and purposes of actors, as well as between actors and their structural environment.

Governance, from this point of view, emanates from many sources, as a large number of actors strive to address the issues that emerge along their path. As society does not pause, and is never in equilibrium, the totality of these governance efforts is like a multiplicity of hands moulding the clay on

a potter's wheel. Some hands have an advantage over others, but never such that they completely determine the shape of the pot being created. Moreover, unlike a potter's clay, the actors being governed react to the hands moulding them. Governance therefore is not merely something governors do, but a quality of the totality of the interactions between those governing and those governed – it is itself an interaction.

It has been noted that many actors, in different positions and levels of society, are involved in governance. This is a statement of fact. But there is also a normative side to it, an understanding that participation in governance is an expression of democracy and therefore a desirable state of affairs. From the normative point of view the goal is to maximise participation and to structure it according to democratic principles. In this volume we are advocating the necessity of broad participation in governance from a normative and from a practical standpoint. The latter follows from the realisation, discussed in a previous section, that societies all over the globe are becoming more and more diverse, complex, and dynamic. Under these circumstances, governance is effective only when the approach is well-structured, open, and flexible.

Orders

The second aspect of our theoretical framework relates to orders of governance. The issue here is not one of geographical or temporal scale, but levels or rings, as in the construction of an onion. We distinguish three concentric circles: first-order, second-order, and meta-governance.

The outer ring deals with day-to-day affairs, and is termed *first-order governing*. First-order governing takes place wherever people, and their organisations, interact in order to solve societal problems and create new opportunities. In the context of this volume, first-order governing means solving the constant stream of problems which surface in the fish chain – problems of supply, price, market, employment, work satisfaction, etc. First-order governing is the nitty-gritty of governance activity. In diverse, complex and dynamic societies first-order governing faces special challenges. It starts with the identification of problems. After all, problems are not an objective reality, they become such only in the minds of societal actors. The first step in the governance process is therefore the localisation and formulation of societal problems, whereby the latter are distinguished from private problems by their scale and shared nature. Once problems, and problem systems, have been identified, attention shifts to the solution space. It is important throughout the analysis to retain the diversity, complexity, and dynamics of situations, as only then will images remain close to reality.

In the preceding paragraph, the term 'opportunity' may be substituted for 'problem', as the processes of identification and response are basically the same. Risk is an important issue in the handling of problems and opportunities. What are the risks involved in a certain course of action, to whom do they pertain, and what level of risk is actually termed acceptable?

This topic has come to the forefront in fisheries science with the ecosystem approach and the precautionary principle.

Second-order governing focuses on the institutional arrangements within which first-order governing takes place. Here we use the term 'institution' to denote the systems of agreements, rules, rights, laws, norms, beliefs, roles, procedures and organisations that are applied by first-order governors to make decisions. Institutions provide the framework within which first-order governance takes place, and constitute the meeting ground of those being governed and those governing. They provide the criteria against which success and failure are measured. Second-order governing implies the reconsideration and adaptation of the parameters of first-order governance. It includes, for example, creating new quality standards, labour laws, and rules on limiting bycatch.

Third-order, or *meta-governance*, takes us to the centre of the onion that feeds, binds, and evaluates the entire governing exercise. One of the core principles of meta-governance is rationality – the idea that governing must be based upon verifiable facts, a logical choice of instruments, and a defendable strategy. Other core principles include responsiveness and performance. In meta-governance, governors and the governed alike take each other's measure in formulating the norms by which they want to judge each other and the measuring process itself.

Elements

Interactive governance, as an intentional activity, consists of three components: images, instruments and action. *Images* constitute the guiding lights as to the how and why of governance. Images come in many types: visions, knowledge, facts, judgements, presuppositions, hypotheses, convictions, ends and goals. They not only relate to the specific issue at hand, such as fisheries or food security, but also contain assumptions on fundamental matters such as the relation between society and nature, the essence of humankind, and the role of government. The main question is not whether actors involved in governance possess images – because everyone does – but how explicit and systematic they have been and will be made.

One of the most influential images in fisheries management in the last decades has been the 'tragedy of the commons', as expressed by Hardin (1968). His suggestions that humans are relatively short-sighted, non-communicative and profit-maximising beings have exerted substantial influence on management theory and practice, and have provided an impetus towards privatisation of fishing rights.

Instruments constitute the second – and intermediary – element of interactive governance. They link images to action. Other than the toolkit metaphor suggests, however, instruments are not a neutral medium – in fact, their design, choice and application frequently elicit strife.

The range of instruments available to influence societal interactions is extremely wide. Instruments may be 'soft' in nature, such as in the case of

information, bribes, or peer pressure. They may also have roots in the legal or financial realms, and involve court cases, taxes, permits, or fines. Finally there are the 'hard' instruments of physical force. It is clear that the choice of instruments is not free; one's position in society determines the range available. In addition, instruments have a varying range of applicability, some being general and others specific.

The last element of interactive governance is *action*, or, putting the instruments into effect. This includes the implementation of policies according to set guidelines, which is a relatively dry and routine affair. Action may also, however, consist of mobilising other actors in a new and uncharted direction. In this case, the actors rely upon convincing and socially penetrating images and sufficient social-political will or support. The interactive aspect of governance emerges succinctly.

These three elements of interactive governance are closely connected and not always easily distinguishable. Moreover, they generally do not present themselves in an orderly sequence.

Modes or Styles

Governance theory distinguishes modes of governance that differ according to their locus. There are three ideal types: hierarchical governance, self-governance, and co-governance. All societies demonstrate, and require, mixes of these three modes or styles.

Hierarchical governance is the most classical of the governance modes, characteristic for the interactions between a state and its citizens. It is a top-down style of intervention, which expresses itself in policies and in law. Steering and control are key concepts in this approach. Although the metaphor 'steering the ship of state' has now become old-fashioned, the act of steering societal dynamics is still commonplace. The need for control and steering is not in doubt; its practice is more intricate than often imagined. As modern society is diverse, complex, and dynamic, the controlling or steering authority requires complementary abilities. In addition to top-down governance there are many other arrangements providing for checks and balances in modern societies. In recent years, our perceptions of hierarchical governance have become redefined. The commanding state has been transformed into a regulatory one, the procuring state activities into enabling ones, and benevolent into activating roles. The state nonetheless remains the central governing unit in modern society.

Self-governance in modern society refers to the situation in which actors take care of themselves, outside the purview of government. This is a ubiquitous phenomenon, quite distinct from government intention or policy. Liberal governments will highlight societal self-governing capacities, and socialist ones may downplay them. Governments may choose to deregulate or privatise, withdrawing from the public sector or incorporating self-regulatory capacities in their governance frameworks. We emphasise, however, that self-governance is not a government-created capacity, but comes about

of its own accord. In fact, without sustaining a capacity for self-governance, societal governance is an impossible task. The collective action school has made the most systematic analysis of self-regulation with regard to the exploitation of common-pool natural resources, such as capture fisheries.

The third mode is termed *co-governance*. The essential element of this governance mode is that societal parties join hands with a common purpose in mind, and stake their identity and autonomy in the process. Much attention has been devoted to co-governance and to the opportunities it opens. In fisheries, the form of co-governance called co-management is particularly influential. We discuss so-called 'fisheries co-management' in this volume as an expression of co-governance. Co-governance is much broader than the other governance modes and implies the use of organised forms of interaction for governing purposes. A key assumption is that no one actor is in control; instead, interactions are of a horizontal kind.

Governance theory contains numerous manifestations of co-governance, including communicative governance, public-private partnerships, networks, regimes and co-management. We believe that co-governance, in its varying forms, is well equipped to deal with diverse, complex, and dynamic situations. No society, however, operates solely along the lines of co-governance, or, for that matter, of self- or hierarchical governance. Instead, mixes of various modes inevitably prevail. Their design is of special concern.

Governance in the North and South

We aim in this volume to develop an approach to fisheries governance and food security that is of relevance to the South as well as to the North. This expectation is premised on the existence of similarities as well as on interconnectedness. Thus, although there are important differences between aquatic ecosystems in tropical and temperate waters, the ecological principles ordering life and conditioning fishing and fish farming are identical. This is true for the human side as well: markets, politics, and social intercourse are underpinned and triggered by the same human condition.

Not only does life on this planet develop according to identical principles, it is also highly connected. Some fish undertake extensive migrations, affecting the fishers of many nations. Environmental changes in one region impact others, often in unpredictable ways. Finally, the globalisation process, with its economic, political and cultural ramifications, ties countries and people more tightly together than ever before. These are good reasons to take a universal approach. And indeed, many scholars addressing the governance of fisheries and food security, either from an analytical or a prescriptive perspective, do so.

At the same time, there are manifold differences between North and South, most prominently perhaps in the human dimension. Some years ago a scientist pointed out that fisheries management is largely identical to people management, as it is only through influencing people that one reaches the fish (Symes 1996). As societies within and between the North

and the South vary substantially, this is bound to affect the practice of governing. It is for this reason that variations must receive more attention.

In the 1960s, Myrdal (1968) suggested that nations in the South are 'weak states'. This description has made way for other normative nomenclature, such as 'collapsing states' or even 'failed states', and, not to forget, 'authoritarian' and 'dictatorial' states. Compared to the states of Europe and North America, the states of the South are sometimes unstable, and either have a deficiency or an overload of authority. They are also often less 'democratic'. There are, in the parlance of today's policymakers, inadequate traditions of good governance, insufficient transparency, and an overdose of corruption. Moreover, in many developing countries institutions making up civil society are underdeveloped.

We cannot escape from evaluating governance styles according to their effectiveness in the face of trends such as increasing societal diversity, complexity and dynamics. Some styles apparently have greater capacities to handle such changes than others do. Generally speaking, the more successful are those of a co-governing kind, in which participation of societal actors is encouraged, rather than hampered.

Food security and safety concerns are intimately related to poverty in North and South. However, in the North, fisheries governance has stronger connections with employment of fishers and fish processors, and with supplying luxury markets, where fish is only one of a range of affordable animal protein sources, and not generally with food security per se.

The socio-economic literature on fisheries and aquaculture points out other differences between North and South. The FAO (2002a), for example, notes that in 2000, an estimated 36 million people were directly engaged in fishing and fish farming. A stunning 94% of marine fishers live and work in Asia, Africa, and Latin America. The dimensions of employment and income-generation clearly need to be included in the governance of fisheries, particularly in the South. In addition, employment figures bear a direct connection with governance. Some fisheries management instruments, such as the Individual Transferable Quotas currently propagated to regulate northern fisheries, clearly lack relevance for many southern fisheries, where landing points are many, employment levels high, and quotas impractical. Here other solutions must be found.

The Outline for this Volume

This volume has five parts, organised according to the orders of governance.

Part I presents the governance perspective (chap. 1) and identifies the overarching challenges and concerns in fisheries (chap. 2).

Part II is devoted to the first order of governance and an analysis of the fish chain. In consecutive chapters, we deal with the ecological basis of fish production (chap. 3), capture fisheries (chap. 4), aquaculture (chap. 5), postharvest systems (chap. 6), and a number of crosscutting issues (chap. 7).

Part III turns to the second order of governance, and the topic of institutions in fisheries governance. In three substantive chapters, we highlight the roles of local institutions (chap. 8), national-level institutions (chap. 9), and international institutions (chap. 10). Chapter 11 presents an analysis of institutional linkages.

