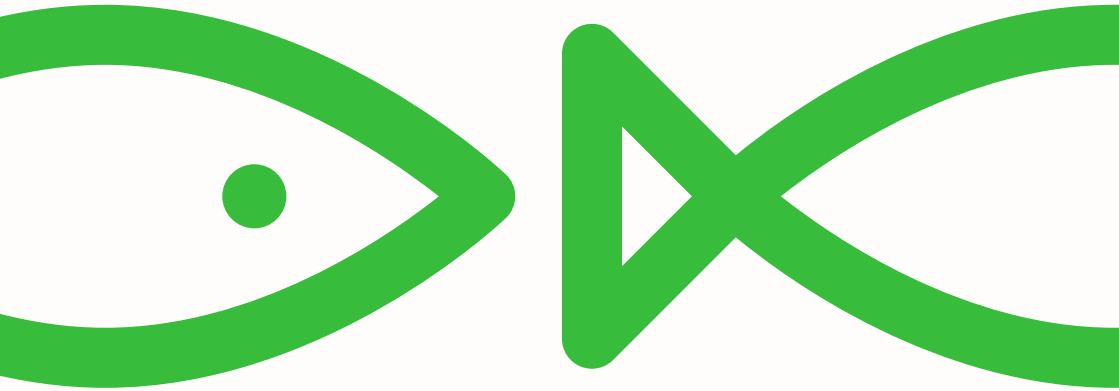
Hoang Viet Thang

RETHINKING FISHERIES GOVERNANCE

THE ROLE OF STATES AND META-GOVERNANCE



Rethinking Fisheries Governance

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The Role of States and Meta-Governance

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Abbreviations

AFCC	Area Fishery Coordinating Committee
CPR	Common pool resource
DARD	Department of Agriculture and Rural Development
DOFI	Department of Fisheries
FA	Fisheries Association
FAO	Food and Agriculture Organization
FCA	Fishery Cooperative Association
GOV	Government of Vietnam
Gov	Government
IMOLA	Integrated Management of Lagoon Activities
IVQ	Individual vessel quota
JPY	Japanese yen
NCFA	Norwegian Coastal Fishers' Association
NFA	Norwegian Fishers' Association
NGOs	Non-governmental organizations
TACs	Total allowable catches
TTHSO	Thua Thien Hue Statistical Office
TURFs	Territorial use rights in fisheries
VGSO	Vietnam General Statistics Office
VND	Vietnamese Dong (1 USD ≈ VND 16,000)

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CHAPTER 1

Introduction

Global Fisheries Management Challenges

The fisheries sector plays an important role in terms of food security, employment and income in many countries. Some 58.3 million people were engaged in the primary sector of capture fisheries and aquaculture in 2012. Since the mid-1980s, employment in that sector has grown faster than has the world's population. In 2012 it represented 4.4% of the 1.3 billion people economically active in the broad agriculture sector worldwide (up from 2.7% in 1990). The world's population increased by 75% from 1970 to 2005, while around the world, fishers increased by 178% (Kolding et al. 2014: 318). The Food and Agriculture Organization (FAO) estimates that, overall, fisheries and aquaculture provide the livelihoods of between 10% and 12% of the world's population (FAO 2014a: 6).

The contribution of fisheries to the global food supply is also significant. The global demand for fish is expected to increase by 0.5% annually as a result of increases in population size and economic development (Delgado et al. 2003). The fisheries sector provides the main source of protein for 16.7% of the world population's intake of animal protein and 6.5% of all protein consumed. Fish provide more than 2.9 billion people with almost 20% of their intake of animal protein, and 4.3 billion people with about 15% of such protein (FAO 2014: 4). According to the FAO, global capture fishery production reached 93.7 millionmetrictons in 2011 (FAO 2014: 5).

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Global fisheries management has witnessed many fisheries crises. In a world with an ever-expanding population, the question is how can we balance what we take from the seas and with keeping the oceans healthy. The global increase in fishing efforts has resulted in the overexploitation of valued species and the decline of fish stocks. In many parts of the world, fisheries are showing signs of being fully exploited or overfished, with production levelling off or declining (Watson and Pauly 2001). More than 85% of the world's fish stocks are now fished to full capacity, or are overfished (FAO 2012a). Global fisheries management faces the challenge of large increases in the demand for fish while fish stocks are declining. The global fisheries sector was shaken by the collapse of the Canadian northern cod fishery in 1992 (Hilborn et al. 2003: 360; Schrank and Roy 2013: 397). On 2 July 1992, Newfoundlanders were shocked to find that fishing of the northern cod stock, which had historically been one of the great fisheries in the world, had officially been banned by the federal minister of fisheries and oceans, Newfoundland's John C. Crosbie. Local fishers witnessed the total collapse of the fishery, which had been sustainably harvested for 500 years. Overfishing was the main cause of the cod collapse (Hilborn et al. 2003: 360).

As a consequence of the collapse, about 20,000 people lost their jobs and the economy of Newfoundland was severely damaged. Canadian taxpayers paid more than CAD1 billion per year to support unemployed fishers. The anger and chaos caused by shocked fishers was described as follows:

> Nobody who saw the Minister's press conference will ever forget the vision of angry fishers trying to enter the room while the police hustled Crosbie down a back staircase. The fishers were angry at losing their livelihood while being offered a derisory replacement income. (Schrank and Roy 2013: 397)

It is obviously important to get fisheries governance right. Decision-makers and resource managers are searching for better ways of managing fisheries. Fisheries management experts increasingly recognize that problematic management approaches are one of the main causes of fisheries resource overexploitation. The most obvious and commonly advocated global policy response to the fisheries crisis is to reduce fishing effort by cutting the number of fishers and boats in operation. However, when such an approach is unilaterally adopted by the state, its implementation is often challenged with rejection by fishers, and even their violent actions.

There is also a risk that an incomplete understanding of the causes of fisheries degradation may exacerbate the problem. In this critical context, thinking about how to create a win–win situation between the task of protecting fisheries resources and generating or maintaining a stable income for fishers who depend on fisheries resources is imperative. This requires contributions by both the state and fishing communities. They need to work together and share management responsibilities. However, how to do this properly and effectively is still a challenge for both self-governance scholars, such as Ostrom, and current co-management scholars.

Current Approaches to Fisheries Governance

Since the 1990s in fisheries management, the co-management concept has gained increasing acceptance among governments, development agencies, researchers and fishers as an appropriate arrangement of future fisheries management systems. Co-management is defined broadly as a governance arrangement whereby management responsibility is shared between the government and fishing communities (Pomeroy and Berkes 1997; Sen and Nielsen 1996; Nielsen et al. 2004; Pomeroy et al. 2010; Pomeroy and Rivera-Guieb 2006). Therefore co-management is the combination of state and associational actors co-managing a common pool of natural resources, such as fisheries. Co-management refers to a set of institutional and organizational arrangements (rights and rules) to define the cooperation among the state fisheries administration and relevant fishing communities and their fisheries associations. The essence of co-management is an institutional response as a result of a bargaining process among various groups with different powers to control the allocation of rights over resources and to gain representation for determining those rights (Nielsen et al. 2004: 156). One of the theoretical foundations of co-management comes from a set of ideas developed by Ostrom (1990) which challenge the "Tragedy of the Commons" (Hardin 1968) view of common pool resource (CPR) systems and support collective action in natural resource management as an economically viable alternative to privatization or top-down attempts at state regulation. According to theorists, co-management aims to increase the involvement of resource users and to empower them to make decisions in a more democratic and effective governance system. Also, the effectiveness of fisheries management is expected to increase under co-management arrangements because the acceptance of management measures is assumed to be more widespread when there is

greater involvement by users in the decision-making process, and when users' knowledge is included to enable the contents of management measures to be more appropriate and to better reflect local conditions (Pomeroy and Berkes 1997; Sen and Nielsen 1996; Nielsen et al. 2004; Pomeroy et al. 2010; Pomeroy and Rivera-Guieb 2006). However, the co-management approach and related research are still underdeveloped, especially in terms of engaging the state in supporting fishing communities in the management of fisheries resources over the long term in a sustainable manner. At the same time, the co-management literature on fisheries association-based management is also thin.

The main claim of this book is that although co-management has become a key means of fisheries management over recent decades globally, it has seldom been a success story in fully addressing collective action problems in fisheries management. Therefore the question raised here is why co-management still remains in many cases in a phase of trial and error. In answering, this book is designed to explore the theoretical foundations of co-management and provide critiques of the co-management approach. The underlying research supports the book's argument by investigating three case studies in which fisheries associations have been empowered to take responsibility in managing fisheries resources. The book assesses interventions by the state in support of fisheries associations with a specific focus on resourcing issues. A key aim is to contribute to and develop the existing global dialogue on the challenges to fisheries management and how the state can act to ensure the successful management of fisheries resources in partnership with fisheries communities. Accordingly, the book will extend the existing "self-management" account by Ostrom (1990) to explain why a country such as Japan, with strong state capacities and experiencing intense government interventions, has been globally recognized as one of the most successful in implementing fisheries co-management, while in Norway collective action via fisheries association activity has been established for a long period but is revealed as fragile when governments change governance strategies. The study will also focus on Vietnam, which has adopted fisheries co-management initiatives only since the mid-1990s. There, co-management has been strongly promoted by the state but is still limited, largely because the state has weak capacity in terms of resourcing. "The state" in this research includes governments, and numerous agencies and public bodies of administrative, legal, bureaucratic and coercive systems, that structure relationships between civil society and public authorities. The focus of this book is particularly on

mechanisms adopted by the state when working with fisheries associations to carry out management functions.

In searching for the development of cooperative behaviours among common-pool users, Ostrom (1990) conducted extensive empirical research in the 1980s that revealed situations in which resources were used sustainably by local user groups that could organize themselves to solve collective action problems, such as free-riding, commitment issues, the supply of new institutions and monitoring individual compliance with sets of agreed rules. She defines eight institutional conditions necessary for successful cooperative governance of the commons:

- clearly defined resource boundaries;
- congruence between rules and local conditions;
- affected people's capacity to modify the rules;
- available and accountable monitoring;
- graduated sanctions;
- conflict-resolution mechanisms;
- no challenges from external government authorities regarding the rights of resource users;
- small CPRs that may nest in a larger system with a similar structure.

Ostrom's approach sheds new light on specifying institutional conditions for local participation in managing CPRs. These principles help to meet requirements of governance of environmental resources, such as dealing with conflicts; inducing compliance with rules; encouraging adaptation and change; providing physical, technical and institutional infrastructure; and offering necessary information (Dietz et al. 2003: 1910). However, the eight institutional conditions are essentially a local or society-based approach and do not properly address the important role of the state in managing CPRs (Anthony and Campbell 2011: 287; Agrawal 2003: 250; Clement and Amezaga 2013: 145). Ostrom suggests that central regulation can prevent resource users from developing appropriate rules because individuals and groups often wait for the government to provide solutions to their problems. She assumes that "if someone else agrees to pay the costs of supplying new institutions then it is difficult to avoid the temptation to free-ride" (Ostrom 1990: 213). In contrast, Anthony and Campbell (2011: 288) argue that the state cannot be so easily ignored theoretically from the process of formulation of cooperative behaviours. According to Agrawal (2003: 254), "it is possible in principle, and perhaps

more defensible, to think of the effects of resource size or boundary definition as dependent on the state of one or more other variable".

In fisheries management, Ostrom's eight institutional conditions are referred to as key principles, and over recent years they have been widely adopted by many fisheries scholars in searching for factors which enable co-management to be long-lasting and successful in managing fisheries resources (Nielsen et al. 2004; Pomeroy et al. 2010; Pomeroy and Rivera-Guieb 2006). In line with Ostrom's approach, the co-management literature is largely society centric and, as noted, is underdeveloped regarding the role of the state in working with fisheries associations to manage fish resources. Even when co-management scholars combine aspects of state and community engagement (Pomeroy and Berkes 1997; Sen and Nielsen 1996; Nielsen et al. 2004; Pomeroy et al. 2010; Pomeroy and Rivera-Guieb 2006), the focus of co-management is on the capacity of fisheries communities and their associations. Accordingly, co-management scholars generally highlight tendencies of power-sharing and decentralization from governments for fishers. They often suggest that fisheries communities should play a central role in the governance processes, including establishing a system of rights and rules that are culturally and socially appropriate, forming management institutions capable of monitoring and enforcing this system, and conducting monitoring on a day-to-day basis. In co-management, fishing communities are often required to be involved in developing the capacity to resolve resource-related conflicts and making changes to the co-management system over time. To achieve those objectives, this approach requires that significant authority be devolved from central government to local communities. However, there is a gap between the theory and practice of decentralization (Berkes 2010: 492). Large-scale devolution within communities may cause problems of unaccountability and inequality. Local communities may create inequitable social systems that marginalize certain groups; they may be vulnerable to the problem of elite capture; and they may neglect the general public's interest in environmental protection.

It is striking that co-management scholars acknowledge the role of the state in fisheries co-management but see that role as equal to that of other actors in a horizontal link with fishing communities. For example, Pomeroy (2001: 114) suggests that the state, fishers and other actors, such as non-governmental organizations, researchers, coastal businesses and fishing-related businesses, can be involved in co-management arrangements in horizontal links. This view is widely accepted in current the body

of co-management literature. However, the approach underestimates the substantial role of the state in the overall settings for fisheries management. Scholars admit that "the lack of support from governments" restricts co-management initiatives (Nielsen et al. 2004: 155; Pomeroy McConney 2007: 64), but they nevertheless suggest that the state's role is limited to that of facilitator, providing legal and political support for co-management institutions at the local level (Nielsen and Vedsmand 1999; Pomeroy and Berkes 1997). The state is considered equal with other actors, such as scientists or those representing the public interest (e.g. environmentalists) (Sen and Nielsen 1996: 407; Pomeroy and Rivera-Guieb 2006: 18). Thus scholars suggest that governments should encourage communities to form their own co-management institutions rather than to rely on official government-sponsored organizations imposed from above (Pomeroy and Berkes 1997). This thinking requires governments to devolve authority to fishing community organizations so that fishers can effectively enforce the local co-management system. However, this society-based approach hinders our understanding of the substantial role that states can play in supporting fisheries community arrangements.

In fisheries management, cooperation between the state and fisheries associations as groups of users is sometimes possible and mutually beneficial because the "state is strong where private associations are weak, but it is also weak where they are strong". Therefore the relationship between the state and a user group can be a positive sum, or win–win, situation. When the state is strong, its capacities allow the possibility of success of collective action in the association because the association can make use of numerous resources made available by the state. When involved in such cooperation, fishers and their associations can benefit from being granted their exclusive fishing rights, from in-depth knowledge transferred from governments, and possibly from financial support by governments. In the context of fisheries management, knowledge can be categorized into two main systems: Indigenous and Western (Clarke et al. 2013: 90; Nursey-Bray et al. 2014: 110). The Indigenous knowledge is local, generated and transferred within a society (Clarke et al. 2013: 90). Western knowledge systems are scientific and open to many people from different societies (Nursey-Bray et al. 2014: 110). In this book, the term "in-depth knowledge" refers to scientific knowledge of the Western system. Moreover, fishers join fisheries associations on a voluntary basis, and the interests of fishers in the association are shaped by benefits which the association can provide. The state, with its resources and capacities, can

support the association in attracting and maintaining membership over a long period. In addition to its duties to its membership, fisheries associations perform their functions in a network of state and non-state actors. Here, the state can play a role in facilitating such interaction. States can also perform the function of a court of appeals when disputes arise within fisheries associations or when such associations are in dispute with other user groups. Where fisheries associations are strong, they can assist governments to implement policies on the ground. Working with fisheries associations can help the government to reduce its administration expenses. For example, local fishers can do the task of daily monitoring, which cuts the costs of this task by governments. It is very expensive to employ government officials as monitors, and frequently, when they are used, they cannot be paid well, often leading to corruption.

A New Approach Suggested by This Book

This book focuses on the role of the state in fisheries co-management. By engaging the state-centric notion of "meta-governance", it probes the functioning of common property institutions under the umbrella of the state and overarching governance structures as the state plays the role of the ultimate guarantor of governance arrangements. The study pays specific attention to the role of the state in creating contextual factors which lay a foundation for collective action to take place. Bell and Hindmoor (2009: 55) argue that governments are best placed to adopt this role because they often have the resources and legitimacy to oversee governance arrangements at lower levels. Governments are often able to use command-and-control mechanisms, such as legislation and coercion, and they deploy resources through compulsory taxation to help meta-governance arrangements (Bell and Hindmoor 2009: 55). The role of the state in meta-governance and in supporting governance arrangements is backed up by Fritz Scharpf (1994: 41). Jessop (2002: 15) agrees with the idea that a state can act as a meta-governor: by redesigning markets, making constitutional change, implementing the juridical reregulation of organizational forms and objectives, and managing the conditions for self-organization. In addition, states can orchestrate dialogue among policy communities; deploy a relative monopoly of organizational intelligence and information with which to shape cognitive expectations; serve as a "court of appeals" for disputes arising within and about governance; and assume political responsibility and accountability in the event of governance failure. This

view supports the idea that local networking, negotiation and coordination occur "in the shadow of hierarchy".