Part IV reviews the principles of fisheries governance, and introduces a normative perspective. Chapter 12 presents a review of principles underlying current governance in fisheries, drawn from international sources. The following chapter (chap. 13) goes on to propose a set of meta-principles based upon the governance approach proposed here. Chapter 14 discusses hard choices and values that emerge from the contradictions.

Part V sums up and expands upon our arguments. Chapter 15 returns to the challenges and concerns of chapter 2 and reviews the current state of governance in their light. Chapter 16 is more theoretical in nature, and confronts the insights of earlier chapters with the governance approach described in chapter 1. Chapter 17, finally, considers how the governance approach can be put into action in fisheries.

2

Challenges and Concerns in Capture Fisheries and Aquaculture

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Introduction

Fish, taken here to mean all living aquatic products harvested by humans, are a critical source of protein, lipids and micro-nutrients in people's diets in the North and South alike. Fish are often part of the staple diet in developing and less-developed countries, and consumption of fish in developed countries has increased with its heavy promotion as healthy food and upmarket food sources. Global concerns about fish harvests, fish stocks, and the health of aquatic ecosystems are directly related to the increasing demand for fish as food and to the potentially short supply, due largely to overfishing and unsustainable fishing practices. Because fish are such an important part of the human diet, these concerns intertwine with social concerns such as fair allocation, improved livelihood and social well-being, and secure access to a safe food supply.

Fish are not only food for human consumption – they also serve ecosystem functions. From an anthropocentric point of view, fish as food for people is the central concern, reflecting management actions and goals. Recently, the importance of fish in their natural ecosystems has been recognised, resulting in the adoption of a more comprehensive approach to fisheries management. Challenges are thus based on acknowledgement of the interconnectivity of concerns for ecosystem health, social justice, livelihoods and food security and food safety.

The health of ecosystems determines their productivity. In capture fisheries, target species are often overexploited to the point where other parts of the aquatic ecosystem are affected. In the past, this problem was mainly addressed from the perspective of the overexploitation of single fish stocks. However, there is increasing awareness that the productivity of capture fisheries should be seen in the context of the overall health of the ecosystem and that ecosystem-based management of fisheries should be employed. Such a management approach aims also to address the problems of bycatch (including incidental catches and discards), and habitat damage caused by fishing gear.

Social justice is a key issue in fisheries, since the distribution of power and income and the allocation of rights change in relation to access to re-

sources. The changes often tend towards greater concentration in the North, and in the South the distribution is centred on those with ample economic and political power. The issue of social justice thus plays an important role in fisheries decision-making and policy development.

Closely related to ecosystem health and social justice are the livelihoods of people in coastal communities who rely directly or indirectly on fisheries as their major source of employment and income. Many members of these communities have long traditions and cultural ties to fisheries livelihoods, which are being threatened by various activities taking place in the coastal areas. Coastal sprawl, for example, is spreading all across the globe, turning coastal lands into urban centres and expensive residential areas in some cases and industrialised zones in others. Yet in many places in the South, living along the coast is often a necessity and the quality of life is not always high, particularly for unskilled workers who migrate from the inland areas. These coastal communities are marginalised and have very little bargaining power when it comes to access to resources or participation in management.

Lastly, fisheries play an important role as a provider of food. In many developing countries, fisheries products are the main source of animal protein and some micronutrients. The use of 'low value' fish for fishmeal production, which is then used as feed in aquaculture production of 'high value' fish, is an example of the competition in fish consumption and food safety between the North and South. Overall, changed productivity and the redistribution of fisheries products on the market will greatly impact the poor. Therefore, in the discussion on food security and fisheries governance, it is important to include issues related to the history of the human use of aquatic ecosystems, which has witnessed major changes. As societies change, so do their perceptions of the constraints and opportunities provided by their natural capital, in particular the aquatic ecosystems they depend on for their livelihood.

Given these basic concerns, does the management of fisheries resources face greater challenges than the management of other food production systems such as poultry farming? In the domain of fish as food, fish do not differ from anything else in their potential for industrialisation and technological advancement to increase productivity or in their vulnerability to environmental consequences. Mad cow disease in Europe and North America and the recent incidence of avian influenza affecting millions of chickens in many countries in Asia are just two examples of the price of intensive agricultural systems that parallel the recent study showing the high level of toxins in farmed salmon (Hites et al. 2004). Stories like this and various scientific findings generate grave public concern about food security and food safety and have direct effects on ecosystem health, social justice, and livelihoods.

The aspect distinguishing fish from other food products lies in its origin as a common pool resource with free access for all. Since the early development of human societies, capture fisheries have been managed under various systems world-wide. Traditional fisheries management based on cus-

tomary and territorial user rights as in the Pacific Islands was perhaps one of the oldest, and in the context of a widespread modern discourse favouring property rights, it might seem the most advanced. Thus, Hardin's *tragedy of the commons* metaphor (1968) not only fails to capture the real governance issue in fisheries, its implication that the property right system is a remedy is also misleading. In the former, the issue is not that governance is absent in dealing with the commons. The problem is that new driving forces have developed, surpassing the capacity of the old management systems and putting new pressures on the natural and social systems. In the latter, the essence of property is the right to exclude others and reserve for oneself the benefits to be drawn from the resources.

The immediate external driving forces for increased exploitation of fisheries are multifarious, including over-investment in fishing fleets, the influx of people to coastal areas, the expanding demand due to population increase and better market access, and more efficient capture technologies and vessels. These immediate driving forces reflect the more fundamental forces such as globalisation. What follows is the presentation of the driving forces and the process of globalisation, with an emphasis on its relation to fisheries and the challenges it poses to fisheries governance. Concerns about ecosystem health, social justice, livelihoods, food security and food safety are then described in their own right and as results of globalisation.

Globalisation and Fisheries

Although globalisation is often considered a good thing for the world, it all depends on what drives it, and in regard to fisheries, how it drives the development of fisheries, and more importantly, how it affects ecosystems, allocation, employment and food supplies. Changes induced by globalisation occurred in the major world fisheries prior to the mid-twentieth century (e.g., Innis 1954; McEvoy 1986), but the global transition to capitalism and modern fisheries with all its intended effects did not arise until the second half of the twentieth century. Trends in global production and trade in fisheries since 1950 illustrate the massive scale of that transition.

At the beginning of the 1950s, less than 5% of the global marine fisheries resources were maximally exploited or overexploited. By 1994, 60% of global marine fisheries had reached that condition and total marine production was at a plateau (FAO 1999a). The strength of the global demand over the period from 1961 to 1999 is indicated by the rate of growth of fish product exports. Export quantities increased almost five and a half times, while production only a little more than doubled (FAO 2003a). Growth in global production and trade was fed by huge increases in effort, notably in industrialised fisheries. According to the Food and Agriculture Organization (FAO) estimates, the global number of fishers increased from 12.5 million to 36 million from 1970 to 1998 (FAO 1999a). From 1970 to 1995, the number of non-decked fishing vessels grew by roughly 55% and decked vessels more than doubled in number (FAO 1998). These data do not even

include the significant advances in the technological sophistication of fishing craft and gear over the same period, which resulted in the changing patterns of fishing grounds as shown by Pauly et al. (2003).

Another important point to note in the changing picture of global fisheries has been the increasing prominence of aquaculture. As capture fisheries production stagnated in the 1990s, aquaculture production picked up the slack. Aquaculture accounted for 18.5% of the total fish production in 1990 and 26.3% by 2000 (FAO 2002a). As in fisheries, modern aquaculture, with its intensive operations and high yield, is driven by capitalism and modernity, and with similar consequences to ecosystem health and other concerns, as described below.

At the heart of the transformation in fisheries since 1950 is the growth in demand driven by several factors related to an intensification of capitalist production globally. The first is the increasing wealth and size of the population in the dominant economic regions of the world and major areas of fish consumption: Europe, North America, and Japan. The second is the demand diversification in these regions. The third is the increasing importance of demand sources in other regions as populations there experience economic growth. Increasing global demand raised international fish prices, intensified effort, and expanded commodification to hitherto untapped supply sources in the form of fishing areas and fish species not previously linked to the global market. Regional examples of fisheries globalisation are presented by Arbo and Hersoug (1997), Johnson (2002) and Thorpe and Bennett (2001).

The dominant framework for developments in the 1950s to the 1970s was modernisation theory, as exemplified by the countries of Western Europe and North America. It holds that judicious intervention by the state and the international community, as informed by scientific understanding, can propel poorer regions and nations through the stages of growth leading to development. Several observers of fisheries have adopted the analytical label of Fordism to describe the particular process of fisheries modernisation (Bonanno and Constance 1996; Apostle et al. 1998). Fordism describes the ideal organisation of production and implies a perception of the relationship between humans and the sea. Production under Fordism is based on product standardisation, production process decomposition, technological intensity, relatively inflexible production designs and large production volumes (Harvey 1989). It shares with high modernity a basic belief in people's ability to understand and manage their environment to achieve predictable and consistent results. We have learned – though far too late – that in many cases, such as fisheries, this is simply not true.

The mass capture techniques and efficient high-speed production of the industrial fishing sector are the fullest expressions of Fordism in fisheries. During the heydays of state-led fisheries development from the 1960s to the 1980s, Fordist industrial fishing was the ideal in both the North and the South because it was felt to maximise production for national consumption and international exchange. Bailey and Jentoft (1990) present a critique of fisheries development strategies in an effort to achieve these two

objectives. The shift towards industrial production was to be achieved through the state-sponsored creation of industrial fishing fleets and processing plants and the professionalisation of existing small-scale fisheries sectors. While many countries have established industrial fisheries sectors and small-scale fisheries have changed in dramatic and differing ways to reflect new technological and market opportunities, the promise of the Fordist model turned out to be illusory and, indeed, has had catastrophic effects for global fisheries.

The destructive effects of the Fordist model on fisheries can be expressed in terms of a primary effect and secondary effect. The main problem with the Fordist model is its fundamental conflict with the natural conditions to which it is applied. Fish stocks fluctuate according to a range of natural factors whose interaction is poorly understood. In addition, fishing adds to the unpredictability of aquatic ecosystems. The underlying assumption of Fordist fishing, that constant high volumes of fish can be extracted from an ecosystem, fails to account for these natural conditions (Apostle and Barrett 1992). The effect of applying the industrial model to fisheries is then to exacerbate instability and hasten resource collapse world-wide, as shown by Pauly, Christensen, Froese and Palomares (2000) and Pauly et al. (2002).

A critical secondary effect of Fordism in capture fisheries is the conflict between industrial and small-scale sectors. The richest available fishing grounds are generally in coastal waters and are generally exploited by small-scale fisheries. If there are no area restrictions on fishing or if there is weak enforcement, as in many places in the South, industrial fishing vessels move into inshore waters and disrupt small-scale fishing. Despite strong measures that exclude industrial fishing from the inshore zone, industrial fisheries may still have an impact on migratory stocks fished by both sectors and on critical habitats of many species that are economically important to large and small-scale fishing.

By the 1990s, conditions for global capture fisheries had changed. Most importantly, the increasing intensity of fisheries crises made it obvious that the Fordist model of fisheries industrialisation was destroying global fisheries. Two solutions are commonly presented as remedies to this state of affairs. The first argues that only complete rationalisation of production on an international scale can solve the global fisheries crisis. Systems of full fish stock privatisation should be worked out, fishing fleets rationalised, employment in fisheries slashed, and market mechanisms of stock allocation and disposition put in place – in short, the full capitalisation of fisheries. The alternative proposes that the industrial model of fisheries production is grossly unsuited to the sustainable exploitation of fisheries. Instead, a much more flexible, even co-management model should be implemented with management responsibility devolved in such a way as to incorporate local expertise, recognise distinct local conditions, and empower local participation (Pinkerton 1989a; Collet 2002).

Regardless of the particular combination of responses to the current global fisheries crisis, they need to grapple with four clear consequences of

globalisation and the legacy of the Fordist model of development: (1) aquatic ecosystem health is globally threatened by the massive intensification of fishing efforts; (2) the capitalist development of fisheries is resulting in social changes that have profound implications for social justice; (3) coastal livelihoods, employment and social relations are threatened by the transformations of fisheries due to capitalist development; and (4) the expansion of the international fish market and intensification of local links to it have raised the spectre of food insecurity and food safety for poor populations that historically depended on fish as an inexpensive source of protein.

Ecosystem Health

The most widely accepted definition of an ecosystem is the one formulated by the Convention on Biological Diversity (CBD 1994): '*Ecosystem* means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit'. This definition suggests that fishing grounds and fish farms are ecosystems, as are components of the nested structures of larger and smaller ecosystems: entire oceans, coastal zones, watersheds and so forth. In order to function well and adapt to present and future challenges (including exploitation by humans and climate change), an ecosystem has to be healthy. Some definitions of ecosystem health are based on the absence of ecosystem stress, for example: 'An ecosystem is healthy and free from "distress syndrome" if it is stable and sustainable – that is, if it is active and maintains its organization and autonomy over time and is resilient to stress' (Haskell et al. 1992). Costanza (1992), however, describes ecosystem health as 'a normative concept: a bottom line', and includes the following concept definitions of ecosystem health: homeostasis, absence of disease, diversity or complexity, stability or resilience, vigour or scope for growth and balance among the system components (see chap. 3).

The numerous parameters of ecosystem health invite the use of multiple criteria and reliable indicators at all levels of biological organisation from genes through species, populations and communities to whole ecosystems. Christensen (2000) explores two categories of indicators for marine fisheries, one based on 24 classical ecosystem attributes (Odum 1969), and the other on a fishing-in-balance index. Further works on sustainability indicators for marine capture fisheries, some of which emphasise ecosystem-based governance, are reviewed by Garcia and Staples (2000a, b). For aquaculture and its supportive ecosystems, Pullin et al. (forthcoming) suggest sustainability indicators for aquaculture and emphasise those related to ecosystem health: ecological footprints, emissions and escapes from fish farms, and the ecological implications of competition vs. sharing of resources among food production and other sectors. Costa-Pierce's (2002) paradigm shift to ecological aquaculture amplifies the same theme.

Assessments of the health of natural resource systems and the effects of fishing on ecosystems largely depend on the assessor's perspective. The

historical dimension and shifting baseline that lead each new generation to accept its own observations as the norm (Pauly 1995, 2001) apply in particular to fisheries and environmental assessment. Many of the world's capture fisheries are undoubtedly in poor shape (e.g., Hutchings 2000; Pauly, Christensen, Froese and Palomares 2000; Jackson et al. 2001; Ellis 2003; Pauly and Maclean 2003). Kempf et al. (1996) describe the 'fisheries crisis that transcends political boundaries and affects north and south alike'. From an ecosystem-based perspective, the effect of fishing on fisheries ecosystem health is high, particularly if gears that result in a high level of bycatch and habitat damage are employed (Chuenpagdee et al. 2003).

Aquaculture has witnessed a similar historical technological development, and in some cases a boom-and-bust period. Many aquaculture industry techniques, particularly those involving herbivorous species and less intensive systems, can be sustainable, but many intensive coastal aquaculture techniques pose serious concerns for ecosystem health (e.g., Chuenpagdee and Pauly 2004). Environmental problems caused by intensive aquaculture include water pollution from effluents and the conversion of large areas of wetlands; for example, mangroves (Dierberg and Kiattisimkul 1996).

The points made by Naylor et al. (1998, 2000) regarding nature's subsidies for salmon and shrimp farming, the loss of top predator species such as sharks as presented by Myers and Worm (2003), and the global crisis in fisheries as revealed by Pauly, Christensen, Froese and Palomares (2000) naturally provoke various defences (e.g., Roth et al. 2001, Lomborg 2001). Capture fisheries, aquaculture, and other sectors have an impact on each other ecologically, especially when they are mismanaged. For example, it was the extraction of water, principally for irrigation, that destroyed the Aral Sea and its fisheries. Another example is the use of synthetic fertilisers on land, which is expected to result in a doubling in the level of nitrogen run-offs between 1990 levels and 2050 (Seitzinger and Kroeze 1998).

One measure used to assess the health of ecosystems is the ecological footprint introduced by Wackernagel (1994). In principle, food production as well as its processing, distribution, and consumption all have ecological footprints because of the consequent waste processing. The utility of ecological footprints in natural resource management is controversial (e.g., Ferguson 1999; Van den Bergh and Verbruggen 1999; Wackernagel 1999). However, non-negotiable natural laws and area-specific limits to productivity always set the bottom lines around which humans can negotiate their economic and social options. The bottom lines for capture fisheries and aquaculture are primary production (Pauly and Christensen 1995) and ecosystem carrying capacities (e.g., Christensen and Pauly 1998).

Social Justice

Fisheries in the North and South are relevant to both the rich and the poor, the privileged and the unprivileged, the organised and the disorganised,

and those with varying degrees of political and other bargaining powers. Considering the problems of distribution that emerge around every corner, the issues of trade within the fish chain and the rights of property and access to common fish resources, fisheries are perhaps more prone to justice discourses (Armstrong and Clark 1997; Sumaila and Bawimia 2000; Hernes et al. 2005;). Clearly, social justice – with its many elements – is something a governance approach cannot ignore.

A measure commonly used for fisheries allocation is the total allowable catch (TAC). In principle, once it has been determined, managers first need to take into consideration that there are several heterogeneous user groups, and then establish rules to ensure a fair distribution among them. Allocation thus raises issues of social justice. What criteria should be used to decide which groups should get how much? How do users qualify and what should be required of those who obtain access?

Some nations, especially in the North, consider Individual Transferable Quotas (ITQs) an effective way to distribute the TAC (Apostle et al. 2002; Arnason 1995). This practice is based on a different set of justice principles, since ITQs are tradable commodities and the entitlement is based on the ability to pay. Here, rights are only loosely coupled with dependency, if at all, which is a major reason why there are so many objections to ITQs. In general, justice principles tend to be different in the market than in the public sector, where equal treatment is required, and in civil society, where individual needs are key, although the boundaries between them are not necessarily closed (Walzer 1983). Similarly, as the market and the state penetrate civil society, perhaps adopting some of its functions and responsibilities, they replace the justice principles of one sphere with those of the other. Since fisheries involve all three spheres, the challenge of fisheries governance is that so many inherently contradictory principles all need to be reconciled at the same time.

In the South, justice issues concerning the market and trade are not focused around ITQs. Rather, they are concentrated on the daily marketing and trading of fish and seafood products with direct power implications (Bailey and Jentoft 1990). Fishers are typically in a weak bargaining position. With a perishable product that cannot be stored for long, people who fish often have few alternatives than to sell to the buyer at the price that is offered. Relations between fishers and buyers and/or middle-persons are further complicated as they engage in informal loans. In such cases, fishers often have no choice but to sell their catch to a particular middle-person as part of their debt payments.

Social justice is of a completely different form and scale when it follows the market chains from fishers and their communities to the processors, wholesalers, retailers, and consumers around the world. Kaczynski and Fluharty's study (2002) clearly demonstrates how the fisheries of Sub-Saharan West African coastal countries are heavily exploited by European fishing fleets, albeit under bilateral fishing cooperation agreements. The economic and political inequalities between the North and South are crucial to this fisheries issue.

Social justice is directly related to power and poverty and indirectly to resource conservation. To make a living when no alternative sources of employment are available and one's bargaining position is weak, the only response to falling prices is for fishers to increase their fishing efforts. It is true that overfishing ruins the resource base and is a source of poverty, but poverty may also be what makes people overexploit (Béné 2003). Encouraging fishers to organise or otherwise helping to shield them from a dismal situation is a strategy for empowerment, since it can strengthen their position vis-à-vis middle-persons. It is also a way of relieving the pressure on the resource.

Gender equity is another aspect of social justice, and is usually left out when planning development programmes, especially regarding resource management (Mehra and Esim 1998). A critical examination reveals that many resource management programmes and initiatives often target the male members of the community, the fisher*men*, who are considered the direct harvesters of the fisheries resources. Women are assumed to be secondary in terms of development interventions and are generally given a lower priority (Lokshin and Yemtsov 2000; Williams 2000). This is despite the important role that women in many traditional and modern societies play in the marketing, and, to a lesser extent, the capturing, of fisheries products. In many societies, women occupy lower positions in the hierarchies of command and control and in the households (Cadigan 1991; Binkley 1995; Connelly and MacDonald 1995; Begossi 1996). The advantaged position of men in the division of labour contributes to male dominance in decision-making. The inequalities have major implications in the social justice debate.

Livelihood and Employment

The importance of fisheries for people's livelihood is reflected in figures as well as in the political discussions on the restructuring of the sector. It is widely recognised that if fisheries are not properly managed, the fishers' abilities to obtain income or food from them diminish. This is a problem in the South as well as in fisheries-dependent regions of the North, since alternative employment opportunities are frequently unavailable.

Many fishing populations are joined by new entrants, some of whom end up with better access to market shares and economic activities than the existing local communities. Globalisation and local developments outside the coastal areas have important positive or negative impacts on the livelihoods of fishing communities. Despite the important impact on their livelihoods, coastal communities are often excluded from decision-making processes and debates on their livelihood options, such as access to the resources they depend on.

How many people in the world are employed in fisheries? FAO data suggest there are 36 million fishers in capture fisheries and aquaculture worldwide (FAO 2002a). Garcia and Moreno (2003) estimate that more than 100

million people depend on fisheries and Berkes et al. (2001) put this figure even higher, with 50 million people currently directly engaged in fish capture and as many as another 200 million dependent on their activities. The exact number is not known, but millions of people fish and depend on fishing and their livelihood security is increasingly under threat. The technological intensification of fish capture places unsustainable pressure on resources and increasing export market dependence creates economic instability (McGoodwin 2001). An important consequence of globalisation is that pre-existing arrangements that regulate access to marine resources are challenged and undermined, resulting in increased competition and livelihood insecurity. If the experience of the Organisation for Economic Co-operation and Development countries, excluding Iceland and Portugal, is any guide for the future, this trend has already begun. The countries with the most industrialised fisheries in the world saw employment in fisheries decline by a third between 1970 and 1996 (Mathew 2003).