There are six functions of meta-governance: steering, effectiveness, resourcing, democracy, accountability and legitimacy (Bell and Hindmoor 2009: 47). Details of each function are discussed further in Chap. 3. Although there are various options for the state in a meta-governance role, this book will examine key issues related to the resourcing function since resources are identified as a key challenge for current fisheries management. The main argument of the three cases is that state resources can produce a substantial impact on the success of collective action in fisheries management, especially supporting fishing communities in coping with a high level of uncertainty regarding fish stocks. From the perspective of resourcing, the research argues theoretically that rather than being equal with fisheries associations and other actors in governance processes, the state can play a central role in such governance processes; and state capacities both institutional and relational matter in relation to the success of collective action by fishers via their associations. Accordingly, the three cases selected together highlight important support by states for fisheries communities, particularly fisheries associations in coping with fish stock decline crises. For example, fisheries cooperative associations (FCAs) in Japan are chosen by the state to manage Japanese coastal fisheries. A total allowable catch (TAC) for the offshore and coastal fishing areas is decided by the national government, and the division of the total quota for a particular FCA is determined by the prefecture. FCAs are allowed by law to allocate their specific fish quotas. They interact closely with the national, prefecture and municipal governments on a number of fishing-related matters, including design and implementation of management plans, approval of regulations, fishery projects, budgets, subsidies, licences and other rights.

In addition to the concept of meta-governance, to understand how the state can be central to such a network of actors in co-management arrangements, the book also discusses state capacities. State capacity can be defined in both institutional and relational terms. According to Bell and Hindmoor (2009: 67), both relational and institutional qualities are crucial for a strong state. Fiscal resources, policy instruments and legitimacy are other determinants of state capacity (Bell and Hindmoor 2009: 62). State capacity also has important relational components regarding the nature of the links between the state and society. Regarding relational power, to understand how governments can integrate and drive such

networks, the research refers to the structural approach to the study of policy networks developed by David Knoke (1990: 40). This approach helps to explain how an actor becomes central to a network thanks to its structural position and role.

The approach presented in this book is largely different from most current co-management scholars because its aim is to argue that rather than being equal to other actors, states are in fact meta-governors; and therefore, rather than being equal with fishing communities and other actors in fisheries co-management arrangements, the state with its significant resources often holds the central position in such networks. In addition, in the cases at hand, the study argues that state capacities matter in relation to the success of collective action by fishers in fisheries management. The main focus of this book is about how the state can carry out its meta-governance roles to ensure the success of collective action in managing fisheries resources. Specific issues that the book addresses include the following:

- It investigates the approach where the state use its resources to enable fishers to initially overcome collective action problems by forming fisheries associations.
- It asks how the state uses its resources to support fisheries associations, particularly with fish stock uncertainty, and what kinds of resource are required.
- It asks whether the state supports fisheries associations in the enforcement of fisheries rules and, if so, how.
- It asks whether the state provides fiscal support to fisheries associations and, if so, to what extent the fiscal support is important to the performance of fisheries associations.
- It tries to understand to what extent such resources are instrumental in the state's ability to meta-govern fisheries associations, whether the resources required to support fisheries associations are in hands of the state and, if not, whether the state can mobilise such resources

This work adopts a qualitative approach. As Berg (2009: 8) confirms, qualitative research can provide answers by exploring different community settings and how the inhabitants in these settings interact in various governance processes. The study used the documentary method to collect data, which enables me to examine the design and implementation of policies in past management practices. According to Sarantakos (2005: 298), this method is "the only source of information when studying past events". Furthermore, it is appropriate to the scope of my research because it

is cost-effective and provides quick and easy access to a range of high-quality data (Babbie 2004: 276; Bryman 2004: 202; Mogalakwe 2009: 15; Sarantakos 2013: 313). Semi-structured interviews were used to cover the gaps in the data collected by the documentary method.

May (2001: 182–183) points out that because a document does not independently report social reality, researchers must not only focus on documents but also consider the "political and cultural environment influences existing at the time of the creation of the text". The qualitative data were gathered through longitudinal studies of fisheries co-management in three countries. Data can be collected from three sources, as follows:

- Primary sources: government decrees, national constitutions and official documents from national ministries; official documents and annual progress reports from national and local agents; and official documents from fisheries associations.
- Secondary sources: scientific research works from the academic community, international organizations such as the FAO, the United Nations and the World Fish Center; and discussions in newspaper articles addressing fisheries co-management.
- Semi-structured interviews: when required and possible, interviews are conducted to obtain data to fill any data gaps left by document studies, and to confirm empirical findings from these. Interviewees included executive officers of government fisheries departments, local fishers, leaders and members of fisheries associations. Snowball sampling was employed to select interviewees. The study started with some experts in fisheries co-management as gatekeepers. Through them it identified potential interviewees from both government fisheries agencies and fisheries associations in the research. The selection of different groups of interviewees provides different perspectives and helps to avoid bias of collected data.

Texts were interpreted with reference to the social, economic,and political contexts in each case-study country. All the collected documents were analysed in the context of fisheries governance. The data from each case were organized into three main themes:

- institutional capacities of the state;
- relational capacities of the state
- the co-management network.

The focus of this study is a type of state support for fisheries communities to sustain their collective action in fisheries management in relation to Ostrom's eight institutional conditions. State capacities in formulating and implementing fisheries policies vary between countries. By drawing on three cases, this study aims to explore a range of key institutional and relational issues to help better understand governing capacity by the state in playing its meta-governance role in fisheries management. In examining two stronger states in relation to co-management arrangements (Akita Fisheries Cooperative Associations, Japan, and the Norwegian Fishermen's Association, Norway) and a weaker state (Vinh Giang Fisheries Association, Vietnam), it explores whether state capacities matter in relation to the success of collective action by fishers. This representation aims to explore a variety of mechanisms which states can employ to meta-govern fishers associations. The three cases are globally recognized as good examples of fisheries co-management and are well documented, so the research takes advantage of the good availability of secondary source materials.

Ostrom (1990) emphasizes the importance of the representativeness of the third world in her study. In her words:

> I have frequently been asked, when giving seminar presentations about the Swiss, Japanese, and Spanish institutions, if the same design principles are relevant for solving CPR problems in Third World settings. The last case discussed in this chapter provides a strong affirmative answer to this question. All of the design principles present in the Swiss, Japanese, and Spanish cases are also present in the Phillipinne case. (Ostrom 1990: 61)

In terms of the representativeness of the case studies, quite similar to Ostrom's work, this study pays attention to developing countries. Therefore Vietnam is a good example of a developing country where a lack of resources is often characterized as a big challenge for the state in carrying out its meta-governance functions. Moreover, in Vietnam, as co-management via fisheries associations often has only a recent history, it can be useful to obtain first-hand insights into how collective action has been formulated and to explore the role of the state. In addition, the case studies represent two key different approaches to modern fisheries management around the world: open access (Norway) and limited entry (Japan and Vietnam).

Comparative case studies among nations aim to provide various insights into state capacities in relation to different national settings. By locating collective action by fishers in two key different national overarching set-

tings, the book aims to explore the relationship between the institutional capacity of the state and the success of collective action by fishers. The comparison of this study centres on two key themes that emerged from meta-governance:

- the institutional capacity of the state, such as the overarching institutional setting;
- the role of the state in crisis dynamics, particularly in the provision of in-depth knowledge, fiscal support, policy formulation and relational capacity of the state, or the working relationship between the state and fisheries association in a fisheries co-management network.

Case Study 1: Akita Fisheries Cooperative Associations

The first case is in Japan (see Chap. 4), where FCAs are delegated to manage coastal areas. The research investigates how a state with strong capacities, in terms of resources, practises its "meta-governance" roles in fisheries management when a high level of autonomy is given to a fishers' association. Other fisheries co-management authors highlight key factors for the success of fisheries co-management, particularly self-governance by FCAs, where they assume that Akita fishers independently made a crucial decision about closing down the sandfish industry from 1992 to 1995 (Berque and Matsuda 2013: 197; Matsuda et al. 2010: 899; OECD 2012a: 23; Uchida 2010: 246). In contrast, this study investigates the case to argue that the substantial role of the state, particularly at the national and local levels, is central in governance arrangements for sandfish in Akita. To support this argument, it pinpoints some key facts:

- the FCAs function under the territory rights regime adopted by the state and interact with other groups in forums created by the state;
- the moratorium during 1992–1995 was originally initiated by local government;
- the local government of Akita Prefecture largely engaged the fisheries research institute of the prefecture in providing in-depth knowledge about the causes of serious decline of sandfish stocks before 1992, which convinced fishers to adopt voluntary compliance with the moratorium;
- the local government of Akita Prefecture and the national government of Japan provided large amounts of funding to enable the moratorium.

This case also demonstrates the importance of relational capacity in working with fishers.

Therefore the so-called "self-governance" advocated by fisheries co-management scholars in this case is conditional under the shadow of hierarchy. The FCA is allocated fishing rights by the state, and then it distributes those rights to its members and is empowered to establish operational rules for the allocated water surface. It is noteworthy that the state has strong relational capacity in working with the FCA. The relationship between the state and the FCA analysed in this case is not one of command and control but is about persuasion and negotiation. As Chap. 4 highlights, the complexity and marked uncertainty of sandfish stocks in Akita, especially the crisis in 1991, highlight the substantial role of the state in conserving stocks, and therefore in protecting the industry from collapse. The interventions of the state to achieve the moratorium are clearly recognized, from designing objectives to providing knowledge and support. Notably, its first attempt to apply a moratorium failed in 1986 because of the FCA's refusal. This raises the question as to whether the state has been hollowed out by non-state actors, particularly the FCA with a high level of autonomy. What happened after the first failure in Akita shows that the state is capable of adopting various approaches to achieve its policy objectives, from providing in-depth knowledge to assisting understanding, as well as supplying important fiscal resources, which is often a big challenge for fishers.

Case Study 2: Vinh Giang Fisheries Association

The case of Akita (see Chap. 5) shows that a state with abundant resources can use this advantage to negotiate and foster the process of collective action by a fisheries association. In contrast, in developing countries when the state is often challenged by a shortage of resources, this raises a question about whether the state can effectively practise its meta-governance role. This second case, in Vietnam, seeks insights into how the state can achieve its policy objectives in working with fisheries associations even when the resources required to support them are not readily available.

The central argument here is that in fisheries co-management the state, even with weak capacities in terms of resources, is still central to the governance processes. In supporting this argument, Chap. 5 investigates to what extent local governments have successfully implemented their policy on reducing and rearranging "fishing gear" in Tam Giang Lagoon, Vietnam, particularly in the Vinh Xuan Commune, by working with the

fisheries association. During the late 1990s, the lagoon systems were in an alarming situation with the water having become seriously polluted and threatened by an outbreak of aquatic diseases. In response, assuming that increasing water circulation between the lagoon system and the sea was an optimal solution to mitigate the contamination level of the lagoons, the local government of Thua Thien Hue decided to reduce the amount of fishing gear there, which was considered to be an obstruction to water circulation both in the lagoons and between the lagoons and the ocean. The central argument of the case starts with the policy target outlined by the local government of Thua Thien Hue Province: "Reducing by 40% … the number of fishing gear in lagoon systems of Thua Thien Hue… (Government of Thua Thien Hue Province 2004, Decision 3677/2004/QD-UB: Article 1, Item 1). To obtain insights into how the state can play its meta-governance roles in co-management arrangements with local fishers via their fisheries association to achieve the policy objective mentioned above, the research focuses on the implementation of this policy with Vinh Giang Fisheries Association, which was once a sampan community and has been associated with Vinh Xuan Commune, Phu Loc District, Thua Thien-Hue Province, Vietnam. Vinh Xuan Commune is situated along the Tam Giang-Cau Hai Lagoon system, which is considered to be very important to Thua Thien Hue Province in terms of fisheries resources. According to Takahashi and Duijn (2012: 7), "about 300,000 people make their living in and around the lagoon with many involved in capture fisheries and aquaculture activities. Out of the 300,000, one third is estimated to rely directly on fisheries and aquaculture activities."

This study finds that the first attempt, using a top-down approach, was a failure because of strong protests by local fishers. In response, the local government turned to another means: working with fisheries associations, empowering the associations with fishing rights (Territorial Use Rights for Fishing, TURFs) and engaging the FAO via the Integrated Management of Lagoon Activities (IMOLA) Project, which operated from 2005 to 2011 in Thua Thien Hue Province. The IMOLA Project provided substantial resources which local governments lacked, especially expertise on TURFs and in-depth knowledge about the dynamics of the water body in the lagoons. However, such short-term external support is likely to challenge the long-term performance of the fisheries associations. Therefore insights gained by this chapter contribute to our understanding of why, in developing countries such as Vietnam, collective action by fishers via their associations is still challenging.

Case Study 3: Norwegian Fishermen's Association

The third case is about the Norwegian Fishermen's Association (NFA) (see Chap. 6), which was set up in early 1926 with active sponsorship by the state, and over time became a close partner of the government. Until the early 1960s, the level of state subsidies for fisheries was determined through bilateral negotiations between the government and the association. The two came to a "General Agreement" in 1964, which had two main objectives: strengthening the economic efficiency of the industry and increasing the average income of fishers. The state benefits from this close relationship and gains support for implementing government policies. For example, thanks to support from the NFA, the governments implemented limited entry across a range of stocks and fisheries during the 1970s, a policy that could not have been effectively implemented without the support of the association, which, by that time, had come to include the powerful offshore sector (Jentoft and Mikalsen 2014: 4–5). The NFA, which includes inshore fishers, offshore fishers, vessel owners and crews throughout Norway, is the main industry organization representing the interests of fishers. As the case reveals, it plays an important role in Norwegian fisheries co-management in a close working relationship with the Ministry of Fisheries and Coastal Affairs, and the Directorate of Fisheries, both of which are state agencies. Importantly, with the strong empowerment by the state as a national institutional structure, the NFA has gained its privileged position in the fisheries arena as the sole representative of the industry by working with the state under a subsidies system. Chapter 6 focuses in particular on the institutional capacity of the state in supporting the NFA, particularly in the negotiations for national TACs, and during the cod crisis. In addition, it reveals the importance of the relational capacity of the state in working with fisheries associations. The quality of this relationship between the NFA and government has changed since the 1980s, when the agreement and the system of subsidies were gradually reduced, and then when the agreement was terminated in 2004.

The Structure of the Book

This book has seven chapters. Chaps. 2 and 3 set out the key definitions explored in the research, such as institutions, power, co-management, state capacities, meta-governance, and limited and open access regimes in fisheries. The resourcing function of meta-governance is then used to cre-

ate an analytical framework based on the classifications of Ostrom's eight institutional conditions grouped under three headings:

- resources system characteristics;
- institutional arrangements;
- external environment.

This is an important framework because it is specifically tailored to fisheries management contexts and nations such as Vietnam, Japan and Norway. This analytical framework is then used to investigate how state capacities relate to each classification in each case.

Chapter 2 offers a review of Ostrom's (1990) eight institutional conditions outlined in section "Overview of Ostrom's Eight Institutional Conditions". By analysing these eight, the chapter indicates that they are society-centric and underestimate the capacity of the state in working with resource users. In pinpointing that Ostrom's conditions are incomplete, particularly regarding the role of the state in supporting collective action by resource users, the chapter presents its central argument that the state is an important contributory factor in fostering the success of collective action in CPR management. In backing up this central argument, it explores areas in relation to the eight institutional conditions where the state can play an important role in assisting resource user communities. The chapter concludes that the role of the state in supporting collective action is overlooked by Ostrom's eight conditions, so it is necessary to bring the state back in. Therefore it is widely relevant to introduce the concept of "meta-governance" into managing CPRs in association with Ostrom's conditions.

Chapter 3 provides a critical analysis of co-management scholars' thinking on the role of the state. In doing this, it refers to the definition of power by Dahl (1957: 203) that "A has power over B to the extent that he can get B to do something that B would not otherwise do." As Bell and Hindmoor (2009: 190) argue, "power is a useful concept with which to analyse the limitations of the society-centered account of governance". This conception of power can be linked to the definition by Theda Skocpol (1985: 9) of state capacities as being capable to "implement official goals, especially over the actual or potential opposition of powerful social groups or in the face of recalcitrant socio-economic circumstances". Accordingly, this concept of power enables the research to examine the exercise of power by investigating who can make the final decisions when actors bring different ideas

to the policy debates. The chapter then discusses state capacities in order to challenge the view that the state is equal with other actors in fisheries co-management arrangements. Finally, based on critiques of Ostrom's approach, co-management scholars' thinking and the state-centric concept of meta-governance, the chapter produces a research framework to investigate three selected case studies in fisheries co-management in Japan, Vietnam and Norway. The framework focuses on the resourcing function of meta-governance in relation to the eight institutional conditions established by Ostrom (1990). The chapter explores key highlights of current co-management scholars (i.e. power-sharing and decentralization) to indicate that their approach is community-centric. In addition, it provides critiques of co-management scholars' polycentric approach by examining their proposed network for fisheries co-management, in which fishing communities are central and are assumed to be equal with the state. In contrast, the chapter presents its main argument that co-management requires substantial support from the state in terms of resourcing, and that the state is central in such arrangements.

Chapter 4 explores the huge uncertainty of fish stocks by investigating the sandfish stock decline of the late 1980s in Akita, Japan. It highlights the importance of relational capacities of the state in fisheries governance. The chapter supports the argument that the uncertainty of fish stocks is often beyond the capacity of fishing communities to cope with. Therefore the support of the state can be crucial. During the 1991 crisis, sandfish stocks experienced a drop from more than 20,000 metric tons in the 1960s to just 74 metric tons in 1984. This adds a point to Ostrom's eight conditions: that a crucial input for fisheries governance is that fish stocks should not be overfished and depleted. The state can help with this job. This focus is further strengthened in Chaps. 5 and 6. By investigating the policy process of the sandfish stock moratorium, Chap. 4 provides an analysis of the dynamic interactions between the state and the association. In doing this, it aims to show that in fisheries co-management the relationship between the association and the state is not an equal one in terms of resources. In other words, the co-management system is asymmetric. Accordingly, the chapter contributes to the identification and analysis of the policy network in fisheries co-management arrangements at the local level. This supports the argument that the state plays a central role in the fisheries co-management network.

Chapter 5, focusing on Vietnam, continues to highlight the important roles of the state in supporting fisheries associations, in rule enforcement

and in providing an important fiscal resource for fisheries associations. It focuses on answering a big question of meta-governance: whether a weak capacity state can still practise its meta-governance role. In this case, the state is challenged by shortages of resources, particularly expertise and scientific knowledge regarding the aquatic system of the lagoon waters. Accordingly, the state has involved the FAO of the United Nations via the IMOLA Project. This case aims to highlight the central argument of the chapter that in fisheries co-management arrangements, the state, even with weak capacities in terms of resources, can play a central role in governance processes. This argument is supported by investigating to the extent to which local governments have successfully implemented their policy on reducing and rearranging fishing gear in Tam Giang Lagoon, particularly at Vinh Xuan Commune, by working with Vinh Giang Fisheries Association since the early 2000s. In doing this, the chapter reveals the importance of the working relations between the fisheries association and state agencies in making collective action by fishers successful.

Chapter 6 continues to address the high level of uncertainty of fish stocks by investigating the Norwegian state's response to the cod crisis of 1989, when the whole-year total quota had been reached by 18 April. Closure was required. "Never more April 18", as affirmed by the fisheries director, became the state's strong view in solving this crisis (Davis and Jentoft 2003: 197). In this context, the Individual Vessel Quota (IVQ) system was introduced in 1990. By investigating the policy process of IVQ, the chapter provides an analysis of the dynamic interactions between the state and the association. The introduction of IVQs marked the start of new fisheries co-management in which the NFA is no longer the only representative of the industry but has to compete with other actors. This means that, in certain settings, some types of institution may be strengthened while others may be weakened. This finding shows that in fisheries governance the state often has the capacity to bring new actor(s) into the network for meta-governance purposes. The chapter thus supports its second argument that in fisheries co-management the relationship between the association and the state is not an equal one in terms of authority. Instead, the state often plays a dominant role.

Chapter 7 concludes the research by emphasizing that the state is the only feasible authority that is able to carry out its meta-governance functions in fisheries management. By doing this, the state provides significant support to collective action by fishers. Therefore, in co-management arrangements, the role of the state remains crucial. The involvement of

fishers as a group of resource users does not mean that the role of the state should be reduced to make it an equal actor with the former. Rather, the state should adopt a role of meta-governance to ensure that the governance operates efficiently and with sustainable outcomes. The chapter draws together key points from the research:

- co-management scholars have underestimated the capacity of the state to support fishing communities;
- state capacity matters in promoting collective action;
- the co-management arrangements are not polycentric but state-centric.

Contributions to Knowledge

The book explores different aspects of effective co-management by examining the interaction between the state and fisheries associations. By doing this it aims to produce new findings on co-management arrangements which go beyond the mantra of power-sharing, decentralization and empowerment. The three cases selected support the central argument that fisheries co-management arrangements take place in the shadow of hierarchy. Effective co-management requires thorough consideration of a holistic setting in which fishers as actors have to interact with other actors to manage mobile and exhaustible fish resources, where the state takes overall responsibility for the well-being of the whole system. Mechanisms of meta-governance adopted by states for fisheries co-management may vary from country to country, but overall a state sets key objectives for the industry and mobilizes resources to ensure that these are achieved. Investigating the state's capacity, both institutional and relational, in working with fisheries associations sheds light on why and how such co-management arrangements can be successful. Here it is argued that with its remarkable resources, the state remains central to fisheries co-management networks, and it often largely supports collective action by fishers. Accordingly, the research aims to make a contribution to further define and reinforce the concept of meta-governance. It also contributes to a wider discussion about the extent to which meta-governance can enable conditional self-governance arrangements in fisheries. Most importantly, for the first time in fisheries co-management, it introduces meta-governance and suggests that state capacity can be an important factor in making collective action by fishers successful. Empirical findings from this

research are likely to be interesting to practitioners who want to know what is workable, and to scholars who are concerned about whether the state as a meta-governor can choose and empower local actors in associative governance to enable collective action to successfully manage fisheries resources. The three cases challenge the view that meta-governance can be exercised by either state or non-state actors, and it conceptualizes meta-governance as being exercised exclusively by state actors.

Meta-governance raises important questions about how states have the capacity to drive and support governance arrangements. This research, with three cases under scrutiny, aims to present its empirical findings on mechanisms adopted by the state in practising its meta-governance roles when working with fisheries associations. Accordingly, the research intends to complement Ostrom's eight institutional conditions, and at the same time enrich the current body of literature on meta-governance. For this reason, it aims to initiate not only a theoretical discussion about the government of co-management arrangements but also a wider investigation of the extent to which the roles of the state need to be theorized to enable the success of collective action in managing CPRs.

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CHAPTER 2

Critiques of Ostrom's Approach: A View from Fisheries Governance

Introduction

According to Hardin (1968), common pool resources (CPRs) can only be managed by either the state or the market. He introduced the term "Tragedy of the Commons" (Hardin 1968: 1244) to explore the degradation of a CPR when each individual gains from adding another animal to grazing land. Eventually the herdsmen, each pursuing their own gain, destroy the pasture. As Hardin puts it, "ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all" (Hardin 1968: 1244). He suggests that strict government control can help recovery for the shared pasture under the condition of "mutual coercion, mutually agreed upon by the majority of the people affected" (Hardin 1968: 1247).

However, his approach has been criticized for not recognizing common ownership regimes, which can help to prevent resource overexploitation (Dietz et al. 2003: 1907). In her 1990 book *Governing the Commons: The Evolution of Institutions for Collective Action*, Ostrom indicates that what Hardin describes is the extreme limit of an "open-access resource" regime—such as open ocean fishing. "What one can observe in the world, however, is that neither the state nor the market is uniformly successful in enabling individuals to sustain long-term, productive use of natural resource systems" (Ostrom 1990: 1). She argues that the model does not

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apply to a CPR: "a natural or man-made resource system that is sufficiently large as to make it costly (but not impossible) to exclude potential beneficiaries" (1990: 30). Ostrom was the first to dispute this management paradigm, not by denying the logic as faulty or untrue but by studying how communities can counteract the "tragedy" mechanism in the institutionalization of successful common property management regimes.

The role of communities in managing natural resources has since the 1990s often been overestimated and the role of the state often underestimated. This is endorsed and legitimized by theories of collective action. One highlight in this trend is the extensive empirical research conducted by Ostrom (1990) and her colleagues in the 1980s on situations in which resources were used sustainably by local groups that could organize themselves to solve collective action problems. Ostrom's approach sheds new light on specifying institutional conditions for local participation in managing common pool resource (CPRs)—that is, on the formal and informal rules governing human behaviour and on the mechanisms for creating and changing those rules (Tarko 2012: 52). However, Ostrom (1990) is most concerned about defining the necessary minimal requirements relating to the successful management of CPRs and is concerned primarily with institutions. She suggests that institutions can prescribe, proscribe and permit certain types of behaviour. Her focus is on rules and property rights for communities to manage CPRs by themselves. CPRs include coastal fisheries, pastures and forests, and water supplies such as irrigation projects. Institutions in Ostrom's definition (2005: 3) are "the prescriptions that humans use to organize all forms of repetitive and structured interaction including those within families, neighbourhoods, markets, firms, sports leagues, churches, private associations, and governments at all scales". For Douglas North (1990: 4), an institution is "any form of constraint that human beings devise to shape action". Accordingly, institutions include both formal and informal prescriptions, including legal documents issued by central governments, implicit norms governing policy implementation, and collective oral rules-in-use within a community. According to Bell and Hindmoor (2009: 59), in governance, "institutions matter because they shape the behaviour of individuals and the possibility for governance". According to Searle (2005: 10), the role of human institutions is essentially "to create new sorts of power relationships". Institutions not only emerge from rational individual decisions led by a set of incentives but also are significantly shaped by power distributions. In this sense, institutions and power are closely interrelated.

To argue that privatization and centralized state regulation are not the only solutions to the Tragedy of the Commons, Ostrom explored the role of communities and institutional governance arrangements. She investigated five selected case studies of what she referred to as successfully governed CPRs—the forests and meadows of Switzerland, the ancient villages of Japan, the ancient huerta irrigations of Spain and the zanjera irrigation of the Philippines. Her work resulted in the identification of eight institutional conditions necessary for successful cooperative governance of the commons. These are

- clearly defined resource boundaries;
- congruence between rules and local conditions;
- affected people's capacity to modify the rules;
- available and accountable monitoring;
- graduated sanctions;
- conflict-resolution mechanisms;
- no challenges from external government authorities regarding the rights of resource users;
- small CPRs that may nest in a larger system with a similar structure.

These conditions are explored and discussed intensively in this chapter. It is important to mention that they do not mention the role of the state in managing CPRs. In Ostrom's approach, the state is removed from the governance process. She states that "how the activities and policies of external political regimes can affect the level and type of self-organization to achieve collective benefits is not one of the variables … included in current theoretical explanations of collective action" (Ostrom 1990: 190). She acknowledges that current theories on collective action "do not take into account the importance of the characteristics of external political regimes in an analysis of how internal variables affect levels of collective provision of rules" (Ostrom 1990: 191). This thinking is questionable and hinders a proper understanding of the comprehensive roles of the state, and it limits wide application in current fisheries management.

This chapter provides a review of Ostrom's eight institutional conditions. By analysing them, it shows that they are society-centric and underestimate the capacity of the state in working with resource users. In arguing they are incomplete, particularly with regard to the role of the state in supporting collective action by resource users, the chapter emphasizes that the state is an important contributory factor in fostering the success of

collective action in CPR management. It explores areas in relation to the eight conditions where the state can play an important supporting role for resource user communities. The chapter concludes that the role of the state in supporting collective action is largely overlooked by Ostrom's conditions, and that, accordingly, it is necessary to bring the state back in. As argued below, it is also relevant to introduce the concept of meta-governance into managing CPRs in association with Ostrom's conditions.

Overview of Ostrom's Eight Institutional Conditions

Condition 1: Well-Defined Boundaries

In Ostrom's words, "defining the boundaries of the CPR and specifying those authorised to use it can be thought of as a first step in organising for collective action" (1990: 91). She advances the importance of property rights by adding that

> without defining the boundaries of the CPR and closing it to "outsiders", local appropriators face the risk that any benefits they produce by their efforts will be reaped by others who have not contributed to those efforts. At the least, those who invest in the CPR may not receive as high a return as they expected. At the worst, the actions of others could destroy the resource itself. (Ostrom 1990: 91)

In this condition, communities are assumed "to be an immutable group of people jointly managing a delimited common resource" (Turner 1999: 649). Among the cases Ostrom found to be institutional failures were two from Turkey of offshore fisheries and one each from Sri Lanka and Nova Scotia. In these cases, exclusion from these relatively vast offshore fishing grounds is difficult compared with the smaller irrigation systems, forests and meadows in the case of successful examples. "For any appropriators to have a minimal interest in coordinating patterns of appropriation and provision, some set of appropriators must be able to exclude others from access and appropriation rights" (Ostrom 1990: 91). This raises the question of how to exclude outsiders from a defined area, or define boundaries around a community of users and boundaries around the resource system that this community uses. Pinkerton and Weinstein (1995: 25) state that

"exclusion of outsiders from fishing space was the main mechanism used by the villagers to control fishing effort. This is one of the most common and universal mechanisms found in community-managed inshore fisheries". Exclusivity means preventing others from damaging or interfering with an owner's rights. A high level of exclusivity in fisheries helps to reduce incentives to race for fish (CEM 2009: 10; Uchida 2010: 240). However, the definition of boundaries is often linked with government authorities. As Cleaver (1999: 603) states, "A concentration on boundaries highlights the need in development for clear administrative arrangements." Likewise, Turner (1999: 649) argues that "rules of access are often politically malleable and spatial boundaries fluid".

Condition 2: Congruence Between Rules and Local Conditions

Ostrom's second condition principle refers to the "congruence between appropriation and provision rules and local conditions" (1990: 92). Accordingly, both appropriation and provision rules need to match with local conditions. This means spatial and temporal heterogeneity. For example, in Guillet's (1992: 104) study on Peruvian irrigation systems, farmers are given water sufficient to cover the requirements of their fields under normal conditions. However, this rule is modified when water scarcity threatens and actions are taken to ensure that each household has a minimal sufficient amount of water.

Condition 3: Affected People's Capacity to Modify the Rules

In the third condition, Ostrom states that "most individuals affected by the operational rules can participate in modifying the operational rules" (1990: 90). This requires the capacity to participate by resource users. The advantage of local users is that they have first-hand and low-cost access to information about their situation, so they may be able to devise effective rules and strategies for that location. In this process, the local knowledge of users is emphasized.

Condition 4: Monitoring

Condition 4 has two sub-conditions: first, it requires the presence of monitors, and second, these monitors are members of the community or otherwise accountable to those members. The information from

monitoring enables community members to improve the rules of appropriation and provision of the shared resources in a way that achieves the sustainability of the resource. Monitoring makes those who do not comply with rules visible to the community, which improves the effectiveness of rule-enforcement mechanisms and informs the strategic and contingent behaviour of those who do comply with rules. Monitors may not perform satisfactorily if they do not benefit directly from improved resource conditions. Thus it may be important that monitors are accountable to those who most depend on the resource.

Condition 5: Graduated Sanctions

Condition 5 emphasizes the importance of the existence of graduated sanctioning systems. Sanctioning deters participants from excessive violations of community rules. Graduated sanctions progress incrementally based on either the severity or the repetition of violations. Graduated sanctions help to maintain community cohesion while genuinely punishing severe cases. They also maintain proportionality between the severity of violations and sanctions.

Condition 6: Conflict-Resolution Mechanisms

Osram's sixth condition states that systems with low-cost conflict resolution mechanisms are more likely to survive. Conflict over an exhaustible resource is inevitable in CPR management, necessitating the presence of established mechanisms for conflict resolution to maintain collective action. When conflict resolution mechanisms are not available or not easily accessible, successful CPR management appears to be more difficult.

Condition 7: No Challenge from Government Agencies

Condition 7 stipulates that external government agencies do not challenge the right of local users to create their own institutions. Violations of this principle can be associated with less successful community-based resource management regimes. Take the case of Newfoundland, for example where observed "a small group of local fishers had been able to devise and maintain their own rules, but those CPR institutions were rendered frail when national authorities refused to recognize their existence"

Ostrom (1990: 190). She uses this case to argue that "the activities of external political regimes" are "threatening" in Newfoundland" (Ostrom 1990: 190). She argues that a CPR may suffer from a government failure when an external government agency imposes its own rules on a community in managing CPRs.

In relation to Condition 7, Pomeroy and Berkes (1997: 469) further clarify that local fishers should not be challenged by governments when they want to hold meetings to discuss problems and solutions, and to develop organizations and institutional arrangements (rights and rules) for CPR management. Fishers should have the right to meet openly on their own initiative and discuss problems and solutions in public forums. They should be free to criticize existing government policies and management methods. Government officials should listen to them, and fishers should be given the right to develop their own organizations and to form networks and coalitions for cooperation and coordination.

Condition 8: Multiple Layers of Nested Enterprises

Ostrom's final condition requires that appropriation, provision, monitoring, enforcement, conflict resolution and governance activities be "organized in multiple layers of nested enterprises" (Ostrom 1990: 101). Ostrom argues: "The nesting is important for support (e.g. information sharing) as well as completeness and endurance of a system so that issues of cross-scale cooperation and resource users at a larger scale can best be addressed" (1990: 101). This means one CPR must be embedded in a larger system with a similar structure. For example, one FCA in a village is embedded in the Federation of Fisheries Cooperatives Associations at the regional level. The nesting may occur either between user groups and larger governmental jurisdictions, or between two or more user groups. Intercommunity connections can be thought of as horizontal links, whereas connections between multiple jurisdictional levels can be thought of as vertical links. According to Agrawal (2003: 249), Ostrom's eight institutional conditions can be categorized into the following three main categories (see Table 2.1):

- resource system characteristics;
- institutional arrangements;
- external environment.