Livelihood is not only a matter of quantity; it also involves the quality of employment. Maritime anthropologists often note the specific nature of capture fishing and emphasise similarities in work worlds in disparate places (Acheson 1981; McGoodwin 1990). They include egalitarian relationships among crew members, a tendency to spread the risks of fishing by sharing systems of remuneration, and a strong sense of competition among fishers. There are also considerable differences between sub-sectors, particularly between the moral economy of small-scale production and the market basis of industrial fish capture. The view of capture fishing as hunting and gathering as opposed to aquaculture as a form of agriculture portrays another dimension of quality in employment associated with personal and financial risks, seasonal variations and lifestyle patterns.

Fishing is known for its division of labour by gender. In all parts of the world, women perform land-based activities ranging from shoreline or tidal pool fishing or gleaning of other aquatic organisms to fish culture, fish processing and marketing. Several studies note increasing instances of women participating in actual fish capture, predominantly in riverine and lagoon aquatic ecosystems (Begossi 2002). Women also engage in pre-fishing activities such as preparing and mending nets as well as preparing bait and post-fishing activities including processing, distributing and marketing. Women's involvement in fisheries generally lowers the operational costs and overhead expenses of the household (Storey and Smith 1995; Grzetic et al. 1996; Ostrove and Adler 1998).

Food Security and Food Safety

The most general definition of food security is the one formulated by the World Bank (1986): 'Food security is access by all people at all times to enough food for an active healthy life'. There are, however, many definitions of food security, depending on the context (see reviews by Maxwell

1996; Kurien 2004). Some definitions include elements of food choice, like the one formulated by the UN:

> Food security exists when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life .... The right to food is the right to have regular, permanent and unobstructed access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to whom the consumer belongs and which ensures a physical, mental, individual and collective fulfilling and dignified life free from anxiety .... (UN 2001b).

Emphasising the key role of women in intra-household food security, Gillespie and Haddad (2001) encourage an expanded concept of food security across agricultural and nutritional development efforts and a strengthening of the human rights paradigm in the field of human nutrition. Indeed, the Universal Declaration of Human Rights (Article 25) and subsequent international agreements emphasise people's basic right to adequate food (see chap. 13). In a recent publication, Kurien (2004) argues that food security has three dimensions, or A's: accessibility, affordability, and absorption. Accessibility and affordability describe an individual's capacity to obtain sufficient foodstuffs and connect to the incidence of poverty. The last dimension – absorption – refers to the conditions of hygiene and health needed for food to be absorbed by the human body. This aspect is otherwise known as food safety.

Fish has long been recognised as a healthy food. It is rich in high quality protein and in vitamins, minerals, and essential fatty acids (e.g., Steyn et al. 1995; Elvevoll and James 2000). Many rural communities in the South rely heavily on fish as part of their diet. As reported by Thilsted et al. (1997) and Roos (2001), small indigenous fish contribute significantly to the nutrition of the rural poor in Bangladesh as an extremely important source of calcium, iron, and vitamin A. Fish is regularly consumed in the South, is a traditional food choice in some countries in the North and in many others fish consumption is widely promoted as a healthy food choice.

The increase in the demand for fish has heightened the interest in the important contributions of aquaculture to food security. The review by Ahmed and Lorica (2002) of Asian experiences shows the increasing roles of aquaculture as nutrition supplier to poor households and contributor to poverty reduction. The integration of freshwater aquaculture into smallholder farming systems can increase the availability and affordability of fish in the diets of the rural and peri-urban poor (e.g., Edwards et al. 1988; Ruddle 1996; Prein and Ahmed 2000), especially when vegetables are raised around fishponds.

A food can be deemed safe if its production does not present its producers (in this case fishers and farmers) with unreasonable risks and its consumption does not harm consumers. In determining whether a food is safe

to eat, there are many important variables in the features of consumers, including age (babies, adolescents, and adults), gender and status (e.g., special needs of pregnant women and lactating mothers), state of health and tolerances (e.g., diabetics, acclimation to local micro-organisms, and so forth). The amounts consumed and consumption frequency of a given food, whether by choice or by force of circumstances, are also important variables.

Aquatic animals and plants are also capable of harming people who handle or consume them by transmitting pathogens and parasites. They may also contain harmful substances such as heavy metals, toxins, and a wide range of organic chemicals. Some groups of aquatic animals are inherently more risky as human food because of their propensity to accumulate pathogens and chemical contaminants. The most risky groups are the filter feeders, especially bivalve molluscs such as mussels and oysters, which have long been used as indicators of marine pollution and risks to seafood consumers. The risk associated with consuming bivalve molluscs increases if there are harmful algal blooms (Maclean 1993). Landsbergh (2002) gives a comprehensive review of the effects of algal blooms on aquatic organisms and ecosystems, covering about 200 species of harmful or potentially harmful micro-algal or ciliate species and showing that the problems are much wider than the phenomenon commonly called *red tide*.

Another risk to human food safety is the ciguatera poisoning in tropical fin fish, especially in the Caribbean and the South Pacific. Ciguatera poisoning comes from eating reef fish such as barracuda, snappers, or groupers that contain ciguatoxins from *Gambierdiscus toxicus,* an epiphytic dinoflagellate growing on algae and coral rubble. Since 1990, records of ciguatera poisoning in the South Pacific have been collected in the FishBase data collection now managed by the Secretariat of the Pacific Community (www.fishbase.org). The database includes detailed records of the prevalence and distribution (geographical and by species) of ciguatera poisoning.

To summarise, food security, food safety and quality assurance are essential if developed and developing countries are to exercise options regarding fish for export as well as for their domestic consumption.

Challenges and Concerns in Governance

Globalisation, ecosystem health, social justice, livelihood, food security, and food safety are fisheries challenges and concerns that should be primarily addressed by people who are directly and indirectly involved. A governance approach is seen as conducive to efforts to address these concerns and is thus a prerequisite for positive outcomes in terms of healthy ecosystems, better justice, improved livelihoods, and better food security and safety.

Fisheries governance has not kept pace, however, with the deep and rapid changes in fisheries, resulting globally in a complex ecological, social, and economic crisis. As the demand for fish products grows world-wide

and the productive capacity of the world's aquatic ecosystems decreases, governance responses should also be global. Developing and implementing governance systems to effectively address fundamental concerns has thus become a global challenge that requires thorough and comprehensive efforts from both North and South. One of the existing initiatives along this line is the Sustainable Livelihoods Approach (SLA), which offers an alternative way to consider development priorities by putting people at the centre. SLA uses an analytical framework that integrates natural, social, physical, financial and human components in the formulation of policy, institutions and processes, based on sustainability concepts and within the context of vulnerability and poverty (see chaps. 15 and 17). This, and the governance approach presented in this volume, ultimately support the United Nations Millennium Development Goals, as declared in September 2000, particularly those pertaining to environmental sustainability, gender equality and empowerment.

17

Governance in Action

Robin Mahon, Maarten Bavinck, and Rathindra Nath Roy

Introduction

In this final chapter we explore what governability is for fisheries and how this can guide the ways forward. We take governability as conceived in chapter 16 as our starting point. A fisheries governor aiming to put governance into action should first examine the governability of the fishery. Then we proceed with several ideas on how to enable and enhance governability, concluding with some issues faced by fisheries governors when changing governance.

We try to communicate a perspective of how to undertake the journey towards improving governance, rather than a road map. We urge practitioners to set out on this journey, to make a start even if the way is not entirely clear. Reform is an iterative, adaptive process promoted by change agents. Often the next steps reveal themselves only after the process has reached an appropriate stage. Those who would promote better governance of fisheries may not have a clear view of the target, which will be different for each situation, but should have a strong sense of which direction to go in order to get a better view of the target.

The Concept of Governability

The concept of governability introduced in chapter 16 is central in the process of change towards better governance. Fish chains will differ regarding the extent to which they are governable, i.e., have characteristics that facilitate or hamper governance. Chains with low diversity, complexity, and dynamics may be inherently more governable than those for which these characteristics are high. This may influence the approach that actors agree to take. For example, a large commercial fishery that uses a few large vessels to exploit a few relatively stable resources with outputs that are processed and sold in supermarkets may be more governable than a widely dispersed, small-scale fishery from which products are distributed fresh by a large number of middlemen with little organisation of either fishers of distributors.

Ideally, a change agent would evaluate a fishery in terms of the characteristics that determine its governability – whether the governance is matched with the system to be governed regarding diversity of actors, levels of orga-

nisation and capacity, channels and networks for information flow, inequities in actor group empowerment – and determine where inputs would be most likely to improve governability. These inputs can then be the focus of attention. We emphasise that governability is not about governing but about the properties that lead to good governance. The difference can be likened to that between a theatrical production where the actors' lines are predetermined and the director oversees the interplay, and improvisational theatre where the director is sure that the actors are capable and sets the stage for their interchanges, without knowing what they will be.

Governance has been described (see chaps. 1 and 16) as comprising three interrelated orders of human activity. The order most proximate to the fisheries action is problem-solving or day-to-day management, followed by the institutional framework for problem-solving, and finally, overarching metagovernance, which is about the principles and values that underlie the institutional frameworks. Consider briefly how conventional perspectives on fisheries management might map onto these orders. For some, the term 'management' encompasses all three orders, for others it is mainly the day-to-day activities. For some, policy is a very practical term that should translate with little variability into implementation, whereas for others, policy has a strong component of principles and concepts.

It is important to remain aware that governance is not only about solving problems but also about enhancing the capacity to recognise and take advantage of opportunities. Tension between fisheries management and the fishing industry arises when conventional control-based approaches limit opportunities. This often happens because the opportunity takers and problem solvers are different groups of people and opportunities are taken with minimal attention to the problems that may result. There is usually a time-lag between the origin of the problem and its recognition by the problem solvers. Increasing the problem-solving role and capacity of the opportunity takers could reduce this.

Interactions

The importance of interactions among stakeholders in governance is emphasised in earlier chapters. Different types of interactions characterise the different orders of governance. Interactions take place at different levels of complexity. Among interactions, one might see the exchange of information as most basic, decision-making and strategising as more complex, and the formulation of shared vision and mental models as most complex. Facilitating governance will be largely about setting the stage for effective interaction through rules and processes. The diversity, complexity, and dynamics of the fish chain coupled with the fact that individuals and organisations in different parts of the chain may be only indirectly connected through several other actors increases the need for clearly defined rules and processes for interactions. Actors in one part of the chain need to know how actors in another part are interfacing with it. They also need to

know that there are linkages through which their inputs can be seen by other actors and can influence the chain.

In effective governance, the roles, interaction rules, and processes will be clear to all actors. The question remains, however, as to what drives chains, causing actors to play their roles and participate in interactions according to the agreed processes and rules. There is a clear perspective on the benefit of participating, or the costs of not participating. Mechanisms for peer pressure, economic sanctions, or whatever measures are agreed, must be functional. Again this emphasises the importance of information and communication. Initially, participation in governance systems may fall to a few individuals who participate on behalf of others. They may do so as true representatives, with the knowledge and endorsement of those whom they represent, or as individuals from whose participation the others in their actor group benefit as 'free-riders'. Moving from the latter situation towards the former would be an objective of interactive governance.