Table 2.1 Ostrom's eight enabling conditions and the characteristics of CPRs

1. Resource system characteristics	• well-defined boundaries
2. Institutional arrangements	• graduated sanctions • conflict-resolution mechanisms • monitoring • congruence between rules and local conditions • affected people's capacity to modify the rules
3. External environment	• no challenges government agencies of resource users • multiple layers of nested enterprises

Adopted from Agrawal (2003: 249)

Critique of the Institutional Conditions

Ostrom's approach has been widely criticized for being apolitical, as being too focused on rules and constraints on human behaviour, and for underestimating power dynamics and contextual factors (Agrawal and Yadama 1997: 441; Blaikie 2006; Cleaver 1999; Steins and Edwards 1999; Mosse 1997: 467; Jentoft et al. 1998: 426; Clement 2010: 135; Marschke et al. 2012: 4). Ostrom (1990) has been most concerned with defining the necessary minimal requirements relating to the successful management of CPRs, and she is concerned primarily with institutions. She suggests that institutions can prescribe, proscribe and permit certain types of behaviour. Yet here conditions are incomplete, especially in relation to the role of the state. As Marschke et al. (2012: 4) argue, "much of the common property and collective-action literature has focused on the characteristics of the user group and attributes of the resources … Thus, there is a need to consider the role of external influences."

Most of the conditions emphasized by Ostrom are characteristics of the community, such as scale, village size, homogeneity and the ability to exclude outsiders. Therefore Ostrom's design principles (1990) only partly explain the success of management institutions. Other scholars argue that we need to include the relevant properties of the resource system itself in more detail (Schlager et al. 1994; Agrawal and Chhatre 2006; Tucker et al. 2007). According to Bardhan (2000: 861), "cooperative behavior in an irrigation community is by and large significantly related negatively to … urban or market connections". External factors such as

development and market forces can contribute to the success of CPR management (Cinner and McClanahan 2006; Klooster 2000). When analysing factors that contribute to the problem of overfishing in small-scale coral reef fisheries in Papua New Guinea, Cinner and McClanahan (2006: 78) indicate that "communities in close proximity to markets had likely overfished the higher value and high tropic level species". The dependence on the resource used by a community is another external factor suggested by Pinkerton and Weinstein (1995). In their thinking, the robustness of the management regime is driven by this important factor. They argue that heavy dependence on the resource encourages resource users towards cooperative behaviour.

The critique that the design principles are incomplete is sound. Yet there are several other important features that affect outcomes when CPRs are managed by communities of users. In an increasingly interconnected world, it is hard to argue that we should only consider local-level institutional properties. National and international external factors need to be considered as well. Most notably, the role of the state in facilitating collective action by resource users is not theorized in Ostrom's eight institutional conditions. This incompleteness was noticed by Anthony and Campbell (2011: 288). In their words, "cooperative behaviour cannot be so easily separated theoretically from the state". They suggest that there are some areas which require state activities for cooperative behaviour to take place successfully (Anthony and Campbell 2011: 292). For example, the state can legitimize rules for the management of CPRs and help to ensure the match between those rules and local conditions and customs. States can also help monitor resource use and provide platforms for conflict resolution (Anthony and Campbell 2011: 292). In fisheries management, Pomeroy and Berkes (1997: 469) confirm that "only government can legally establish and defend user rights and security of tenure". In a study by Kosamu (2015: 366–367), 17 case studies on small-scale fisheries in developing countries reveal the importance of supportive central states for the sustainability of small-scale fisheries.

A Society-Centric Approach

Ostrom's eight institutional conditions, and her focus on communities, are essentially a local or a society-based approach (Anthony and Campbell 2011: 287; Agrawal 2003: 250; Clement and Amezaga 2013: 145). Ostrom observes that "the fishers themselves may be able to enforce the

rules" (1990: 101). The concept of "self-organisation, self-governance" is used widely in her book to highlight community capacities. For example, she argues that "the most striking similarity between the huerta and zanjera systems is in the central role given to small-scale communities of irrigators who determine their own rules, chose their own officials, guard their own systems, and maintain their own canals" (Ostrom 1990: 82). She also tends to highlight the qualities of communities:

> These groundwater pumpers invested heavily in the supply of institutions. They created new private associations. They paid for costly litigation to allocate water rights. They drafted legislation, had it introduced to the state legislature, and gained sufficient support from other water enterprises to get the legislation passed. (Ostrom 1990: 137)

Regarding rule-making, she argues that those local communities at least possess the same power as government officers. In her words, "in many inshore fisheries, for example, local fishers devise extensive rules defining who can use a fishing ground and what kind of equipment can be used" (Ostrom 1990: 101). She also suggests that "it may be possible for local appropriators to create their own local institutions outside the legal framework" (Ostrom 1990: 214). To support this argument, she emphasizes the capacities of communities to design local rules and have them approved. She suggests that "it is relatively easy for a group of individuals to introduce new organic legislation … when individuals in one area have discussed such proposals with others who are likely to be affected" (Ostrom 1990: 139).

In support of her society-centric approach, she justifies a "polycentric network" of actors in the governance of CPRs (Ostrom 1990: 133). When exploring the case of water basin management in Los Angeles, she says that "instead of relying strictly on hierarchical relations, as within a single firm, the management system is governed by negotiation and bargaining processes among many different actors in several different arenas" (Ostrom 1990: 135). She highlights forms of self-organizing and polycentric approaches to tackle cross-sectoral problems despite considerable institutional and actor complexity. These forms of multi-actor and multi-level responses can be viewed as providing polycentric order in the sense that they include the self-organizing relationships between many centres of decision-making that are formally independent of each other (Ostrom 2000, 2010; Ostrom et al. 1961: 831). Therefore, for Ostrom, a

polycentric approach is the best way to achieve successful collective action. She describes how the basin is managed in a way that the state is left to one side:

> No one owns the basins themselves. The basins are managed by a polycentric set of limited-purpose governmental enterprises whose governance includes active participation by private water companies and voluntary producer associations. This system is neither centrally owned nor centrally regulated. (Ostrom 1990: 136)

Ostrom and her colleagues argue that a "polycentric system is more efficient than one large, metropolitan-wide governmental unit or only a single layer of smaller units" (Gibson et al. 2000: 234). Ostrom suggests that central regulation can actually prevent resource users from developing appropriate rules because individuals and groups often wait for the government to provide solutions to their problems. In pursuing this approach, she and her colleagues tend to downgrade the role of the state and overestimate the capacity of resource user communities. The approach is the rationale for not theorizing the state as an important contributory factor in the governance of CPRs, particularly in fostering collective action by resource users. Condition 7 is precisely about the idea that "the rights of appropriators to design their own institutions are not challenged by external government authorities". The following section discusses how far Ostrom's approach underestimates the importance of the state in supporting successful collective action in CPR management.

The Role of the State in Facilitating Collective Action: A Missing Puzzle

Ostrom's eight institutional conditions, which emphasize the role of communities, as this study will argue, do not properly address the potentially important role of the state in fostering collective action by fishers in managing CPRs. For Ostrom, the state is removed from the governance process. Nor does she trust the state. She argues that "instead of honest officials, one posits corrupt centralized regimes, [and] the problems involved in institutional supply, become more difficult" (Ostrom 1990: 214). This approach can hinder our understanding of the dynamic role that the state can play in supporting local engagement. Indeed, when Ostrom analyses the fragility of Nova Scotian inshore fisheries, she indicates

that "the rule system is fragile because it is not recognized by federal authorities in Canada" (Ostrom 1990: 175). She uses a quotation from A. Davis (1984: 156) to describe the role of the state and its agencies in the Canadian case:

> What do they know about what we do? Fisheries Officers are only around here now and then. How do they know what's best for us? We've fished here for a long time and we know what's best for our ground. We know what it can take. (Ostrom 1990: 177)

Ostrom downgrades the capacity of the state by indicating that "without valid and reliable information, a central agency could make several errors, including setting the carrying capacity or the fine too high or too low, sanctioning herders who cooperate, or not sanctioning defectors" (Ostrom 1990: 10). Even when exploring the case of collective action by underground water pumpers in the state of California, she admits that the state provided remarkable support, such as a court of appeal, fiscal resources and technical assistance:

> Maintaining a court system in which individuals have standing to initiate litigation in order to develop firm and transferable rights to a defined quantity of water is one such contribution. The state of California goes even further and subsidizes one-third of the costs of such litigation in order to encourage full exploitation of water resources and settle disputes over water rights when necessary. The Department of Water Resources has provided technical assistance throughout the period … (Ostrom 1990: 138–139)

Despite this, Ostrom tends to ignore possible links between the success of collective action by pumpers and the active support of the state. Her thinking on the role of the state is thus inconsistent: she acknowledges that the state is a contributory factor to the success of collective action but then denies this role by saying that, in the same political system, other groups failed in their collective action. She admits that, in this case, "the oversight of local and state officials to ensure equitable solutions was an important factor in reaching those solutions" (Ostrom 1990: 213). In her own words, "the activities of external political regimes were positive factors in helping most of the groundwater producers in southern California to self-organize, but such activities were negative factors in preventing continued self-organization in Mawelle and threatening it in Newfoundland" (Ostrom 1990: 190). Accordingly, she ignores "a supportive political

regime" because she argues that even such a supportive setting cannot guarantee successful resolutions of difficult problems (Ostrom 1990: 213). She argues that "the failure of the Mojave pumpers to achieve similar success helps to illustrate that even given such a political regime, successful resolutions of difficult problems are not guaranteed" (Ostrom 1990: 213). This thinking hinders her from further exploring contributory factors by the state in her selected case studies.

As Ostrom tries to move away from the state, as discussed above, she argues further that communities can themselves create something outside the legal framework. And if this happens, any reactions by the state, if not supportive, are theorized as "a challenge from the state". Ostrom (1990: 190) observes "in Newfoundland, small groups of local fishers had been able to devise and maintain their own rules, but those CPR institutions were rendered frail when national authorities refused to recognize their existence". It may be useful if communities can customize rules to make them workable in local settings. However, it is not guaranteed that any rules that are outside the legal framework can exist without the support of the state. The reaction here may be supportive or restrictive. Both scenarios can occur. It is clear that Ostrom's thinking is biased towards communities while overlooking the capacities of the state. For example, in a country that adopts open access to fisheries, it is illegal and impossible for a fishing community to claim its use rights over a specific water area.

This way of thinking about the role of the state is questionable because the legal framework of the state often exists before new rules are created by resource users. Particularly in the case of Newfoundland, the national setting was established long before the rules of communities were designed. Accepting the rules and approving the rules of the communities is often in hands of the state. Therefore the question is whether the state is willing to support new institutions created by resource users by absorbing those roles into its existing systems, or by creating a favourable setting to accommodate those emerging institutions. In contrast with Ostrom's approach, as this book argues, in fostering collective action by resource users, sometimes the most important driving factor comes from external influences, especially from the state.

The following sections provide an in-depth analysis of the three main classifications of Ostrom's eight conditions, and they indicate areas in which the state can play a role—namely, resource system characteristics, institutional arrangements and the external environment. The role of the state in creating and sustaining conditions for collective action is supported

by Anthony and Campbell (2011: 288). They suggest that there are some areas that require state activities regarding some of Ostrom's eight institutional conditions for cooperative behaviour to take place successfully (Anthony and Campbell 2011: 292). For example, the state can legitimize rules for the management of CPRs and help to ensure the match between those rules and local conditions and customs. States can also help to monitor resource use, or provide platforms for conflict resolution (Anthony and Campbell 2011: 292). In fisheries management, Pomeroy and Berkes (1997: 469) affirm that "only government can legally establish and defend user rights and security of tenure". Kosamu (2015: 366–367) analyses 17 case studies of small-scale fisheries in developing countries to argue the importance of supportive central states for the sustainability of collective action by users. In the case of natural resource management, international experience suggests that local capacity for collective action does not come about automatically but requires some impetus (Knox and Meinzen-Dick 1999). Three critical aspects of the capacity of user groups to consider are financing, skills and links to other organizations—that is, whether there are sufficient financial, human and organizational resources. If local organizations are deficient in one or more of these areas, it does not mean that devolution programmes cannot proceed but rather that other institutions may be called upon to supplement the capacity of the local organizations, at least in the short term. As with technical training, these support services to strengthen capacity may be provided by the government, non-governmental organizations (NGOs) or academe. Therefore subsidies or contributions from the local government and NGOs may be helpful in setting up an organization (to reduce the costs of the initial organizing) (Carnaje and Harina 2009: 10). Bell and Hindmoor (2009: 55) argue that governments are best placed to perform this role because they often have the resources and legitimacy to oversee governance arrangements at lower levels. According to Bell and Hindmoor (2009: 47), governments should carry out meta-governance functions in overseeing governance arrangements. Fritz Scharpf (1994: 41) suggests that governance often occurs under the 'shadow of hierachy':

> In most western democracies … the unilateral exercises of state authority [have] largely been replaced by formal or informal negotiations, in policy formulation as well as in policy implementation, between governmental actors and the affected individuals and organisations … but these are typically negotiations under the shadow of hierarchical authority.

The Roles of the State in Relation to Ostrom's Eight Insitutional Conditions

The following section further outlines some areas in which the state can help to facilitate collective action in relation to Ostrom's eight institutional conditions, as classified into the three overarching categories shown in Table 2.1.

Defining Boundaries

Rules of access to an area are often defined within a political system. As Cleaver (1999: 603) observes, "A concentration on boundaries highlights the need in development for clear administrative arrangements." In fisheries, "governance is impossible without statable governable objects" (Johnsen and Hersoug 2014: 64). Ostrom admits that "overexploitation can lead to destruction of the resource itself" (1990: 109). However, the uncertainty and the risks of fisheries resource characteristics (e.g. fish migratory patterns), which are recognized by fisheries co-management scholars (Fennell et al. 2008: 64; Olsson et al. 2004; Carpenter and Gunderson 2001), may not make it possible for the community to define clear boundaries of the fish stocks. Fisheries scholars identify key concerns in co-management, including change, uncertainty and the complexity of the resource system (Fennell et al. 2008: 64; Olsson et al. 2004). This requirement is particularly challenging to fisheries in developing countries, which are often characterized by limited resources. So in-depth knowledge and information are also important here. Ostrom (1990: 33) acknowledges, "a major source of uncertainty is lack of knowledge". The case of serious change and uncertainty about the sandfish stocks in Akita from the 1970s to 1990s is typical (Suenaga 2008: 191). However, fishers did not know exactly what caused the serious decline. Conflicts arose between offshore and inshore fishers when they suspected each other of overfishing, and the local sandfish industry would have been on the brink of collapse if no effective action had been taken. Therefore the application of Ostrom's first institutional condition of clearly defined boundaries in fisheries management is a challenge when fisheries are a mobile resource within a marine environment. The uncertainty of the resource comes partly from this characteristic. The mobility of fisheries resources and associated uncertainty of fisheries resources in parallel with pressure from many different actors with different capacities raise the question of

whether communities of fishers can self-define and maintain the resource boundaries or whether they need to rely on the state. Local failure or incapacities in this regard imply a key role for the state. This is explored extensively in the empirical chapters of this book.

In defining clear boundaries in fisheries, the role of the state is often crucial, especially to establish fisheries boundaries between nations. Capture fisheries usually start out as an open access situation and, even if access is later only open to a restricted group, full privatization is usually impossible. The fisheries thus remain a CPR and hence are subject to the risk of Hardin's (1968) "Tragedy of the Commons" that leads to resource exhaustion. Hardin (1968) concludes that communal natural resources can only be sustained if a coercive central authority oversees the exploitation. In the same vein, Béné et al. (2010) state that "over-exploitation of a resource which is owned by many and not effectively managed by anyone, leads to [a] reduction in [the] catch and eventual poverty of users and others who would otherwise benefit from the harvests". Pinkerton and Weinstein (1995: 25) claim that "exclusion of outsiders from fishing space was the main mechanism used by the villagers to control fishing effort. This is one of the most common and universal mechanisms found in community-managed inshore fisheries." Ostrom (1990: 143) admits that "Sri Lankan fishers, who had devised an ingenious system for rotating access to an inshore fishery, found themselves unable to enforce an additional rule to prevent the entry of new appropriators". The importance of this is shown in the other cases of fisheries territory disputes between fishers from Kyoto, Japan, and Korean fishers (Makino 2008: 217). When Kyoto's bottom trawlers for snow crab were blocked from operating when Korean vessels entered Kyoto's offshore waters and set bottom gill nets during the fiscal years of 1997 and 1998, the government of Japan had to execute its role as the official authority in coordinating with its neighbouring country. Obviously, this role could not be done by the fishers' community of Kyoto or by any non-state actors.