Governability will be enhanced by developing and implementing efficient and transparent processes for interaction among all actor groups. These processes must be iterative on time periods that are appropriate to the rates of change at relevant levels in the fish chain. These will differ. Harvest sector periodicity will be related to the life-cycles of the target species, as well as to rates of innovation and technology transfer. Post-harvest periodicity will be related to demand cycles (especially in tourism-driven markets) and to trends for which there is much less fisheries specific documentation to guide governance than is the case for the harvest sector and resource base. Institutional review periodicity may be longer yet, especially at international scales where diplomacy is an important component. At local levels, it may be related, for example, to rates of change in the capacity of actor groups or the trends in principles, such as the involvement of women or reduction in child labour.

Governability of the Fish Chain

Diversity, Complexity, and Dynamics

Effective fisheries governance will as fully as possible reflect its operating context. Clearly, fisheries score high in diversity, complexity, and dynamics. These features arise at all stages in the fish chain and at many spatial and temporal scales. The diversity in types of fisheries mirrors the combined diversity of resource types and the human systems that exploit them. This carries through into the diversity of post-harvest arrangements, depending on the local, national, and export demands for various types of products. For example, artisanal or small-scale, rural fisheries using small vessels and simple gear may serve local food demand, or they may contribute to a larger system that collects and processes the product for export. Much material is available on the biophysical diversity of fisheries and its supporting

ecosystems. There is also much information on the diversity in human aspects of fisheries systems. Assessing these as they relate to management will be familiar territory for most fisheries managers. Although the emphasis in fisheries has been primarily on the resources (stock assessment), the importance of the broader perspective obtained by assessing the entire fish chain is increasingly being recognised (Berkes et al. 2001; Charles 2001).

Fisheries analysis has typically focused mainly on the local level and close to the bottom of the fish chain. Moving up the chain to national and global levels we continue to encounter diversity and complexity in human systems. Conventional businesses, trading nationally and internationally, with investors to satisfy, may have vastly different value systems than those at the local level. Yet these interact dynamically through formal and informal linkages with which governance must contend.

Complexity and dynamics arise from the multiple linkages that occur laterally within the fish chain, or between fisheries and non-fisheries activities, as well as through vertical linkages, up and down the chain. These must be made known in order to be accommodated. Complexity and dynamics may also emanate from uncertainty due to unpredictable external factors ranging from environmental effects on fish stocks to global markets. This propagates up and down the chain as humans adapt and respond to this variability. Actors continuously change their behaviour to dampen negative effects and to take advantage of opportunities. Actor behaviour may also be uncertain. Fishers are notorious for finding innovative, legitimate ways around regulations. Like its drivers, much of the dynamics are unpredictable, and governance systems must also be dynamic to adapt to such uncertainty.

In local human systems, there is increasing appreciation of the importance of understanding how fishers interweave fisheries activities with other livelihood components. Complex livelihood strategies incorporate activities such as foraging for firewood, taxi driving or providing labour for construction and agriculture. Recent attention to livelihood strategies has sharpened awareness of gender issues. Past development planning in fisheries and aquaculture generally concentrated on the roles and capacities of men. Prior to the 1970s, women's roles and contributions were neglected and remained invisible, but in recent years, these have increasingly been documented and emphasised.

Scale Issues

Much of the diversity, complexity, and dynamics of fisheries arise from scale-related issues that can be found everywhere in fisheries and that must be reflected in governance. At all points in the fish chain there are processes taking place on different spatial, temporal, and organisational scales. The implementation of governance at the appropriate scales is one of the 'ocean governance principles' proposed by Costanza et al. (1998). Governance at multiple scales may be required for a single resource type.

For example, marine protected areas may require local-scale governance, possibly through co-management, but should also be consistent with a national level management plan and may also be much more effective if implemented as part of a regional network. Similarly, unless all interested states participate in the management of migratory tunas within a region, management is likely to fail. However, localised spawning areas may require special attention at the national or even local level for protection from fishing and/or pollution. In both cases, action at only one scale level is unlikely to be successful, therefore upward and downward linkages among the scales are essential.

Recent emphasis on ecosystem health has led academics and policymakers to focus on the scale of ecosystems and how to manage different scales so as to minimise mismatches between ecological and jurisdictional boundaries (see chap. 4). Taking ecosystems as the point of departure, attempts are made to identify the most appropriate political and administrative scale, and the measures needed. In view of the current severity of the resource problem, the ecosystem perspective may be the most relevant. However, social, economic, technical, administrative, and political units also have scale dimensions that are relevant for governability. Ethnic boundaries may, for example, be just as important for governance as the boundaries of ecosystems, as they define the parameters of the group willing to cooperate. The 'matching' of scales is thus an important consideration in any fisheries governance effort.

Another scaling issue for governance is the distribution of responsibility and functions among national and regional organisations (Sydnes 2001b, 2002; Haughton et al. 2004). There may be tension as well as collaboration in the linkages between these levels, because regional institutions must be supported from national funds, usually at the expense of national institutions. Scaling of governance initiatives up from local to global, or down from global to local, is often also challenging owing to weak inter-scale linkages and scalability of concepts. The FAO Code of Conduct for Responsible Fisheries (CCRF) is a powerful tool for fisheries governance reform, agreed upon by most countries (FAO 1995). Despite the production of several guidelines, national level implementation is slow, however, owing to difficulty in translating the concepts and required actions to the local level.

There are many other examples of scale-related problems in fisheries, for example, between national fisheries management, which usually operates at the scale of the entire country, and conservation initiatives, e.g., protected areas, which are usually local. The resulting mismatch in scale of planning and implementation often leaves these two activities disconnected, or even in conflict. Classically, time-scales of political, biological, and developmental processes are mismatched. Politicians typically operate on a four- to five-year time-scale whereas horizons for resource recovery from depleted states and results from people-based approaches to development are usually much longer.

It is 'All or Nothing' – Holism and Balance

Effective governance requires attention to the part that each of the three orders – day-to-day management, institutional governance and meta-governance – plays in the whole. Upward and downward linkages between the orders are essential to integrate them into a governance system. Meta-level principles and concepts that are not supported by institutional arrangements and problem-solving processes are only an intellectual exercise. Unless informed by real institutional issues and practical problems, the meta-level may be irrelevant to the lower levels. It has already been made clear that a problem-solving level that is uncoupled from principles and institutions is largely reactive and may even on different occasions react differently to the same problem.

Governability of the Governance System

The overarching message of this volume is that a governance system has many dimensions and linkages, both internal and external to the system, and that effective governance must examine and accommodate these dimensions and linkages. This should be explicit and systematic where possible, but governance in the context of the diversity, complexity, dynamism, and unpredictability of the fish chain requires more. It requires systems that are resilient and that can self-adapt by learning through interaction. For many, the terms 'fisheries management' and 'fisheries governance' may be synonymous. One important message of this book is that fisheries governance is conceptually broader in many ways than fisheries management as commonly practiced and written about. The difference between the two may account for much of the failure of conventional fisheries management. Two key aspects of the difference are highly interactive stakeholder partnership and self-adaptation through learning oriented feedback.

Problem-Solving Capacity

Problem-solving should start with problem perception, definition, and communication. Making this first step explicit is important, as it widens the opportunities for input into solutions. Communication among actors is essential for this process and differences in capacity and perspective will require special attention (see box 17.1). Kooiman (2003) provides guidance on how to define problems by starting with the key actors and gradually expanding the circle to include all actors. Stakeholder analysis is an important tool in this process. The governance approach builds on stakeholder analysis, but takes it a step further. Using the concept of the fish chain it first identifies actors with a stake in fisheries, then goes on to determine if these stakeholders are also governors, i.e., whether their actions have governance implications, and the extent to which they have partnerships and

interact. Stakeholder analysis is thus expanded to become 'governor analysis'.

Box 17.1 Problem perception is problem-solving

Perceptions are inevitably comparative and relative to vantage point. Therefore, problem definition is greatly facilitated when participating actors have similar vantage points for temporal and spatial comparisons. Local fishers are seldom aware of the broader spatial picture, especially when it includes other countries, but often have a longer temporal perspective than government technocrats, particularly where traditional knowledge is rich. Technocrats are vulnerable to the problem of shifting baselines as each generation sees only as far back as the government institutional memory, which is often short (Pauly 1995). This is problematic when, as at the World Summit on Sustainable Development, ecosystem principles come to the fore in fisheries governance and ecosystem restoration becomes a target. In most cases, we can only guess at the target state (Jackson et al. 2001). Traditional knowledge may be critical in setting appropriate ecosystem restoration targets.

Source: Authors of this chapter

Problem definition is an iterative process. Fisheries managers will recognise this as the typical management planning cycle (McConney and Mahon 1998; Die 2002). The problem is first outlined in rough form, then its complexity and dynamics are assessed before returning to refine the definition. We have spent considerable time on problem-definition because it is often downplayed in the problem-solving process, due to the desire to move quickly to solutions. The issues discussed in problem definition set the stage for the rest of the process. Therefore, issues of different perceptions of time and space, power differences, empowerment and power levelling must carry through to the stage of identifying solutions.

The second stage of problem-solving is identifying alternative solution options. It is important to remain open to the possibility that solutions may emerge from group process when each actor is seen to have a unique contribution, or part of the puzzle. This part of the process will be guided by principles such as those in the CCRF calling for the use of 'best available information' and stating that action should not be 'delayed due to lack of information'. The latter precludes the no-action option. Precaution is also expected to be an important principle in developing solutions. These ideas indicate that hard choices in fisheries governance will often have to be made in situations where there is low information availability or where information is not agreed upon by all parties. When the way forward is not clearly defined by technical information, choices are best made by consensus, as this increases the likelihood of compliance. But the time required to reach consensus involves compromise and takes longer to achieve.

Images, Instruments, and Action

The governance elements – images, instruments, and action – provide a structured way of looking at problem-solving and opportunity creation. *Images* are an essential component of structured human activity. Without them, governability can be substantially diminished. Images are mental models of how the world or some part of it presently functions, or of how the world should be – often referred to as visions. In conventional control-based management, images are developed by individuals or small groups and are seldom communicated to those who are affected. For instruments and actions based on images to be effective, the images should be articulated as fully as possible and should be communicated among all actors so as to be commonly understood. Images are abstractions that will usually be from the perspective of a particular actor. Therefore, sharing allows other actors to assess the validity of the image from their perspective and to add to or modify it. Then it becomes a shared image. A shared vision is a very powerful image that can inspire change (Harrison 1995). Recent trends towards developing shared images require the involvement of many actors. This leads to methodological and logistical problems of how to engage them all in a single transparent process (see box 17.2).

Box 17.2 Working with many actors using group process (participatory) methodology

Working in groups with many actors that have various perceptions is an important issue for the governance of complex systems. When actors are engaged individually or in small groups by a lead agency that then 'puts it all together', there is the danger that the outcome will be biased, or seen as biased, by the perception of that agency. Image formation in groups of more than a few people requires group process methodology, especially when the image is perceptual rather than technical. Each actor is seen as having a piece of the picture and the process is to assemble the pieces to reveal a complete image.

Group process methodology is developing steadily (Holman and Devane 1999). Practitioners, referred to as facilitators, are professionals in their own right (Schwarz 1994). Their role as custodians of process who are impartial to content is increasingly appreciated. The literature on this topic is growing rapidly and organisations such as the Institute of Cultural Affairs (www.icaworld.org) and the International Association of Facilitators (www.iaf-world.org) are dedicated to group process facilitation.