Institutional Arrangements

Ostrom examines only the existing rules. She admits that

> these cases clearly demonstrate the feasibility (but obviously not the likelihood) of robust, self-governing institutions for managing complex CPR situations, but the origins of these systems are lost in time. It is not possible

> to reconstruct how earlier users of Swiss alpine meadows, Japanese mountain commons, the Spanish huertas, or the Pilippine zanjeras devised rules that have survived such long periods. (Ostrom 1990: 103)

However, collective action of a user group cannot take place in a vacuum. People and actors, including institutions, are both constrained and enabled by their surroundings (Delaney 2015: 268). According to Pomeroy and Berkes (1997: 468), both of the two well-documented cases of longstanding marine fishery co-management arrangements in Norway and Japan have a legal basis granted by the states. Collective action by fishers takes place in a local and national context, particularly in relation to the legal framework. Ostrom's approach tends to 'ignore how the local is created in conjunction with the external and constituted in relation to its context' (Agrawal 2003: 250–251).

The case of Chignik Salmon Cooperative in Alaska, according to Knapp (2008), provides insights into how important the national framework is for the survival of institutional arrangements for collective action. In 2001, after years of declining prices and harvests, a group of 77 local fishers out of the 100 permit holders in Alaska's salmon fisheries approached the Board of Fisheries, a state agency, affiliated with the Department of Fisheries and Game, to ask for a share of the total catch for those permit holders. Those actors wished to fish cooperatively in order to reduce costs, improve quality and increase value by reducing the number of vessels fishing in the fishery. In January 2002 the Board of Fisheries passed regulations on an allocation to a harvesting cooperative. This divided the fishery between a cooperative with about 80% of the harvesters and an open access fishery for the 20% who declined to join the cooperative. The board used its resources to help these fishers formulate the Chignik Salmon Cooperative, in particular providing its expertise on how to design the regulations for the cooperative and how to run it. Accordingly, the cooperative was established with 77 permit holders in January 2002. This was officially approved by the Board of Fisheries.

However, it is important to note that the constitution of the state of Alaska states that CPRs such as waters are reserved for the people for common use and denies any exclusive right of any groups in the natural waters of the state. Clearly, in this legal setting, the Chignik Cooperative was not legally sustainable. In 2005 the Alaska Supreme Court ruled that the Board of Fisheries had exceeded its authority when it allowed the majority of the salmon seine fleet for Chignik to form a fishing cooperative. The

lawsuit against the formation of the cooperative was pursued by two of the 23 permit holders who chose not to join the cooperative. They objected strongly to the establishment of the cooperative and filed a lawsuit to stop it. They claimed that it was unconstitutional. Initially the lawsuit was denied by the Alaska Superior Court in October 2002. Then, one fisherman, Michael Grunert, pursued the case with a powerful appeal to the Supreme Court of Alaska.

The establishment of the Chignik Salmon Cooperative was an interesting effort to respond to declining salmon prices by reducing the fishing costs through coordinated fishing. It is clear that collective action by fishers takes place under the umbrella of the state and cannot be considered separate from this overarching structure. The state in this case did use its resources to facilitate the formulation of collective action by fishers. However, owing to the lack of a clear supportive legal framework, the collective action by fishers was vulnerable to differing interpretations and finally was judged unconstitutional.

Institutions are thus both constrained and enabled by their surroundings (Delaney 2015: 268). This means that, in certain settings, some types of institution may be strengthened while others are weakened. In fisheries there are two main approaches to management: open access and limited access. The adoption of such rights regimes is made at the national level: by the state, not by fisheries communities. Collective action varies in the different settings of limited entry or open access. Therefore the success of collective action by fishers is usually directly linked to specific national legal settings. In other words, collective action by fishers cannot be considered to be separate from the national role of the state. For example, informal institution-building can receive support from centralized formal law, as in the V-notch lobster programme (Kosamu 2015: 366–367).

Fish resources under open access regimes can be viewed as impure public goods. They are non-excludable by definition of open access and subject to rivalry. This is consistent with the notion that well-defined property rights are lacking in open access fisheries. These characteristics of fisheries create incentives for the overexploitation of fish resources and overinvestment in fishing activities and gear. Under an open access regime the most common way to conserve the fisheries resources is to establish "a catch limit", which is normally determined as a result of stock assessments. Such catch limits are often called total allowable catches or (TACs). Under a TAC system, fishers are allowed to fish until the total catch reaches the

TAC. However, as entry into the fishery is free to anyone, the number of fishing boats tends to increase as long as the fishery is profitable. In contrast, limited entry regimes set up a system of Territorial User Rights for Fishing defined over a certain area of the sea, and grant these to a group of fishers and manage them collectively. This regime may encourage fishers to act collectively.

Sanctions introduced by Ostrom's approach are for community members, not for outsiders. In a community in which fishers know each other well, social norms may prevent the violation of the rules set by the community because of prestige, reputation and close relations. The rules and mechanisms that Ostrom discovered are very much about such internal dynamics: "The populations in these locations have remained stable over long periods of time. Individuals have shared a past and expect to share a future" (Ostrom 1990: 88). In the case of common land management in Hirano, Nagaike and Yamanoka villages in Japan, she reveals that "fines were imposed, but they involved making a donation to the village school, rather than the usual payment of sake". However, actions by outside user groups may undermine or destroy the management activities undertaken by the community. There may be other cases where outsiders exploit the resources in a way that is not in line with the community's rules. For example, in Tam Giang Lagoon in Vietnam, fisheries communities are threatened by destructive fishing techniques, such as explosives and electrical fishing tools used by outsiders. These methods are both against the rules of the fisheries communities in Tam Giang Lagoon and illegal in Vietnam. However, the outsider violators are aggressive and may punish those who detect or report their activities to the local authorities. In fisheries management, the role of the state to support communities in achieving sanctions against outsiders has largely been recognized by fisheries co-management scholars (Jentoft 1989; Pinkerton 2003; Berkes et al. 1991; Berkes 1994).

The successful co-management of the Lofoten fishery of Norway illustrates a form of co-management that has been in existence for more than 90 years. This is the largest cod fishery in the world in terms of catch and participation. The Norwegian government enacted special legislation for it, the Lofoten Law of 1897, which delegated responsibility for the regulation of the fishery to the fishers themselves. The law was a solution to problems of overcrowding and gear conflicts, because participants were numerous and space scarce (Jentoft and Kristofferson 1998; Lim et al. 1995: 198). Contained in the law are rules for the organization of fishers.

The various gear groups, together with representatives of the public, meet to establish the rules for the conduct of the fishery (Lim et al. 1995: 198).

In fisheries, conflicts take place not only among fishers but also with other groups, particularly conservation groups. In such situations, the state must provide solutions, particularly through the courts. Such an interaction is exemplified by the case *Natural Resources Defense Council (NRDC) v. Daley*, as presented by Shelley and Rijn (2014: 401). *NRDC v. Daley* was a lawsuit brought by a conservation group opposed to an approved fishery management plan. The plan for summer flounder, which is one of the most important flounder species in the USA, showed that the species was overfished and that overfishing was continuing. However, the regional management council of fishers proposed an annual catch that had a 3% chance of achieving a target fishing mortality rate (target F). The plan was rejected by the court, which suggested that the summer flounder quota had to have at least a 50% chance of staying below target F. This probability was considered but rejected during the planning process. Finally, the 50% probability was adopted throughout the fishers' council (Shelley and Rijn 2014: 401).

Other interactions are apparent in the case of Norway, which will be explored in Chap. 6 (Jentoft and Mikalsen 2014: 11–12). Tvedestrand is a small coastal municipality in the county of Aust-Agder, facing the North Sea. Here the pressure from recreational activities is greater than in many other areas of the country. There is thus a need for resource management, nature conservation and conflict resolution among different stakeholders competing for space and resources. In collaboration with the Institute of Marine Research, which has long been taking stock of the marine ecosystem and is stationed in the neighbourhood, municipal authorities initiated the Aktive forvaltning (Active management) project to establish a marine protected area. However, the Norwegian Fishermen's Association (NFA) and its regional branch strongly rejected the proposal, which includes 15% of the ocean area of the municipality and identifies four different functional zones: multiple use, fish farming, habitat and protection. The proposal was presented to the municipal assembly in March 2011 (Jentoft and Mikalsen 2014: 11). A no-fishing rule is proposed for the habitat and protection zones. The municipality initiated a hearing process and several stakeholder meetings were held, which resulted in some minor revisions. The plan was strongly criticized in the local media and attacked by the regional and local branches of the NFA. However, this did not prevent the municipal assembly from sup-

porting the conservation plan and the Ministry of Fisheries and Coastal Affairs of Norway from accepting the zoning proposal in June 2012 (Jentoft and Mikalsen 2014: 12).

External Environment

In Ostrom's approach, and as noted here, fishing communities are considered separately from the national context as an independent actor. Ostrom's eight institutional conditions, which emphasize the role of communities in managing natural resources, do not properly address the potentially important role of the state in fostering collective action by fishers in managing CPRs. In her thinking, the state is removed from the governance process. However, as discussed, the state is often a key contributory factor in fostering collective action by resource users, and it can provide different kinds of support for collective action by resource users. In societies with complicated interactions among different resources users, defining a clear status for a group of users, especially when that group shares resources with others, is crucial. It is difficult to imagine how a fisheries community's institutions could perform their role without such legal status.

Conclusion

This chapter has examined Ostrom's eight institutional conditions, which can be classified into three main categories: resource system characteristics, institutional arrangements and external environment. The analysis is based on this classification and reveals that the eight conditions are basically society-centric. In such thinking, potentially important roles by the state are overlooked in supporting collective action by resources users. The chapter shows that the state can provide significant support for resource users in various forms regarding the eight conditions: defining boundaries, introducing sanctions against outsiders, conflict resolution and fostering the formation of institutions for collective action. Most remarkably, as the complexity and high level of uncertainty of fish stocks often challenge effective management arrangements, the state is required to exercise its meta-governance functions to mitigate associated risks from such issues.

Ostrom's approach sheds new light in specifying institutional conditions for effective local participation in managing CPRs. In fisheries management in many countries, co-management has become a key focus since

the 1990s, with many efforts to establish local or regional co-management systems. Co-management scholars and practitioners have widely adopted Ostrom's key principles in exploring the contributory factors for successful implementation of the co-management concept in fisheries management in different contexts. Although Ostrom tends to avoid theorizing the role of the state, co-management scholars have complemented her approach by acknowledging the state's important role in supporting communities in CPR management. Chapter 3 explores a widely used management approach in fisheries—co-management—which involves a combination of state and associational actors in co-managing a CPR, such as fisheries.

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CHAPTER 3

The Fisheries Co-management Approach: Critiques and Theoretical Framework of the Research

Introduction

As discussed in Chap. 2, Ostrom's approach sheds new light on specifying institutional conditions for effective local participation in managing common pool resources (CPRs). However, it is society-centric and underestimates potential support by the state for resource user communities in managing CPRs. In fisheries management, in many countries, co-management has become a key focus since the 1990s, and there have been many efforts to establish local or regional co-management systems. In doing this, co-management scholars and practitioners have widely adopted Ostrom's key principles in exploring contributory factors for the successful implementation of the co-management concept in fisheries management in different contexts (Linke and Bruckmeier 2015: 171; Wamukota et al. 2012). In line with Ostrom's society-based approach, co-management scholars use the term "polycentric" to refer to a network of actors in co-management arrangements. However, when they adopt Ostrom's approach to search for successful models in fisheries management, they often acknowledge that the state can be a contributory factor in co-management, but they typically see fishers as the central actor in a polycentric network. Therefore the current co-management approach may also be considered essentially society-centric. This approach may hinder our understanding of the dynamic role that the state can play in supporting local engagement because co-management scholars tend to "ignore how the local is created in conjunction with the external and

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constituted in relation to its context" (Agrawal 2003: 250–251). Indeed, the approach here is that "The government is not seen as a threat and a troublemaker, but a potentially constructive partner" (Jentoft and Chuenpagdee 2015: 29).

According to Pinkerton (2003: 62), the co-management concept was first in use in the late 1970s, in the management of salmon under the Boldt Decision by the US Treaty Tribes in Washington State. However, in the area of fisheries, the practice of formalized power-sharing in resource management goes back further with the earliest documented legal arrangement of the Lofoten Islands cod fishery in Norway during the 1890s (Pomeroy and Berkes 1997: 474), and in Japanese inshore fisheries under Japan's 1901 Fisheries Act (Makino and Matsuda. 2005). Since the 1990s, in fisheries management, the co-management concept has gained increasing acceptance among governments, development agencies, researchers and practitioners as an appropriate arrangement for fisheries management systems. According to co-management scholars, co-management is a promising alternative to centralized fisheries management, which has proved ineffective. Co-management highlights the capacities and interests of local fishers and communities, and fisheries associations, complemented by the ability of the state to provide resources, such as enabling legislation and enforcement. Co-management in the sense used here implies a combination of state and associational actors to co-manage a CPR, such as fisheries. It is defined broadly as a governance arrangement whereby management responsibility is shared between the government and fishing communities (Delaney 2015: 268; Jentoft and Chuenpagdee 2015: 29; Pomeroy and Berkes 1997; Sen and Nielsen 1996; Symes 2006a; Nielsen et al. 2004; Pomeroy et al. 2010; Pomeroy and Rivera-Guieb 2006). The essence of co-management as an institutional response is a bargaining process among various groups with different power in controlling the allocation of rights over resources and gaining representation for determining those rights (Nielsen et al. 2004: 156). Co-management refers to a set of institutional and organizational arrangements (rights and rules) to define cooperation among the state fisheries administration and relevant fishing communities and their fisheries associations (Linke and Bruckmeier 2015: 173). In this approach, co-management scholars tend to define sets of responsibilities between the state and fishers as a group of users, and they do not properly focus on evolving factors in working relations between the two key actors in fisheries management, which are reflected diversely from case to case and from country to country.

This chapter provides a critical analysis of co-management scholars' thinking about the role of the state. It refers to the definition of power by Dahl (1957: 203) that "A has power over B to the extent that he can get B to do something that B would not otherwise do". There are three main approaches to the observation and measurement of power:

- control over resources;
- control over actors;
- control over events and outcomes (Hart 1976: 289).

The control over actor approach emerges as the best for the measurement of power of fisheries co-management because it is the only approach which enables the research to gain insights into a polycentric network by society-centric authors. As Bell and Hindmoor (2009: 190) argue, "power is a useful concept with which to analyse the limitations of the society-centered account of governance". This is because the society-centred account tends to overestimate non-state actors and often assumes that the state has been hollowed by non-state actors. Skocpol (1985: 9) defines state capacity as the power to "implement official goals, especially over the actual or potential opposition of powerful social groups or in the face of recalcitrant socio-economic circumstances". This concept enables the researcher to examine the exercise of state power by investigating who can make the final decisions when actors bring different ideas and interests to policy debates. This approach to state capacity challenges the view that the state is equal with other actors in fisheries co-management arrangements. Finally, in bringing together critiques of Ostrom's approach, co-management scholars' thinking and the state-centric concept of meta-governance, the chapter produces a research framework to investigate three selected case studies in fisheries co-management in Japan, Norway and Vietnam. This framework focuses on the resourcing function of meta-governance in relation to the eight institutional conditions established by Ostrom (1990). The chapter explores key highlights of current co-management scholars, especially equal power-sharing and decentralization to indicate that their approach is mainly community-centric. In addition, it analyses their polycentric approach by looking at their proposed network for fisheries co-management, in which fishing communities are central but are expected to interact with the state. In contrast, the chapter presents its main argument that co-management requires substantial support from the state in terms of resourcing and that the state is central in such an arrangement.

Critiques of the Fisheries Co-management Approach

Power-Sharing

It is widely accepted in the co-management literature that co-management is about power-sharing between local people and government. Power-sharing among different actors enables relations between them to be more equitable in co-management institutions or interactive governance arrangements (Pinkerton 2003; Jentoft 2007). According to Nielsen et al. (2004: 155), "empowerment of fishing communities is a mechanism to give the people within the fishing communities a chance to influence their own future in order to cope with the impact from globalisation; competing use of freshwater and coastal environments; and other fisheries-related issues". Therefore the state is required to make a clear commitment to sharing power and authority with local government and user groups such as fishers:

> The process of establishing co-management requires changes in the government organisation involved as a partner. It is necessary to accept that the empowerment process of co-management bodies is associated with a symmetric disempowerment of government agencies, which formerly had full control. There may be a need to develop capacity to deal with co-management processes in several communities simultaneously. (Nielsen et al. 2004: 156)

It is usually assumed that in most countries resource management falls under the jurisdiction of the central or state government. Co-management requires arrangements for sharing power and responsibility with users. For example, Jentoft (2005: 6) argues that empowerment is a core issue of co-management and emphasizes that co-management systems should have a strong focus on power-sharing. In co-management arrangements, the community develops a system of access rights and rules that are culturally and socially appropriate and form management institutions capable of monitoring and enforcing the system. To conduct monitoring on a day-to-day basis, such systems must develop the capacity to resolve resource-related conflicts and make changes to the co-management system over time, while the state provides the legal and political basis for co-management institutions to function and to encourage institutional development at the local level (Nielsen et al. 2004; Pomeroy and Berkes 1997; Ratner et al. 2012; Jentoft 2007; Berque and Matsuda 2013: 195). Scholars argue that within

a co-management system, government and fishers must work jointly to develop an agreement on the objectives of co-management, including the aims, the form and the means. A clear understanding of the long-term goals of power-sharing is established in which the differing interests and needs of government and fishers are reconciled. Co-management requires commitment from government to share authority, since authority must be devolved to community organizations for them to effectively enforce the local co-management system. However, this is often an unrealistic expectation since states are often unwilling to give too much authority to local communities. In fisheries management, key reasons for the state to hesitate in sharing authority with local communities include the fishers' lack of both appropriate knowledge and the capacity to organize themselves to carry out management tasks.

Power-sharing depends on different levels of the resource-using community's participation in decision-making processes (Berkes 1994; Sen 1997; Pomeroy and Berkes 1997). The lowest level of power-sharing can be seen as "informing", where the resource users are passive actors and are informed about what government has decided to do. The highest level of power-sharing involves the delegation of substantial authority to resource users (Berkes 1994). Berkes (1994) and Sen and Nielsen (1996) emphasize the same rights of resource users and the government in making decisions regarding resource management as a precondition for the equal sharing of power. Some authors suggest that equal power-sharing cannot be considered as an end product (Carlsson and Berkes 2005; Sandström and Rova 2010). They argue that negotiation, development of trust and building of institutions among actors help to enable power-sharing (Berkes 2007).

With the broadening co-management debate, the issues of power- and knowledge-sharing have become important in addressing various resource management problems simultaneously, such as overfishing (Linke and Bruckmeier 2015: 171). In co-management, sharing power also means sharing responsibility for a resource. Especially in developing countries, the lack of recognition and involvement of small-scale local fishers in fisheries management has been a focus (Sowman et al. 2013; Béné et al. 2009; Wilson et al. 2006; Castello et al. 2011; Pomeroy 1995). To achieve a balanced representation in decision-making, there has been a shift of arrangements in which local communities and governments share responsibility for a resource. The idea is to achieve equal power-sharing (strong government interacting with strong communities, but its application has varied widely, especially in small-scale fisheries management where the

socio-ecological context is quite complex and diverse (Allison and Ellis 2001; Evans et al. 2011). These partnerships require high levels of compliance from local communities and significant support, information sharing, consultation, advice and cooperation from government (Sen and Nielsen 1996) in order to manage CPRs sustainably. However, Hara and Nielsen (2003) point out that co-management in Africa appears to be more of an illusion than an empowerment of local fishing communities. They suggest that local fishing communities need to develop their ability to achieve the objectives of all players.

Therefore co-management often requires competence-building and confidence-boosting among co-managers. Co-management is more a question of levelling the playing field by arming stakeholders with the tools necessary to become just as effective in the political process as other stakeholders, so that they can negotiate from strength rather than from a weak position. As Sowman et al. (2013: 314) argue, "empowerment is secured when resource users are in a position to participate as equal partners in negotiations, give input on management decisions, and ultimately achieve self-control". Empowerment therefore would imply the creation of countervailing power, as when people acquire education so that they can understand the forces that are impinging on them. Countervailing power is also generated when communities organize, and through that become more effective in the management decision-making process (Jentoft (2005: 6). In support of this view, Béné et al. (2009) and Isaacs (2012) blame the central state for the collapse of co-management arrangements. They argue that when central states fail to devolve power to local communities in co-management or community-respecting arrangements, and consistently take a position of commanding, imposing and enforcing alien rules and regulations, the negotiated fulcrum is lost, illegal activities may emerge and the management system is likely to fail. They observe that the approach in Africa, for example, has generally been hasty, ceremonial top-down devolution of some aspects of management from central states to local communities, resulting in an imbalance of power and interests. Berkes (2009: 1699) argues that the degree of power-sharing is an important factor in identifying different maturity stages of co-management. It is clear that by emphasizing power-sharing, co-management authors tend to empower the community to a level that the fishing community is equal with the state. However, fisheries co-management scholars acknowledge that the state and its agencies hesitate to share power with fishers owing to "the lack of appropriate knowledge and know-how on the part

of the fishers, and the ability of fishers to organize themselves to manage for long-term sustainability" (Pomeroy and Berkes 1997: 467). Indeed, "even in countries with high standards of education, it is true that fishers tend to have lower levels of formal education than the general population" (Pomeroy and Berkes 1997: 467).

Decentralization

Together with power-sharing, decentralization is considered to be a precondition that can enable co-management. Fisheries co-management scholars suggest that fisheries communities play a central role in governance processes. Co-management scholars suggest that significant authority be devolved from the central government to local communities. According to them, decentralization can provide greater legitimacy for fisheries regulations when fishers are engaged in shaping those regulations. According to Pomeroy and Berkes (1997: 469), decentralization refers to "the systematic and rational dispersal of power, authority and responsibility from central government to lower or local level institutions". Decentralization in co-management basically refers to giving power from the state and its agencies to resource users groups so that resource users can carry out management tasks.

Co-management scholars often refer to the system of fisheries cooperative associations (FCAs) in Japan as a typical example of decentralization (Pomeroy and Berkes 1997: 475). The FCA (explored further in Chap. 4) is given the mandate to design a management plan for each of the fishing rights it holds. The Japanese coastal fishery is co-managed using a system that provides regulatory authority at the national and regional levels, and decision-making power mainly at the local level. The Fisheries Law of 1901 (updated in 1949) converted the hereditary fishing rights and privileges that were granted by feudal lords into exclusive fishing rights. The FCAs are granted mandates over many aspects of the coastal fishing activity within their immediate jurisdiction by implementing and enforcing national fishery laws and regulations, which are supplemented or complemented by those made locally. For example, the FCA has the responsibility of allocating its fish quota after receiving the total quota allocated by the prefecture. The national government establishes the total allowable catch for the offshore and coastal fishing areas.

There is often a gap between such theory and the practice of decentralization (Berkes 2010: 492). Extensive devolution to communities may

cause problems of unaccountability and inequality. Local communities may create inequitable social systems that marginalize certain groups; they may be vulnerable to the problem of elite capture; or they may neglect the general public's interest in environmental protection (see Table 3.1).

One caution is that decentralization is no guarantee of fairness or equity in resource-sharing. In some cases, participatory processes may be reduced to a bureaucratic mechanism in which some groups are able to pursue their private interests at the expense of other, less powerful stakeholders. As we shall see in Chap. 6, Mikalsen et al. (2007) provide a concrete example from Norway. The Norwegian Fishermen's Association, which has long been a privileged partner in co-management, gradually came to be dominated by large-scale operators and offshore trawler interests. It changed from being an inclusive organization and a defender of social responsibility, to one defending the narrow economic interests of a select group. In Mikalsen et al's words, "the transformation of the Association [was] from something akin to a public interest group to a trade union" (2007: 207). The association relieved itself of the responsibility for maintaining employment opportunities in coastal communities and instead sought to boost returns and was taken over by a number of wealthy members (Mikalsen et al. 2007: 205–206).

The substantial authority and responsibility given to local fishers under decentralized fishery management systems can in some cases be an obstacle to effective management when fishers consider their economic loss to

Table 3.1 A gap between theory and practice regarding decentralization

Theory of decentralization	*Practice of decentralization*
Participatory development and greater efficiency for local priorities	Local jurisdictions not receiving sufficient powers or resources
Increased voice for local communities, empowerment and democratization	Elite capture of resources, as powerful locals take advantage of uncertainties or greater access to resources
Poverty reduction through equitable access to resources	Marginalization of poor and disadvantaged groups
Greater accountability in local governments	Lack of representativeness of decentralized bodies
Local conflict resolution and more sustainable resource management outcomes	Creating more local conflicts and social tensions, some leading to resource overuse

Source: Adapted from Berkes (2010: 492)

be more important than conservation objectives. For example, local fishers and the general public may not agree about which species of fish are most important to protect, and that decisions must be unanimous, as is typical in these organizations. A lengthy process of discussions and negotiations among fishers often slows down the adaptation of new technologies and/or their adjustment to changing natural and social conditions. Take the introduction of increased mesh size of fish nets, for example. On the scientific advice of fisheries researchers that increasing the mesh size of gill nets is necessary for selective fishing, an association of fishers has to mobilize support from its members and requires consensus before taking action. Fishers are often concerned about the costs incurred from buying new nets with wider mesh. Therefore, some may oppose the proposal because either they cannot afford a new net or simply they do not want to bear the cost of such a change. In such a situation, the status quo is often preferred. As a result, potential positive changes are often blocked or delayed until a unanimous agreement is reached.

A Polycentric Network

Some authors still hesitate to justify the role of the state (Carswell 2003; Jentoft et al. 2003). Jentoft et al. (2003: 299) argue, for example, that "an alternative agent like the state is not always needed and community level institutions play a greater role in fisheries management if they are allowed and equipped to do so". However, many scholars acknowledge the role of the state in working with communities in managing common resources. However, researchers and practitioners still have not moved beyond the notion of self-governance by fisheries communities in a "polycentric" network (Folke et al. 2005: 449; Pomeroy and Berkes 1997; Pomeroy and Williams 1994; Sen and Nielsen 1996; Nielsen et al. 2004; Pomeroy et al. 1999; Pomeroy and Rivera-Guieb 2006). This thinking is questionable and hinders a proper understanding of the potentially more comprehensive roles played by the state, thus limiting wide application of the co-management concept in current fisheries management. As noted above, the social centric approach typically used by co-management scholars stresses the importance of power-sharing and insists on decentralization, which are considered to be preconditions for effective co-management arrangements. Co-management scholars often argue that equal sharing of power occurs when the resource users have the same rights as the government in making decisions regarding resource management. This is clearly a society-centric approach.

Co-management authors tend to overemphasize the qualities of fishing communities. Take the importance of knowledge, for example. According to them, the effectiveness of fisheries management is expected to increase under co-management arrangements because acceptance of management measures is assumed to be more widespread when there is greater involvement by users in the decision-making process, and when users' knowledge is included to enable the contents of management measures to be more adequate and to better reflect local conditions (Nielsen et al. 2004: 154). Nielsen et al. (2004: 156–157) argue that "the incorporation of local level and indigenous knowledge into fisheries management is likely to minimise adverse social and environmental impacts of management and lead to more socially and environmentally sustainable systems". While local knowledge is useful, this view neglects input from expert, scientific knowledge of different types provided by the state.

In line with Ostrom's society-based approach, co-management scholars use the term 'polycentric' to refer to a network of actors in co-management arrangements. The scholars argue that fishers can often develop their own rules for management in addition to those created by government. For example, fishers may establish rules defining who has access to a fishing ground and what fishing gear can be used (Pomeroy and Berkes 1997: 469). The scholars claim that effective governance often requires multiple links across levels and domains, and seeks overlapping centres of authority (Folke et al. 2005: 449); and that "a co-management arrangement that relies on a single support organization or a single key leader is vulnerable" (Berkes 2009: 1699). Figure 3.1 identifies key actors in co-management arrangements of fisheries resources. The network includes the state and its agencies, fisheries communities, and non-state actors such as non-governmental organizations (NGOs) and academic institutions. In this designated network, each actor is assumed to be equal to every other; fishers have direct connections with non-state actors and stay in an equal position with the state. The network is similar to model 1 by Knoke (1990: 41) (see next section) in which the state reduces its power in relation to that of other actors in the network. For example, Griffin (2009: 573) suggests that "a hierarchy of knowledge is replaced by a more balanced diversity of knowledge".

In this type of co-management network, the state (consisting of government (national, regional and local level) is expected to be an equal actor with other actors, such as NGOs and academics. It is assumed that those organizations can help with research activities and capacity-building,

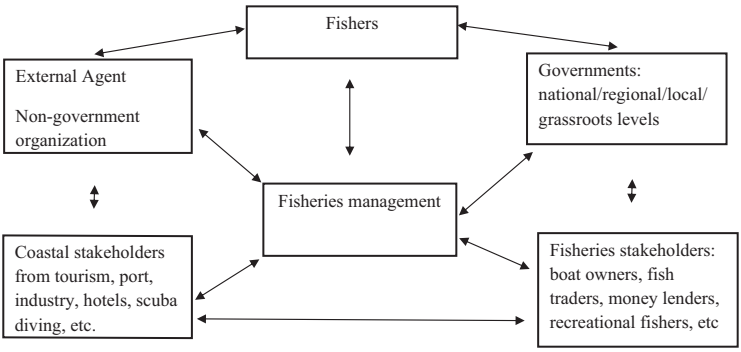

Fig. 3.1 Horizontal links between fishers, state and other actors in co-management (Pomeroy 2001: 114)

advocacy, links, extension and pilots, and standard setting. Fisheries institutions that consist of communities, groups, organizations and so on can carry out management tasks and design local management plans on their own. They are also expected to undertake custodian/stewardship of resources, formulation/observance of local rules and regulations, and conservation and resource enhancement (Pomeroy 2001: 114).

Obviously, using a polycentric approach, co-management scholars aim to include a large number of actors, which are both directly and indirectly linked to fisheries governance arrangements. In some cases, up to twenty actors are identified. Berkes (2009: 1699) argues:

> In the case of developing countries, these networks can include a surprisingly large number of support organizations … The presence of as many as 20 support organizations in some of the cases may be explainable in part by the specializations of these support organizations, in part by the maturity stage of the case (older cases have more partners), and in part by the apparent need for redundancy of partners by function.

Such actors may have some indirect relation to fisheries management practices, but the links between their performance and management practices are often vague. Including such indirect actors in the policy network is likely to make the network confusing with too many actors. This is one of the limits of co-management scholars when defining a co-management arrangement. The limitation of such a polycentric approach is acknowledged by Jentoft and Chuenpagdee (2015: 29), who argue that these arrange-

ments "contribute to complexity in fisheries by increasing the number of possible relationships, interactions and transaction costs. The broader the participation, the more cumbersome is the process." This approach can hinder our understanding of the dynamic role that the state can play in supporting local engagement as co-management scholars tend to "ignore how the local is created in conjunction with the external and constituted in relation to its context" (Agrawal 2003: 250–251). Therefore the next section aims to engage the concept of meta-governance, which highlights the state's role in governance arrangements. To understand why the state can be central to such a network, it is relevant to discuss state capacities in terms of both institutional and relational qualities.

According to Nielsen et al. (2004: 153), processes of fisheries governance include setting objectives, providing knowledge and third implementation. In polycentric arrangements, an initiative by the state, considered to be a top-down approach and defined as "instrumental co-management" (Nielsen et al. 2004: 154), is strongly criticized because a state's interventions are said to result in a lack of involvement, even frustration, of fishing communities:

> When co-management was initiated, it created huge expectations for genuine participation and empowerment, but the practical adaptation of the co-management turned out to be business as usual and not an institutional reform. This has led to frustrations and [a] lack of achievement of objectives. (Nielsen et al. 2004: 155)

As shown in Fig. 3.1, Pomeroy (2001: 114) suggests that the state, fishers and other actors, such as NGOs, researchers, coastal businesses and fishing-related businesses, can be involved in co-management arrangements in horizontal links. Fisheries co-management scholars often suggest that the state's role is limited only to that of a facilitator, providing legal and political support for co-management institutions at the local level (Nielsen and Vedsmand 1999; Pomeroy and Berkes 1997). Therefore they suggest that governments should encourage communities to form their own co-management institutions rather than rely on official government-sponsored organizations imposed from above (Pomeroy and Berkes 1997). This approach requires government to devolve authority to community organizations for them to effectively enforce the local co-management system. This society-based approach is similar to what Ostrom refers to as a polycentric network. It is a concept that has limited involvement by the state in working with fisheries associations in managing fish resources.

Using such a polycentric approach, co-management scholars consider community to be a self-governing actor that can have direct links with other actors (Folke et al. 2005: 449). Those links are assumed to be independent from the state. This approach overlooks the potential influence of the state on those links in working with fisheries communities. As a result, co-management scholars have overlooked the ability of the state to bring other actors to fisheries communities as a supporter or a competitor. Understanding such state capacities can provide insights into why co-management in fisheries has been successful in countries with strong state capacities, such as Japan, as discussed in Chap. 4.

Theoretical Framework of the Research

To understand how governments can integrate and drive such networks, it is useful to refer to the structural approach to the study of policy networks developed by David Knoke (1990: 40). This approach helps to explain how an actor becomes central to a network thanks to their structural position. Knoke presents three possible models of networks for four actors: A, B, C and D. In the first model, all actors are connected to each other. In the second model, A, B and C are connected only to D (Knoke 1990: 40). In the third model, A, B and D are connected with one another and C is connected only to D. According to Knoke, D gains the most powerful position in the second and third models when A, B, C have to depend on D for information: "assuming that capacity to control the flow of information or resources is a measure of network power" (Knoke 1990: 41). In a similar network of fisheries co-management arrangements, governments with their powerful resources usually take the central position as D does in the second and third models. This position enables the government to connect to different groups, to drive them in achieving state goals, to bring in new actors or weaken/assist actors, and to take advantage in bargaining/negotiation processes with other actors so that government preferences are accepted by other non-state actors (Fig. 3.2).