Professional facilitation can play an important role in reaching agreement on process and ensuring adherence to it. However, professional facilitation services can be costly and may be beyond the financial scope of day-to-day management problem-solving. A way around this is to build facilitation capacity and awareness among actors, both governmental and non-governmental. Actors can take turns at facilitating, while others remind them that in this role their focus is on process rather than content.

Source: Authors of this chapter

Instruments include existing institutions, plans, and information, inter alia. Institutions provide a framework within which to realise goals as well as a toolbox to address situations, and are an essential component of governability. Institutions may be formalised or informal in nature. Formal institutions are most common in government/state activities. Informal institutions are most common in civil society. Market institutions tend to vary more in type depending on their size and on the purpose of the organisation. A national fisheries act is a dominant governmental instrument in fisheries. A good fisheries act gives effect to the major principles or images, but does not prescribe action in such detail as to pre-empt flexibility. Flexibility of action is achieved by giving an individual (usually the minister) or, less often, a group of individuals such as a fisheries management committee the power to regulate within parameters established by the act.

An issue for fisheries governance is whether institutions should be formalised. There are many arguments in favour of formal institutions with appropriate organisational support. Transparency is among the foremost of these. As the numbers of actors and levels of organisation that are meaningfully involved in fisheries governance increases, the importance of communication of the institutional and organisational arrangements and processes to all actors increases. Formal institutions facilitate communication with diverse actors, enable strengthening capacity to participate, and provide a basis for legitimate representation. They can be an important component of the power-levelling process.

Rules and organisations that are poorly matched with the problems that they are intended to address may hamper more so than enable problem-solving. This is in part because institutions may take on a life of their own, with much of their energy going into self-perpetuation, often accompanied by resistance to change and inability to adapt. Therefore, institutional relevance should be evaluated periodically and reforms carried out where necessary. Alternatively, adaptive processes can be institutionalised and built into the organisation, thus creating a 'learning organisation' where change is continuous and integral as will be elaborated upon later in this chapter.

State organisational structure and function are particularly important components of institutional design for interactive governance. There has been little attention to whether government organisational structures are appropriate to problem-solving in fisheries. The conventional fisheries department has developed to serve the needs of large-scale (centralised), usually temperate, developed country fisheries based on large unit stocks of high total value. It has a wide range of management and development functions that include fisheries technology, assessment, advice, and enforcement. Skills to meet these needs are assembled in units that interact according to standard processes: data are collected and analysed, advice is developed, and regulations are formulated, (or where necessary laws amended) made known, and enforced. Conventionally, the fisheries department has acted as the major, sometimes the only actor, in these processes.

Most fisheries are not of the type upon which the above structure has evolved. They are small-scale (decentralised), tropical, developing country

fisheries based on numerous small unit stocks of relatively low individual value (but high aggregate value). For fisheries governance in such countries to better match the problems they must solve, technical solutions to fisheries problems need to be de-emphasised and more emphasis needs to be put on people-based approaches (Mahon and McConney 2004). Managers would be more oriented towards improving group dynamics and building effective processes, thereby bringing about the desired changes (Weaver and Farrell 1999).

It is questionable whether a conventional fisheries department structure is appropriate for problem-solving even in large-scale fisheries. An alternative fisheries department structure consistent with an interactive governance approach would be much less technically based (lower demand for data and analysis) and much more facilitative. The key skills would be planning, project development and management, mediation, and facilitation. These are seldom taught in natural science or technical training programmes (Allison and McBride 2003, Mahon and McConney 2004).

The fisheries management plan is recognised as a powerful instrument for drawing actors into a commonly agreed framework. Effective governance will require a plan that goes beyond the usual scope. It should reflect principles, outline strategies, identify roles, and specify actions and information flows at all relevant scales. The planning process is as important as the output. It is in the process that much information is shared, values communicated, and agreements reached. Here again, for interactions to be effective and actors to feel included, group process methodology can be important (see box 17.2).

Planning enables actors to participate appropriately, knowing what is expected of them, and also to address capacity deficiencies that may affect their ability to participate effectively. Although many developed countries have well established, sophisticated planning processes in place, documented guidance on how to approach planning for fisheries is only recently emerging (e.g., Berkes et al. 2001; Die 2002). This has left a fisheries governance gap in a large number of countries, mostly tropical and developing.

In planning, it is important to distinguish between enabling action and implementing action. Examples of enabling action include: engendering political will, building organisational capacity, promoting leadership, drafting regulations, etc. Lack of political will is often cited as a main factor influencing the failure of fisheries management. Considering its notoriety there has been surprisingly little analysis in fisheries of what it is and how to influence it. Such analysis is basic to assessing governability (box 17.3).

Implementing action may include a wide range of activities such as needs assessment, data gathering, analysis, quota-setting process, monitoring, and enforcement. We will spend the least time on this type of action, as it will be most familiar to readers who are involved in fisheries management. The literature on fisheries management is most comprehensive in the area of implementation. The many publications of the Food and Agriculture Organization (FAO), especially its series of guidelines for the CCRF, provide a wealth of information on implementing management

(e.g., FAO 1997b, 1999d; Cochrane 2002). Numerous other volumes emphasise various aspects, such as the role of stock assessment (Hilborn and Walters 1992), management targets (Caddy and Mahon 1995) and co-management (Berkes et al. 2001).

Box 17.3 About political will

Typical perceptions are that enlightening politicians and intensive lobbying are the main means of influencing political will. Another perspective might place more emphasis on activities aimed at enlightening and empowering voters, whom politicians will seek to please, whether they are themselves enlightened or not. This channel for influencing political will is bottom-up through the electoral process. These approaches are the standard fare of democratic politics. There is another channel for influencing political will that has perhaps not been explored as fully as it should be. This is the role of the government fisheries department. Appropriately structured fisheries departments adopting a serious, documented, custodial approach to participatory fisheries management planning with clear principles for guidance can serve to reduce much of the political expediency or inaction that presently characterises fisheries management. This burden can also be shared to some extent by non-governmental actors who participate in governance processes. Seen from this perspective, there is a substantial role for government departments in influencing political will with the support of other actors.

Source: Authors of the chapter

Improving Institutional Capacity

A major challenge in fisheries governance reform is to promote governability through the development of organisational forms that draw the organisations of all the actors into a commonly understood and agreed framework. Such integration is generally a slow process requiring commitment to structured participatory process, diversity programmes, capacity building and information transfer. Organisations are established for the implementation of institutional arrangements at the problem-solving level. Organisations such as government departments are formed within the conventional fisheries institutional framework. Others, such as non-governmental organisations (NGOs) and companies, may form within the framework, if it is progressive and comprehensive enough to accommodate them, or outside it, in another institutional framework, if it is not. When outside the fisheries framework they may form in reaction to it, if there are deficiencies in it, e.g., conservation NGOs or fisherfolk organisations, or independently in reaction to opportunities, e.g., private companies.

One of the important issues in bringing together organisations and institutions with different origins is the question of congruence. Congruence,

or the lack thereof, may affect interplay in various ways. There may be incongruence at the level of knowledge and perceptions. Incongruence may also emerge in goals or objectives, or in the methods to achieve a particular goal. In South India, fisher methods to ensure compliance with rules – such as corporal punishment and social ostracism – are incompatible with 'modern' governance (Bavinck 2001). Congruence, however, is not an absolute; it can be worked toward starting with an inventory of similarities and differences, and suspension of value judgements. Co-operation is smothered from the inception if one organisation (such as government) or set of institutions (such as constitutional law) is considered to be 'better' than the other.

It is worth noting that there are many situations where the *de jure* arrangement for fisheries governance is government control, but the *de facto* arrangement is that for all intents and purposes control has been assumed by non-governmental stakeholders. Examples of the latter situation are found in remote rural areas and islands where the arm of government control does not reach. This is more likely in places where there is traditional management and government control is relatively recent, perhaps originating with colonial rule.

Although ultimate responsibility for governance of public resources usually lies with government, there is considerable scope for civil stewardship involving both the private sector and civil society. A governance approach to fisheries would de-emphasise government control while emphasising civil stewardship and empowerment. It would recognise and promote the roles and responsibilities of the many different actor groups. The present view is one where many non-governmental actors perceive governance as largely being the domain of government.

An effective fisheries governance system will comprise a mosaic of governance styles. The problem facing those who would establish such a system is to determine and communicate which styles are appropriate in which circumstances. A hierarchical style may be appropriate within certain types of organisations, e.g., government or private sector, but not others, e.g., civil society associations; and will seldom be effective between organisations, e.g., government to civil society. There is the need for agreed formal or informal rules regarding what styles are appropriate in various situations.

Meta-Governance

Meta-governance is where overarching principles and values about the aims of fisheries governance, and in particular about how it should be structured, arise and are explicitly articulated. As principles vary from different actor perspectives, articulation is essential to guide the institutional and problem solving levels (Rayner 1999). It provides transparency and makes the underlying principles clear to all actors. Institutions and day-to-

day management thus need to be structured within sets of meta-level principles that have been made explicit.

Chapter 12 and 13 discusses the available bodies of principles relevant to fisheries today. The CCRF is one of the most significant hereof. Principles relating to sustainability and conservation of the resource base are well represented in the CCRF. Principles pertaining to transparency and inclusiveness are less prominent. Equity principles and livelihoods are present only in regard to inclusiveness and the need to pay special attention to small-scale fishers and fish workers. The principles with relatively low emphasis in the CCRF, those pertaining to social justice, tend to be highly cultural and politically sensitive. Therefore, it is not surprising that an intergovernmental organisation might find it inappropriate to be overly normative in this respect. The CCRF is also relatively silent on the need for governmental organisational reforms in structure and function, probably for similar reasons. Thus, while the CCRF represents a major advance in establishing principles at the global level, it is not yet a comprehensive set of principles for fisheries governance.

The Ways Forward

The nature of the fish chain and the understanding of governability developed earlier in this chapter point to three major directions for implementing interactive governance in fisheries. For a policy-related elaboration of these directions see the companion volume of this book (Bavinck et al. forthcoming).

a. *The first way forward* is based on the view that the presence of widely understood and accepted values and principles promotes governability, especially when formulated into a vision.
b. *The second way forward* is the need to be inclusive and to share in the responsibility of governance. Including all actor groups, promoting active linkages within and among them, and enhancing their capacity to interact will enhance governability.
c. *The third way forward* is based on the view that the capacity of a governance system to learn and adapt will enhance governability. A learning approach is perhaps the only way to cope with uncertainty and change by repeatedly monitoring progress and quality and navigating accordingly.

In this section, we develop these three proposed directions. The aim, however, is to communicate a perspective about how to undertake the journey towards good governance, rather than to provide a how-to-do-it manual. Our hope is to encourage practitioners to set out on this journey, even if the way is not clear in its entirety. Improvements in governance, which includes institutional and organisational change, are iterative, adaptive processes during which change agents operate according to and are guided by certain principles or values. Often the next steps reveal themselves only

after the process has reached an appropriate stage of maturity. The target or goal, which will be different for each situation, may not be in view. What is important is that those seeking to improve the governance of fisheries have a strong sense of the direction they need to go in, to get a better view of the target.