Governments continue to exercise considerable power. They do not simply act as one actor within polycentric networks. They also have an authority that no other actors can possess—to design/select the governance rules and act as a court of appeal for disputes between other actors (Bell and Hindmoor 2009: 188). These capacities of the state in fisheries are acknowledged by Pomeroy and Berkes (1997: 469): "the government, through legislative and policy instruments, defines power sharing and decision-making arrangements".

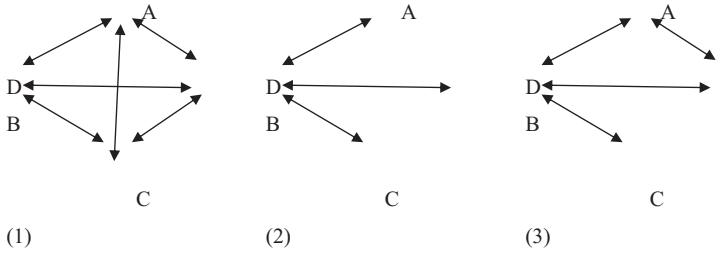

Fig. 3.2 Network and structure (adapted from Knoke 1990: 41)

In other words, in addition to being a major actor in specific governance arrangements, the state often practises its meta-governance role in such arrangements (Bell and Hindmoor 2009: 69). States meta-govern those arrangements by overseeing, steering and coordinating them; selecting and supporting the key participants; mobilizing resources; and ensuring that wider systems of governance are operating fairly and efficiently (Bell and Hindmoor 2009: 191). They also retain considerable powers to set agendas, and they often identify policy problems, frame debates and advance policy solutions (Bell and Hindmoor 2009: 188). Governments can decide which issues to address, how to structure consultation processes and how to set the boundaries of these processes. Governments can use their central location in networks to set the objectives of any partnership arrangement, the issues to be decided, the way in which those issues are framed and the order in which issues are to be addressed (Bell and Hindmoor 2009: 189). As Lister and Marsh (2006: 255) argue, "modern governance involves the state in more complex relationships with other governmental and societal actors, but it doesn't inevitably reduce its role or power".

State Capacities

To understand how the state can be central in such a network of actors in co-management arrangements, it is relevant here to discuss the concept of state capacity, which can be defined through both institutional and relational aspects. Institutional arrangements can be a key aspect. Krasner (1985: 228) observes:

> The ability of a political leader to carry out a policy is critically determined by the authoritative institutional resources and arrangements existing within a given political system. Industrial policy can be orchestrated in Japan

> through the Ministry of International Trade and Industry. There is no American institutional structure that would allow a political leader, regardless of the resources commanded, to implement a similar set of policies.

Regarding institutional capacities, strong states typically have centralized political and administrative authority. Bureaucratic and administrative resources, such as high-quality information, forums of active policy debate, and expert, dedicated and experienced staff in key areas of policy formulation and implementation, present a vital component of state capacity (Bell and Hindmoor 2009: 61). Fiscal resources, policy instruments and legitimacy are other determinants of state capacity (Bell and Hindmoor 2009: 62).

State capacity also has relational components involving the nature of the links between the state and society. Skocpol (1985: 9) defines state capacity in terms of autonomy, and autonomy in terms of the ability of government to "implement official goals, especially over the actual or potential opposition of powerful social groups or in the face of recalcitrant socio-economic circumstances". In this approach, state capacity is defined in terms of command and control over strong social groups. However, according to Bell and Hindmoor (2009: 66), it is often challenging for a state that is too insulated from society when it needs to implement its goals. In contrast to Skocpol (1985), Mann (1988: 5) points out that those strengthening ties to society have been an effective way for states to enhance their policy capacity. According to him, infrastructural power refers to the way in which states can "actually penetrate civil society, and … implement logistically political decisions" (Mann 1988: 5). State capacity requires states also to develop close working relationships with non-state actors (Hobson 2000: 234). In such a relationship, the two sides may achieve a win–win situation. Governments often benefit from the expertise, support or assistance of communities, interest groups and NGOs. These benefits may enable them to successfully formulate and implement policy. In return, these groups working in close relations with governments are often rewarded with policy influence (Bell and Hindmoor 2009: 64). However, according to Bell and Hindmoor (2009: 66), in developing their ties with civil society, states are vulnerable to being captured by non-state actors. Therefore "a capable state needs to be able to achieve its goals by working with and encouraging such private actors while retaining the necessary authority to avoid slipping into relations of clientism, capture, rent-seeking, corruption or other manisfestations of government failure" (Bell and Hindmoor 2009: 66).

Meta-governance

The concept of meta-governance is still a matter of debate, as Sørensen (2006: 101) acknowledges: "governance theorists do not define the concept of metagovernance precisely". Currently there are two different approaches to defining meta-governance (Daugbjerg and Fawcett 2015: 5). In the society-centric approach, meta-governance can be exercised equally by both public and private actors. In the words of Sørensen (2006: 103), "metagovernance can potentially be exercised by any resourceful actor, public or private". As in the case of Shell in Nigeria in which "civil regulation often starts as a local movement that first gains national and eventually international momentum", Steurer (2013: 403) argues that private meta-governance is both possible and evident. In this approach, however, the use of "private actors" is questionable, especially in overestimating the capacities of non-state actors. Take accountability, for example. In the case of governance failures, no non-state actors can be held accountable. In addition, in many cases, firms or sectional interest groups may lack legitimacy. In contrast to non-state actors, states can use command-and-control mechanisms such as legislation and coercion, and immense resources through compulsory taxation to meta-govern any mode of governance (Bell and Hindmoor 2009: 55).

As the central focus of the research is on the key role of the state in facilitating collective action in fisheries governance, this research adopts a state-centric meta-governance approach that "focuses explicitly on practices and procedures that secure government influence, command and control within governance regimes" (Whitehead 2003: 8). This state-centric concept of meta-governance enables the research to argue that collective action by fisheries communities often takes place under the umbrella of the state and overarching state-centric governance structures. The research pays specific attention to the roles of the state in providing resources and fostering networks of actors in fisheries management in support of fisheries communities. Bell and Hindmoor (2009: 55) argue that governments are best placed to perform this role because they often have the resources and legitimacy to oversee governance arrangements at lower levels. However, as they acknowledge that meta-governance is always vulnerable to under-or over-regulation, it requires effective meta-governance without inhibiting local capacity.

According to Bell and Hindmoor (2009: 47), governments should carry out meta-governance functions in any governance arrangement

in which they are involved. As noted in Table 3.2, Bell and Hindmoor (2009: 47) suggest six functions of meta-governance: steering, effectiveness, resourcing, democracy, accountability and legitimacy. Steering requires the state to act to ensure that overall strategic management goals are met, including goal-setting, coordination and control of specific governance arrangements. Effectiveness requires the state to monitor the performance of any governance arrangements for remedial action in any cases of inadequate performance. Resourcing refers to the important aspect of meta-governance in ensuring that governance arrangements are properly resourced. The resources may include leadership and authority, fiscal or administrative resources, in-depth policy expertise, information, and the capacity to promulgate laws or shape rules or norms. Democracy refers to ensuring compliance with democratic practices and norms. Accountability is about clear lines of responsibility. Lastly, the legitimacy of governance arrangements is defined by whether or not they are popularly accepted. According to Fritz Scharpf (1997, 1999), there are two dimensions of legitimacy relating to the inputs and outputs of the political system. Input legitimacy requires that political choices are democratic and accountable. Output legitimacy requires the actions to be effective.

Table 3.2 Types of meta-governance function

Types of meta-governance function	*Components*
Steering	Ensuring that overall strategic management goals are met, including goal setting, coordination and control of specific governance arrangements
Effectiveness	Monitoring the performance for remedial action in any cases of inadequate governance arrangements
Resourcing	Providing leadership and authority, fiscal or administrative resources, in-depth policy expertise, information, or the capacity to promulgate laws or shape rules or norms
Democracy	Ensuring compliance with democratic practices and norms
Accountability	Providing clear lines of responsibility
Legitimacy	Being popularly accepted: political choices are democratic and accountable (input legitimacy), and actions are highly effective (output legitimacy)

Adopted from Bell and Hindmoor (2009: 47)

Analytical Framework

Adequate resources—especially resource inputs of knowledge, fiscal resources and expertise—the are usually central to effective co-management of fisheries resources, given the complexity and uncertainty involved. Therefore although there are various options for the state in a meta-governance role, in this study I examine key issues related to the resourcing function. From the perspective of resourcing, the research argues theoretically that rather than being equal with fisheries associations and other actors in governance processes, the state often plays a central role in such governance processes. Accordingly, the success of collective action by fishers is often linked to the state's capacities and its support for fisheries associations. The concept of meta-governance via the resourcing function is engaged in association with Ostrom's (1990) eight conditions to explore potential roles that the state can play in fostering collective action by fisheries communities, as summarized in Table 3.3.

Table 3.3 Summary of relationship between meta-governance via the resourcing function and Ostrom's institutional conditions

Ostrom's enabling conditions	*Associated challenges in fisheries*	*Resourcing as a meta-governance function*
1. Resource system characteristics: well-defined boundaries	Uncertainty and complexity of the resource	Providing in-depth expertise/ knowledge in understanding the change and uncertainty of fish stocks. Supporting fishing community in coping with overfishing, stock crisis.
2. Institutional arrangements: • Graduated sanctions • Conflict-resolution mechanisms 3. External environment: one small common pool embedded in a larger system	• Rules violations by outsiders • External factor-related conflicts, such as understanding gaps, lack of knowledge • Concerting a network of different actors	• Setting up a legal framework in favour of collective action; providing authority to strengthen enforcement. • Deploying knowledge/ information with which to shape cognitive expectations. • Creating/maintaining a governance network which includes different actors in the perhaps external arena of fisheries management. • Engaging new actors to help fishing communities. • Setting up a legal framework in favour of collective action.

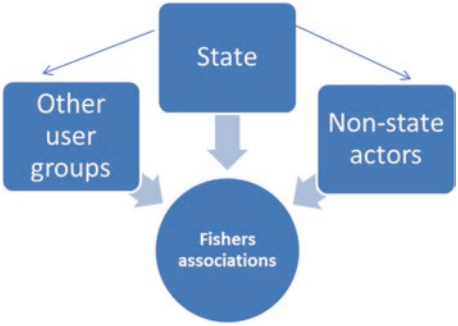

Fig. 3.3 Vertical links between the state and the fishers association

My approach is different from that of many co-management scholars because I argue that rather than being equal with other actors, states are often meta-governors, and therefore the co-management arrangements are not polycentric but state-centric. In doing this I also adopt the policy networks approach developed by David Knoke (1990: 40) to explore case studies, in which the state is located in the central position in the fisheries co-management network (see Fig. 3.3).

Conclusion

This chapter has examined current approaches in fisheries management under the banner of co-management. It shows that Ostrom's eight conditions are influential in current co-management approach in fisheries. In contrast to Ostrom, co-management scholars have advanced the conditions for successful collective action by including the state in governance processes (Pomeroy and Berkes 1997; Sen and Nielsen 1996; Nielsen et al. 2004; Pomeroy et al. 2010; Pomeroy and Rivera-Guieb 2006). By investigating key arguments by co-management scholars, including power-sharing, decentralization and a polycentric network in fisheries governance, the chapter indicates that their approach is largely society-centric, even when they acknowledge various roles for the state in working with fishing communities. Arguably, this co-management approach still hinders our understanding of the substantial role that the state can play in working with fisheries communities to manage fisheries resources. Co-management systems may need to move beyond notions that co-management arrangements are simply polycentric. Linke and Bruckmeier (2015: 180) acknowledge that in current co-management arrangements

"complexity and uncertainty remain as final and continuing problems to address". As discussed in Chap. 2, the complexity and uncertainty of fish stocks often challenge effective co-management arrangements. Here the state is often required to exercise its meta-governance functions to mitigate associated risks from such factors. As later chapters show, the state can often find appropriate ways to achieve its governance goals.

The most important question in fisheries governance is to understand how networks are set up, and whether the actors are equal. Based on the critiques of Ostrom's approach and current co-management thinking, the research engages the state-centric concept of meta-governance, which allows a greater role for the state when working with fishing communities. This approach is essentially novel in fisheries management, and it acknowledges the role of fishing communities and the central role of the state in fisheries management. This book intends to make contributions to the current debates in defining and reinforcing the concept of meta-governance. However, as Bell and Hindmoor (2009: 70) acknowledge, meta-governance "is always vulnerable to under-or over regulation". This raises interesting questions that require in-depth investigations of the working relations between the state and fisheries associations in the three case studies of fisheries co-management at three different levels: the national level (Norway), the local level (Japan) and the grassroots level (Vietnam). The central focus of this research is, accordingly, on how the state can use its resources to support fishing communities in fisheries governance networks at various levels, from the national level to more micro-levels. The case studies aim to support the central argument that in current fisheries co-management arrangements the state remains the most powerful actor, and the networks are essentially state-centric.

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CHAPTER 4

Akita Fisheries Cooperative Associations, Japan

Introduction

As discussed in Chap. 2, co-management is defined broadly as a governance arrangement whereby management responsibility is shared between the government and fishing communities, where sets of responsibilities are divided between the state and fishers as a group of users. Co-management scholars often argue that "a co-management arrangement that relies on a single support organization or a single key leader is very vulnerable" (Berkes 2009: 1699). In the co-management approach, the state and fishers are expected to be largely equal actors in the networks of fisheries management. In contrast, this chapter argues that, rather than being equal, the state plays a central role in the network of fisheries co-management. Furthermore, by investigating the crisis dynamics of the sandfish stock in Akita during the late 1980s and early the 1990s, the study focuses on understanding how the state can hold the central position in the fisheries management network and the working relationship between the state and fisheries associations. In doing this, it aims to suggest remarkable resources held by the state that allows it to be centric.

As discussed in Chap. 2, Ostrom's eight institutional conditions, which greatly emphasize the role of communities in managing natural resources, are essentially a local or a society-based approach and do not properly address the potentially important role of the state in fostering collective action by fishers in managing common pool resources (CPRs). Ostrom (1990) is most concerned with defining the necessary minimal requirements

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relating to the successful management of CPRs, and is concerned primarily with communities and institution-building. She suggests that institutions can prescribe, proscribe and permit certain types of behaviour. In her thinking, the state is removed from the governance process. Ostrom (1990: 101) observes that "the fishers themselves may be able to enforce the rules themselves". In contrast to her approach, as this case reveals, sometimes the most important driving factor may come from external influences, especially from the state. Thus this chapter investigates areas which require state activities in support of Ostrom's eight institutional conditions in terms of the three classifications discussed in Chap. 2—namely, resource characteristics, institutional arrangements and external environment. This chapter examines the institutional arrangements that constitute the fisheries association and examines the dynamics of a specific crisis related to that association. The analysis of both shows the state centricity of the policy area and how that supports a number of Ostrom's institutional conditions for collective resource use. The significant support from the state, especially in terms of resources such as in-depth knowledge and fiscal resources, is a key concern of the chapter. This shows the fundamental nature of state capacity and meta-governance.

By engaging the state-centric concept of meta-governance, which "focuses explicitly on practices and procedures that secure government influence, command and control within governance regimes" (Whitehead 2003: 8), the chapter aims to support its central argument that the state can use its resources to support collective action by fishers. It argues further that collective action by fisheries communities is often taken under the umbrella of the state and overarching state-centric governance structures. Resourcing refers to the important aspect of meta-governance in ensuring that governance arrangements are properly resourced. This is the main focus in this chapter. The resources explored include the capacity to promulgate laws, fiscal resources, in-depth knowledge and policy formulation, largely in support of fisheries associations. In particular, the chapter shows in this regard that the state resources were crucial in

- defining the internal and external relationships and the boundaries of the fisheries cooperative association (FCA);
- educating fishers during the uncertainty of a crisis in a way which ensured sustainability, while bankrolling their economic survival as their primary means of making income was taken away.

In both cases the state can be considered to be the fundamental player in the associations' survival.

Synopsis of Fisheries Management

Japan is acknowledged by many fisheries co-management authors as being the long-time successful model of fisheries co-management in the world. In exploring the concept of meta-governance of Japanese fisheries, the chapter first investigates how the Japanese state sets up the legal framework for a FCA. This is about institutional management. This meta-governance role is highlighted by the fact that a detailed and strong legal framework has been set up, particularly the Fisheries Law and the Cooperative Fisheries Law. Accordingly, the FCA has a strong mandate recognized by law. The Japanese fisheries management system adopts a limited entry regime, commonly referred to as Territorial Use Rights Fisheries (TURFs), that clearly delineate spatial zones in the near shore coastal environment (Uchida 2005: 4; Matsuda et al. 2010: 899; Sakai et al. 2010: 711). Fishing rights are analogous to TURFs (Christy 1982: 4), which are granted by the government and protected by law (Uchida and Makino 2008: 223). Limited access to the resource ensures the collective interest of the local community in using the ecosystem sustainably (Berque and Matsuda 2013: 197). The boundaries of each area are defined in relation to those of the local municipality and extend outwards into the sea within their TURFs. Exclusive access rights within each TURF are managed and coordinated by local FCAs.