Principles and Values as a Foundation for Fisheries Governance

The first direction proposed by the interactive governance perspective highlights principles and values. It does so in the belief that principles and values structure governance, need to be articulated, and are essential elements in developing a vision for a fishery.

What are the obvious benefits or value added by placing values and principles centre-stage in fisheries governance?

- Principles and values give structure to governance. They provide a value structure guiding fisheries governors in assessing where fisheries are, where they should be and what means can be used to get them there.
- Values and principles, if agreed to and explicit, help make hard choices easier for governors. They provide a value frame that helps governors make choices between two acceptable but conflicting options by suggesting the preferred option on the basis of a higher level of logic. It also makes decision-making an institutional rather than a personal act, thus making avoiding hard choices unacceptable.
- Shared principles serve to increase the probability that partnership will evolve in the interest of all stakeholders, present and future. They serve to increase governability.

We recognise two types of principles and values: substantial and procedural. Substantial principles and values give direction to the development of images that drive problem solving and opportunity creation, and of visions that drive the building of institutions (box 4). Procedural principles and values guide the process of decision-making and interaction. The latter are crucial as interactive governance does not prescribe particular goals or objectives, but is largely about process.

Too often governance is concentrated exclusively on goals and means. This often follows from the urgent nature of events in fisheries and the need to act rapidly to resolve crises. The underlying and implicit values, norms, and concerns in fisheries are often concealed, not brought out in the open where they can be discussed rationally and democratically and then incorporated into a vision.

Chapter 13 posits a set of principles that we suggest are universal and should underpin governance in all times and contexts. At the same time,

Box 17.4 Some visions developed for fisheries

Articulated visions for fisheries are few, but one presented for small-scale fisheries by Berkes et al. (2001) and adapted by the FAO Working Party of Small-Scale Fisheries (FAO 2004b), provides a scenario for the benefits of a well-governed fishery:

'The vision for small-scale fisheries is one in which their contribution to sustainable development is fully realised. It is a vision where:

- They are not marginalised and their contribution to national economies and food security is recognised, valued and enhanced;
- Fishers, fish workers and other stakeholders have the ability to participate in decision-making, are empowered to do so, and have increased capability and human capacity, thereby achieving dignity and respect; and
- Poverty and food insecurity do not persist; and where the social, economic and ecological systems are managed in an integrated and sustainable manner, thereby reducing conflict' (FAO 2004b).

Clearly such a vision can readily be adapted to other types of fisheries and to community, national, or regional levels. It speaks loudly to the complexity, diversity, and interactions discussed in detail in previous chapters. It also reminds us that fisheries are integral to the fabric of the lives of many millions of individuals globally.

The vision for small-scale fisheries presented above illustrates the benefits of a well-governed fishery. It is general but clearly communicates a set of values, as does the vision for Canada's fisheries articulated by their Department of Fisheries and Oceans as one of 'Safe, healthy, productive waters and aquatic ecosystems, for the benefit of present and future generations, by maintaining the highest possible standards of service to Canadians, marine safety and environmental protection, scientific excellence, conservation and sustainable resource use'. At a more local level, Barbados' sea urchin fishers developed a vision of their fishery that communicates their value system for the fishery, including strong components of sustainability and cooperation (below).

The vision of Barbados' sea urchin (sea egg) fishers for their fishery

Vision element	Overview
Sea eggs back!!	A recovery to an abundance of sea eggs from year to year.
Laws and enforcement in place	Sea eggs to be protected through regulations and enforcement including options such as a five-year ban, shorter fishing season, licensing for fishers, and fines and penalties for violators.
Fisherfolk organisation in place	Fishers formally organised, working with stakeholders, and practicing co-management with government.
Pressure against polluters	Taking a stand against pollution.
Research and development	Using research to improve the industry.
Education and training organised	Providing education to fishers and the public about proper harvesting.

Source: FAO (2004b), Berkes et al. (2001), Mahon et al. (2003)

however, it is clear that these principles – like all others which may be added – are up for debate. Principles and values can only become the foundation of governance systems if all the actors agree and accept them, explicitly. Principles, unfortunately, are often implicit or assumed and are seldom brought to the fore, reviewed, and endorsed by stakeholders.

Dialogue is needed to help all stakeholders understand and adopt the principles that will guide their governance system. Participatory methodologies for developing a shared vision and principles are becomingly increasingly available. These methodologies are usually a component of an overall participatory strategic planning process. It is common to use a professional facilitator for these and other participatory processes. The facilitator is an impartial guide with knowledge and skill in selecting and applying the methodology that would be most appropriate for the situation. The partnership base must be built on principles that are pre-agreed. Enabling policy must be explicit about the underlying principles and must provide the platform from which stakeholders can discuss and decide on these principles with the assurance that they are supported at the highest levels.

Rather than start with a dialogue on the substantial principles that guide interactions and governance, however, it is sometimes useful to have an easier entry point. These are procedural principles that deal with the process of building and strengthening governance systems. Some common principles are included in box 17.5 below as an example.

Box 17.5 'TACIRIE' procedural principles

Transparent	- Everyone sees how decisions are made and who makes them
Accountable	- Decision-makers (both local and governmental) are procedurally and periodically answerable to those they represent
Comprehensive	- All interest groups are consulted from the outset in defining the nature of the problem or opportunity prior to any decisions about management being taken
Inclusive	- All those who have a legitimate interest are involved
Representative	- Decision-makers are representative of all interest groups
Informed	- All interest groups understand the objectives of the participatory process and have adequate and timely access to relevant information
Empowered	- All interest groups (women and men) are capable of actively participating in decision-making in a non-dominated environment

Source: Hobley and Shields (2000)

The purpose of the application of such principles is to assure that all stakeholders involved are treated as equals and have full access to the formulation of fisheries governance. Stakeholders may decide on various kinds of procedural principles. The acceptance of these procedural principles often paves the way by creating an environment wherein a proper dialogue of basic principles is possible and conducive.

Strengthening Capacity through Partnership, Inclusion, and Interaction

The second direction proposed by the interactive governance perspective to add value to and strengthen fisheries governance systems is to include the many actors and stakeholders involved through partnership. The challenges, concerns, and hard choices faced by fisheries governance are in good part generated by the large numbers of actors in the fish chain. These stakeholders, even if they are not formally involved in governance, already influence and impact on processes. Governments, who in most cases have seen themselves as the legitimate governors of fisheries, often consider the multiplicity of stakeholders as a bother and a nuisance to be dealt with through exclusion. On the other hand, the interactive governance perspective sees the many stakeholders as a potential resource to benefit governance and includes them in the process.

Some benefits of inclusion and partnership in a governance system are:

- the diversity and multiplicity of stakeholders increases the knowledge and experience available;
- involving stakeholders in governance ensures better problem definition and hence better images and visions;
- legitimacy of governance decisions is enhanced and could mean reduced costs of enforcement and compliance, which are usually the most expensive aspects of governance;
- the diversity and number of ideas and solutions have a higher probability of generating innovations;
- the diversity, interconnectivity and multiplicity of stakeholders working together may be better equipped to deal with the diverse, complex, and dynamic nature of fish chains;
- and, finally, it is just and it is the right of stakeholders to be heard and have the means to inform and influence processes that they are involved in or impact on.

Inclusiveness and partnership are not new to fisheries governance. In fact, they are propagated and practiced already in various forms: The CCRF emphasises that stakeholders should be included in the planning process; the Sustainable Livelihoods Approach insists on people-centredness and highlights the need to understand people's assets and livelihood strategies and to give them voice (DFID 1999); co-management of natural resources like fisheries strives to unite all stakeholders in an institutional framework; and Integrated Coastal Zone Management programmes emphasise the establishment of linkages and stakeholder participation. These attempts at broadening participation and promoting partnership are completely compatible with the interactive governance approach. Interactive governance strengthens these approaches by presenting an encompassing framework for understanding and addressing the problems and opportunities that take place in fisheries.

Stakeholder analysis is a tool that helps in identifying and understanding who the real actors and stakeholders are (Brugha and Varvasovsky 2000; Roy 2002). The understanding of stakeholders' involvement in the fish chain is important in bringing them into governance, using their competencies and capacities as necessary, and ensuring they are heard and have influence. Stakeholder analysis also seeks to determine the capacity of the groups and organisations to play their part in a participatory governance system as prescribed by the governance approach. This capacity or empowerment includes a number of facets: the extent to which they are informed, the level of membership in the organisation, the organisational strength of the group, leadership skills, problem-solving capability and the will to participate. There is a substantial literature on stakeholder assessment and several organisations that research and develop these methods such as the International Institute for Environment and Development (http://www.iied.org/forestry/tools), The World Bank (http://www.worldbank.org/participation/tn5.htm), and the UK Department for International Development (http://www.livelihoods.org).

Stakeholder analysis reveals where the system is deficient and points to a plan for addressing these deficiencies through capacity enhancement. It is not our intention to review or elaborate upon capacity building extensively here, but mainly to identify its importance in promoting the governance approach through enabling self-organisation. As such it should be a central component of policy aimed at promoting the interactive governance approach. As with any complex topic there are a variety of perspectives on capacity building. One perspective distinguishes between meta-, meso- and micro-capacity (CIDA website, capacity.org):

- *Meta-capacity* is the ability to develop a set of principles, a vision and a mission that guides the institution or organisation;
- *Meso-capacity* enhancement aims to bridge the gap between macro-policy levels and local communities (http://www.capacity.org Newsletter issue 22, July 2004) by addressing the capacity of the institutions and organisations that play an intermediate organising role in governance, translating meta-principles to their members and providing feedback from members into meta-capacity development (http://www.snvworld.org);
- *Micro-capacity* is associated with the ability of local organisations and individuals.

There is increasing emphasis on the multidimensional nature of capacity-building (Morgan 1998). It is perceived as much more than training involving a wide range of inputs that lead to the entrenchment of ways of doing business in the organisational culture (Krishnarayan et al. 2002). It also involves a substantial experiential component that can be referred to as 'learning by doing'.

The match between stakeholder capacity and responsibility is critical and should be approached iteratively so that stakeholders are not expected to assume unrealistic responsibilities. This can be addressed either by sharing

the responsibility until it can be assumed fully, or by redesigning management systems to be simpler and appropriate to existing capacity. For example, where technical capacity is low and there is little chance that it will be possible to pursue conventional management effectively, simpler, less technical approaches that are consistent with stakeholder capacity should be explored. The assumption of inappropriate levels of responsibility and/or perpetually striving to achieve unattainable capacity levels condemns the organisation to perpetual failure. It is becoming increasingly evident that much can be achieved in fisheries management by consensus and the use of simple indicators (Berkes et al. 2001).

The governance approach has a strong emphasis on interactions among groups and organisations. Whereas there may be the capacity to interact meaningfully, processes for interaction may often be lacking. Stakeholder analysis has conventionally paid less attention to interaction processes, to understand what blocks interaction and what promotes it. Therefore, there is less in the literature to guide this aspect of stakeholder assessment, e.g., IIED Power Tools Series(see Stakeholder Power Analysis. IIED. Draft June 2001: james.mayers@iied.org). Assessment of interactions would seek to determine the presence of processes and channels that facilitate interaction, including the amount and type of interactions. Approaches could include social network analyses via the use of flow charts or matrices that allow the inventory and description of interactions e.g., formal or informal, positive or negative, strong or weak, etc.

Promoting interaction through networking is an important aspect of capacity building. Similar changes in operational style are taking place in the private sector. There may be much to learn about practical relationship building strategies from business approaches to forging collaborative networks with employees, customers, suppliers, and communities (Svendsen 1998). The diversity of networking or communication styles must match the diversity of stakeholders so that all groups have the opportunity to communicate in a style that is comfortable to them. Therefore, the burden of change for improved networking and interaction is distributed throughout the network, not just on a few stakeholder groups perceived as having low capacity to interact. Human diversity, which has been the source of much conflict and ranging from familial to global scales, is increasingly seen as a potential resource to be tapped rather than a problem to be solved (e.g., Baytos 1995). When the entire fish chain is considered, one sees considerable scope for enriching linkages among all levels through planned diversity awareness programmes and transfer of values, knowledge, and skills (e.g., Pollar and González 1994; Hetherington 1995).

Learning to Adapt and Assure Quality

The third direction suggested by the interactive governance perspective is to build learning into governance processes. Fish chains are by their very nature unpredictable. Dealing with unpredictable systems is like moving

through uncharted territory. The only way to function in such systems is to constantly monitor where one has been and where one has reached, and then to reflect on the progress and to move forward guided by the learning. There is an increasing focus on integration of learning and knowledge management systems into sustainable development initiatives (http://www.infodev.org/, http://www.sdnp.undp.org, http://gkaims.globalknowledge.org).

A strong learning system is essential to the interactive governance approach, and yields substantial dividends:

- If fish chains are indeed uncertain and unpredictable, frequent feedback is essential.
- It provides the flexibility to adapt to changing conditions based on the best available information from the widest possible range of actors.
- It allows one to profit from the experiences of other governors in other times and places.
- It builds up an institutional memory, to fall back upon and learn from, as different from the memories of individuals in an institution (which are often not accessible to others).
- It increases the effectiveness and efficiency of processes and thus ensures quality.

Interactive governance is not unique in emphasising the importance of learning systems (e.g., Folke et al. 2002). Monitoring and evaluation are used in most organisations (although they are not necessarily utilised as learning instruments). Still, one could argue that most organisations in the fisheries sector can improve the extent to which they 'learn' from experience as well as from their surroundings. As in other areas of governance and institutional strengthening, much of the initial work in this area has been done with a view to improving the functionality of organisations, usually by private corporations (e.g., Senge 1990; Collison and Parcell 2001). Adapting and extending these concepts originally designed for commercial and business operations to a system as complex as the fish chain will be a substantial challenge, as it cuts across private, public, and civil organisations as well as local, national, and international scales. Consequently, there is need for careful attention to issues of intra-organisational (intra-group) learning as well as inter-organisational (inter-group), system-wide learning.

Here, rather than try to cover all that has been written on learning organisations and systems, we will attempt to give the reader a perspective on what it means to develop a learning organisation. In doing so we draw heavily on the work of Peter Senge, a leader in this area, and on a few key texts such as *Learning to Fly* (Collison and Parcell 2001). In describing the five 'learning disciplines' that are core to the learning organisation. Senge et al. (1994) explain that these are lifelong programmes of study and practice.

The challenge is how to activate and enhance these disciplines within organisations and indeed with an entire governance system. There are a

variety of emerging perspectives on how this should be approached (e.g., Argyris 1991; Collison and Parcell 2001; Evans 2003; McElroy 2003) and a wealth of practical advice and methods (e.g., Belden et al. 1993 and Senge et al. 1994). Knowledge management, one practical perspective on developing a learning organisation, explores the wide range of styles and practices that can contribute to creating an effective learning organisation and emphasises that different styles are required in different situations (Collison and Parcell 2001). McElroy (2003) uses the 'knowledge life-cycle' to emphasise the dynamic nature of knowledge management. Collison and Parcell (2001) warn that knowledge management is '...not about creating an encyclopaedia that captures everything that everyone ever knew. Rather, it's about keeping track of those who know the recipe, and nurturing the culture and the technology that will get them talking'. Indeed, one may consider a knowledge management continuum ranging from knowledge capture at one end to connectivity at the other.

A focus on knowledge capture emphasises collection and codification of knowledge, databases, and access and distribution systems. There has been much emphasis on these types of systems in fisheries management, and they will continue to play an important role in increased availability of information to those who have previously had little access. Information 'capture' and distribution increase the 'informedness' of participating actors and empower them to participate.

At the other end of the continuum, connectivity emphasises investment of 'time and energy in the processes and technologies which stimulate connections between people' (Collison and Parcell 2001). This emphasis may include creating networks, building flexible teams to address specific issues, holding workshops, and developing and sharing a variety of tools for collaboration and group interaction. Emerging technologies make it increasingly easy to enhance connectivity and learning among people and organisations. The increased emphasis on facilitation of group processes also reflects the growing emphasis on connectivity as a significant component of a learning system.

A learning organisation should have processes in place to allow learning during all stages of implementation: before doing, while doing, and after doing. These three types of learning are different. *Learning before doing* involves asking the question 'has anyone else done this before'. Usually the answer is yes, or sufficiently close to it that there are lessons to be learned from what others have done. This provides the basis for a plan that adapts experience from others to the present circumstances using situation specific knowledge. *Learning while doing* involves asking questions about how the implementation is going and whether the plan needs to be adapted based on unforeseen circumstances. *Learning after doing*, involves active review of what was done, the ways in which it differed from what was planned or expected and why (Collison and Parcell 2001). A learning organisation has mechanisms to capture and share the knowledge acquired at all stages.

In order for the system to be a learning system there need to be indicators to measure system improvement and to check the learning feedback.

One aspect of assessment of these benchmarks is whether the system partners agree that they are improving (ideally the system would include all partners whose assessment matters). The learning loops need to be integral to the system, not an external check. When the learning system has become embedded in the system, there is a shift from unconscious incompetence to unconscious competence (Collison and Parcell 2001).

Implementation Issues

Fisheries governors who seek to put into practice the concepts and approaches described in this volume will find themselves having to address several issues with political decision-makers and other stakeholders. Prominent issues relate to generating the will for change and also to planning for change. They include evaluating how much risk there is in undertaking change, who is responsible for change, how long it will take and how much reorganisation to existing systems will be required for effective change. Here we provide some short answers to these issues. They are addressed more fully in the companion volume (Bavinck et al., 2005).

Diverse, complex, and dynamic systems are almost impossible to predict and control. It is increasingly clear that controllability of the fish chain is a fallacy, as evidenced by the numerous governance failures in fisheries (Charles 2001). Therefore, much of the apparent risk in moving from a command and control approach towards an interactive governance approach may be more perceived than real. This will be particularly so where the command and control approach is deeply ingrained. The perceived loss of control for governments that will accompany the process of encouraging and allowing stakeholders to take greater responsibility and to play a more active and decisive role in governance will naturally engender some reluctance to try interactive governance. However, the call for alternatives to the conventional command and control approach in fisheries is also increasingly frequent, strident, and difficult to ignore. In any change process, particularly one that involves sharing power, there will be wrong directions taken, and several iterations may be required to 'get it right'. However, the risks associated with pursuit of the interactive governance approach can be reduced by measures that enhance the governability of the system. There will be no guarantee of success, but an increased probability of success.

Knowing who is responsible for promoting and enabling interactive governance of fisheries systems is important given the number of stakeholders involved. In most countries, fish are public or common property and fisheries governance is perceived as the responsibility of the government. Although governments may have the greater responsibility to promote the interactive governance approach for fisheries, the scope of the task is too large for governments to adequately undertake on their own, and it is therefore the responsibility of all other actors to take leadership roles for implementing interactive governance. When governments lack the will, ability, or flexibility to change from the conventional command and control approach,

non-governmental actors have an even greater responsibility to act as change agents.

Moving from present systems to strengthened governance will be a long-term effort requiring that people and organisations change the way they look at the world and think about problems. It requires a shift towards collective stewardship (Block 1996). Actors' approaches must then change to include new ways of doing and they must be convinced that they are empowered to change. This type of widespread responsibility or stewardship will take persistent extended nurturing to become culturally ingrained (Blanchard et al. 1998). Studies of participatory management of marine protected areas concluded that sustained assistance inputs for ten or more years are required for the concepts and processes to become an integral part of the organisational culture (Pomeroy et al. 1997). Clearly, even longer time-frames will be required to establish throughout the entire fish chain a comprehensive governance approach based on principles of inclusiveness, transparency, and sustainability. Note, however that the types of changes in governance being suggested in this volume are consistent with global trends towards inclusiveness and increasing involvement of civil society in governance (Burbidge 1997). This is fuelling and being fuelled by a rapidly growing, readily accessible literature on organisational change (Senge et al. 1994, Kotter 1996).

Convincing people and organisations that are comfortable and benefiting from the *status quo* to change will require dialogue, persuasion, the right circumstances, and a carefully chosen set of incentives and disincentives. New functions and ways of doing will clearly require the restructuring of institutions and organisations in the fish chain. This will have different implications and challenges for different stakeholders. At the level of fishers, there will be the need to get organised for collective, representative participation in governance (e.g., McConney 1999; Kurien and Paul 2000). This will, of course, necessitate the building of capacity and competencies. At the level of government organisations, changes towards greater emphasis on people-oriented skills will be required. Instilling stewardship and enhancing interactive governance will require a fundamental change in leadership style from the conventional leader who leads from a position of strength and charisma to the leader who is a facilitator or 'superleader' – a leader who helps others to lead themselves (Stanfield 2000; Manz and Sims 2003).

Conclusion

There is much yet to be done with regard to developing the interactive approach to governance. Structured approaches to assessing governability must be formulated, including easy-to-apply rapid appraisal techniques that encompass all its dimensions (e.g., Pitcher 1999). It is hoped that this volume will inspire a wide variety of fisheries governance interactions that will lead to a substantially increased body of knowledge and experience

about fisheries governance. We are convinced that by starting with the three ways forward described above, fisheries governors will come to better grips with many of the factors that undermine and bedevil current efforts to achieve sustainable, productive fisheries.

Strategies that enable and enhance governability include: development of shared principles and values as a basis for self-organisation; inclusion of all stakeholders, particularly by strengthening their capacity to participate; and enhancing interactions, especially feedback for learning. Principles and values give structure to governance. If agreed to and explicit, they provide a value base that can make hard choices easier and transparent. Involving the full diversity and multiplicity of stakeholders in governance provides many benefits, notably legitimacy and ownership. In the face of the uncertainty and unpredictability that characterise fish chains, feedback interactions contribute to system learning and provide the flexibility to adapt to changing conditions based on the best available information from the widest possible range of actors.

The challenges presented and discussed in this chapter should not deter fisheries governors from engaging in the change process towards interactive governance. Change agents are increasingly appreciating that the horizons for societal change are distant ones. For changes of the magnitude and importance of fisheries governance reform to happen on a scale that will matter, it is important that they be started as soon as possible and that the necessary processes be sustained for long enough to become established and accepted. One thing is certain: unless new approaches are pursued, there will be widespread failure to realise the benefits from and achieve sustainability of a large proportion of the world's fisheries.