Historically, in Japan, collective action by Japanese fishers were documented during the feudal era. Fishers then were those who lived in coastal villages and did not have enough arable land to grow rice. To protect their fishing areas against outside poachers, fishers' groups formed guilds and the feudal lords granted TURFs to them, encouraging the guilds to work out solutions among themselves. In 1948 the Fishery Cooperative Law transformed the guilds into FCAs (Carnaje and Harina 2009: 7). A local FCA is composed of local fishers and is basically established in each fishing community. In order to collectively manage the fisheries within their TURFs, a local FCA has established operational regulations that stipulate gear restrictions, as well as closures of fishing grounds (on a seasonal or area basis). In this study, "fishing gear" means an instrument employed by fishers to catch fish. Fishers manage fisheries resources by implementing

and enforcing various strategies, generally guided by overarching prefectural and national constraints and targets.

The Akita Fisheries Cooperative Association has 12 FCAs. All are involved in coastal fishing, and three are engaged in the offshore harvesting of sandfish. The offshore fishery harvests sandfish by bottom trawling and functions from September to June. Interestingly, many fisheries co-management authors highlight the fact that the key factors in the success of fisheries co-management in this case is self-governance by the FCA, in which they assume fishers independently made the decisions on closing down the sand fish industry for three years from 1992 to 1995 (Berque and Matsuda 2013: 197; Uchida 2010: 246; Matsuda et al. 2010: 899). In contrast, my argument is that the state played a central role in making the moratorium happen and supporting it. To back up this argument, I pinpoint some key facts:

- The FCA is given a strong mandate and functions under the territory rights regime adopted by the state.
- The moratorium of 1992–1995 was originally initiated by the local government of Akita Prefecture.
- The local government brought in the Fisheries Research Institute of Akita Prefecture to provide in-depth knowledge about the causes of the serious decline in sandfish stocks before 1992, which convinced fishers to adopt voluntary compliance with the moratorium.
- The local government and the national government of Japan provided a large amount of fiscal resources to enable the moratorium.

Institutional Arrangements

Mandating the Non-state Actor

This section explores how the state established a strong legal framework to encourage collective action by fishers via the FCA. In Ostrom's approach, fishing communities are considered separately from the local and national legal contexts as an independent actor from the state. As this section shows, however, collective action by fishers takes place in a local and national policy context, constituted by the legal framework. In societies with complicated interactions among different resource users, setting up a legal framework is crucial for user groups, especially when that group shares resources with others. Indeed, it is difficult to imagine how a FCA could perform without legal status.

The FCA is granted fishing rights by the local government and distributes these rights to its members (Lim et al. 1995: 200; Makino et al. 2014: 388; Makino 2011: 29; Matsuda et al. 2010: 899; Ruddle and Akimichi 1989: 347; Uchida and Makino 2008: 223; Yamamoto 2010: 4). Individual FCA members are not entitled to receive fishing rights directly from the local government (Makino 2011: 29; Popescu and Ogushi 2013: 22; Uchida and Wilen 2004: 2; Uchida 2005: 4, 2010: 238, Article 18, Fisheries Cooperative Association Law). Local FCAs do establish operational (FCA) regulations) that stipulate gear restrictions, as well as closures of the fishing ground (on a seasonal or area basis), the administration of fishing rights, the formulation of specific rules and regulations governing access to and use of common resources, and resource enhancement (Matsuda et al. 2010: 899; Berque and Matsuda 2013: 197; Takahashi et al. 2006: 578; Yamamoto 2010: 2). Moreover, each FCA can design its own administrative structures and operational modes to manage the fisheries within its allocated zone (Uchida and Makino 2008; Wilen et al. 2012: 245–246). Therefore FCAs are legally recognized by the state as a key partner in managing fishery resources. However, while regulations for the management of coastal fishery resources in Japan have been decided and imposed by local fisheries cooperatives, the national or prefectural governments still hold the power to license the participation of the fishery management as in a conventional limited entry system (Makino 2011: 29; Sugiyama and Sakuramoto 2013: 7; Wilen et al. 2012: 247).

Collective action by fishers is encouraged via their FCA by the Fisheries Law of 1949 and the Fisheries Cooperative Association Law. Importantly, fishers are required by law to belong to fisheries cooperatives. The system is designed to promote cooperation among fishers. In these legal documents, the FCAs are recognized as the sole partner working with the state to manage its territories (Berque and Matsuda 2013: 197; Lim et al. 1995: 206; Makino 2011: 29; Ruddle 1987; Wilen et al. 2012: 245–246). The National Fishery Law of 1949 formalized the management of coastal natural resources by allocating secure exclusive access to existing FCAs and formalizing the operation of these cooperatives (McIlwain 2013: 6; Ruddle and Akimichi 1989: 345; Uchida 2010: 236). Common fishing rights are allocated only to existing local FCAs. The Fisheries Law of 1949 indicates that "any other person than Fisheries Cooperative Associations and Federations of Fisheries Cooperative Associations cannot acquire a fishing right" (Article 42-2, Fisheries Law of 1949). More details about how the state of Japan uses its legal frameworks to support fisheries associations are provided in Appendices 1 and 2.

Defining Boundaries

In Ostrom's words, "defining the boundaries of the CPR and specifying those authorised to use it can be thought of as a first step in organising for collective action" (1990: 91). In defining the boundaries, she emphasizes the excludability of resource system and argues that "appropriators must be able to exclude others from access and appropriation rights" (Ostrom 1990: 91). Here, it is questionable that how to exclude outsiders from a defined area, or establish the presence of well-defined boundaries around a community of users.

An FCA membership entitles fishers to use rights to resources found within the territory of their local, community FCA, while the FCA itself holds the right to the resource, as assigned to it by the prefecture. Fishing rights are typically defined for a parcel of coastal water that borders the FCA's community. The borders are often defined by extending the municipal boundaries a certain distance from the shore. How far they extend depends partly on the topology of the ocean floor and partly on characteristics of the neighbouring communities. Fishing rights are protected by law and granted to FCAs as an organization, not to individual FCA members. Commercial fishing within the fishing rights area is only allowed for FCA members. In this sense, defined fishing rights are analogous to TURFs (Uchida 2010: 238). Boundaries are the same within administrative territories. Rights are assigned by the prefecture government to cooperatives, which manage these resources through their own committees in the local FCA (Delaney 2015: 268–269). As the Fisheries Law of 1949 states, "a member (limited to a fishery manager or a fishery employee) of a Fisheries Cooperative Association … has the right of operating a fishery within the scope of said provided demarcated fishery right or common fishery right" (Article 8, item 1).

This means that non-members are not able to fish in coastal fishing areas exclusively used by the FCA, and it is compulsory that a fisher be a member of the FCA. In other words, it is illegal for non-members to fish commercially within these waters (OECD 2012a: 24; Hokimoto 2009: 53; Sugiyama and Sakuramoto 2013: 7). Therefore fishers have to be a member of an FCA in order to run a fishery business that shares common resources in the neighbouring waters (Hokimoto 2009: 53; Takahashi et al. 2006: 578). In Japan, for most members, access to resource rights is the main reason for them to join an FCA (Delaney 2015: 272). By granting FCAs the fishing rights that are legally protected in full against third

parties, this rights system helps to protect coastal fisheries and fishers against the encroachment of other fisheries and economic sectors. Such rights cannot be loaned, rented, mortgaged or transferred to others; only the holder of the right or members of the holder organization may conduct fishing operations (OECD 2012a: 24; Sugiyama and Sakuramoto 2013: 7). The Fisheries Law 1949 indicates that the fishing right is valid for ten years (Article 21, Item 1). For each of these common fishing rights, in case of renewals, changes or additions, the FCA is required to design a Fishing Right Management Plan to submit to the prefecture Fishery Agency (Matsuda et al. 2010: 899; Berque and Matsuda 2013: 197; Yamamoto 2010: 2). The plan is required to outline the rules and regulations governing access to and use of the common resources, which are mechanisms to avoid conflicts over the use of fishing grounds as well as to conserve resources. FCA regulations stipulate more detailed fishing restrictions, which are applicable to the local conditions. These regulations take into account the restrictions set out in the Prefectural Fishery Coordinating Regulation (Makino and Matsuda 2005: 447). The latter makes connections between the FCA and the state. Therefore the regulations emphasize the restrictions with the shadow of hierarchy.

In supporting FCAs in terms of exclusion, the law controlling membership, the Fishery Cooperative Law, defines the eligibility conditions for becoming an FCA member, including local residency and a minimum number of commercial fishing days per year (Uchida 2010: 2400). Membership is of two types: regular and associate. Regular membership requires that an individual is a resident or that their place of business is within the assigned area of the FCA, and that they are operating their own fishery and engaging in fishing for 90 days or more each year. Associate membership is open to the fishers' production association. This membership is also extended to individual or juridical persons operating fisheries that employ fewer than 300 regular employees and with fishing vessels whose total gross tonnage does not exceed 3000 tons. Fish processors employing fewer than 100 employees also qualify. Both regular and associate members enjoy the same rights and privileges except that the latter have no voting right in FCA elections of officers and representatives (Matsuda et al. 2010: 899; Berque and Matsuda 2013: 197; Lim et al. 1995: 206; Ruddle and Akimichi 1989: 345; Yamamoto 2010: 2). Here the state is essential in helping FCAs to define membership. In the Fisheries Cooperative Association Law, the state requires that "each member of any Association shall be entitled to only one voting right and

one election right of officers. However, any member ... referred to as" associate member ... shall have no voting right and election right (Article 21).

Therefore the law aims to prevent an outsider from gaining eligibility to enter an FCA (Uchida 2010: 240). The focus of exclusivity is on preventing others from damaging or interfering with an owner's rights. In fisheries, exclusivity is considered valuable because it reduces one of the key incentives to race for fish. In the long run, exclusivity allows fishers to adjust their investment decisions to the quantity of rights of which they have exclusive use. In the short run, exclusivity allows for the efficient use of existing fishing capacity (Uchida 2010: 240). In addition, the law puts restrictions on access to a fishery, and the transferability of fishing rights. These legal conditions were intended to eliminate absentee ownership and the concentration of assets and profits in the hands of a few non-fishing capitalists (Makino 2011: 29). Limited transferability of such rights prevents the concentration of use rights in the hands of a few whose economically logical strategy to maintain or increase income would be to expand the areas or species harvested, rather than maximize economic returns from the area owned (Berque and Matsuda 2013: 197). Thus we can see the state protects FCAs from instruction by outsiders.

Close Working Relationships Between the State and FCAs

The relationships between regulators and fishers are close in Japan. One of the functions of FCAs is to inform their members of new and changing national fisheries policies. There are a number of venues in which fishers and regulators can exchange opinions and negotiate specific policies and regulations (Uchida and Makino 2008: 227). Committees such as the area fisheries coordination committees, for example, perform this role and comprise representatives of both industry and regulatory agencies. Close working relationships also exist between the national, prefecture and municipal governments and the FCA, and they are maintained with regard to fishery matters concerning the drawing up and implementation of management plans, fishery projects, budgets and subsidies. When an FCA proposes a project, it is passed through the municipal, prefecture and national Fishery Agency reviews. It is then submitted to the Ministry of Finance. Once approved, funds are released starting in April of the following year and they pass back down through the same channels. The prefecture and the FCA often work closely in the applica-

tion for and renewal of fishery rights. The FCA submits a fishery management plan to the Sea Area Fisheries Adjustment Committee of the prefectural Fishery Agency, which in turn studies the proposal and conducts a public hearing to gather opinions regarding the application. Modifications to the plan are made if necessary. The commission then submits it to the prefectural governor with recommendations. Any rejection has to be justified (Lim et al. 1995: 202). To support the fisheries sector, the national government often generates various programmes and provides assistance to the FCA. Such assistance includes the development of infrastructure for fisheries production, including construction/improvement of fishing ports; the development of coastal areas for fishery purposes; the development of coastal fishing grounds, and road construction in fishing port areas; the improvement of fisheries business management; coastal fisheries structure improvement programmes (including a subsidy programme for the construction of community centres in fishing villages, the construction of fish-handling facilities, and the construction of cold storage, fish-processing factories and warehouses); and the promotion of farm fisheries (Lim et al. 1995: 202). Therefore the state is central in fisheries governance processes and is crucial to the creation of a supportive environment and the continuance of help for FCAs to perform their functions.

Crisis Dynamics

The Sandfish Stock Crisis

The serious change and uncertainty in relation to the sandfish stocks in Akita from the 1970s to 1990s is a typical example. Fishers did not know what caused the serious decline. Offshore and inshore fishers blamed each other for overfishing, and the local sandfish industry would have been on the brink of collapse if no effective action had been taken. In fisheries, "sources of uncertainty in the capture fishery reduce predictability" (Barrett and Okudaira 1995: 205).

Akita Prefecture is located in the northern part of the Sea of Japan. The name for sandfish (*Arctoscopus japonicus*) in Japanese literally means "god fish". Sandfish, called *hata-hata* in Japanese, are one of the most important fish for residents of the prefecture and can be found along the coast of the Sea of Japan. Local people say that "you cannot see in the New Year without a sandfish" (Makino 2011: 76). Sandfish are often consumed in

the country, and a large portion of sandfish harvested in western Japan are sold through the Akita market (Makino 2011: 76; Sakuramoto et al. 2001: 203; Akimichi and Sugiyama 2008: 34; OECD 2012a: 16). During the peak period of the 1960s and 1970s, the sandfish fishery held more than 50% of the landing value of Akita fisheries (OECD 2012a: 23).

In Akita Prefecture, the sandfish is migratory and is harvested in offshore and coastal fisheries (OECD 2012a: 16; Suenaga 2008: 192; Takahashi et al. 2006: 585). Bottom trawlers are used to catch them at depths of 200–300 m in offshore waters. This capture causes by-catch of immature sandfish, especially between the months of October and December. In coastal waters, sandfish that migrate to coastal waters in December for spawning are caught by set nets and gill nets, which are placed around seaweed beds (Sugiyama and Sakuramoto 2013: 1–2; Akimichi and Sugiyama 2008: 34; Watanabe et al. 2005, 2011). Sandfish have a lifespan of about five years, and the age of sandfish capture is mainly targeted between one and three years. They usually live at a depth of about 200 m. The spawning season is short, extending from late November to December. The main offshore fishing grounds are located in waters 10–30 miles from the shore and several coastal fishing grounds are located further inshore (Makino 2011: 79; Sugiyama and Sakuramoto 2013: 3; Akimichi and Sugiyama 2008: 34).

The cause of the collapse of sandfish in Akita is debatable (OECD 2012a: 16). Harvests of sandfish dropped from more than 20,000 tons in the 1960s to a mere 74 tons in 1984 (Suenaga 2008: 191). While fishery scientists refer to inappropriate management and overfishing as the main causes, other explanations stress abrupt local effects of global climate change (Makino 2011: 78; OECD 2012a: 19; Sakuramoto et al. 1997: 9; Watanabe et al. 2005: 131, 2011: 466). While local researchers provided a more pessimistic outlook, many fishers at the time thought that the decline in the sandfish catch was just a natural fluctuation and would reverse itself in the future (Makino 2011: 80; Takahashi et al. 2006: 586). A survey on fishers' understanding of stock declines in early 1992 by the Fishery Promotion Center (FPC), a government agency, and the Fisheries Division of the Government of Akita Prefecture reveals the opinion of the fishers regarding the current status of the sandfish resource and the actions that should be implemented to rehabilitate it (Table 4.1) (Sugiyama and Sakuramoto 2013: 6). The survey confirms that the fishers understood that the resource had been heavily depleted. As Table 4.1 shows, only 39%

Table 4.1 Fishers' understanding about stock decline

1. Why had the sandfish stock depleted?	
a. Change of environment conditions	53%
b. Decrease in seaweed beds	40%
c. Overfishing	39%
d. Water pollution	33%
2. Is it necessary to rehabilitate the stock abundance	
a. Necessary, but no obligation for fishers	64%
b. Fishers should do nothing	36%
3. What procedures should we apply to rehabilitate the stock abundance?	
a. Release fry artificial hatched	46%
b. Regulation for fisheries	32%
c. Construction of artificial seaweed	32%
d. Government and research institute should do something	20%

Source: Sugiyama and Sakuramoto 2013: 6

Note: 237 questionnaires were returned

of those surveyed thought that overfishing was the main cause of the decline, and a minority of them thought that government could help with the crisis.

Akita FCAs consist of two main groups of fishers: coastal and offshore. They catch the same sandfish stock in different areas. Each group assumed that the other's overfishing was the main cause of the collapse of sandfish stocks (Makino 2011: 80; Takahashi et al. 2006: 586). As Sakuramoto et al. (1997: 9) observe,

> one or two years before the steep reduction of coastal catch in 1976 and 1977, the catches in offshore fishery were indeed very high. In the offshore fishery, not only the mature fish but also the younger fish were caught, whereas the coastal set net fishery harvests only the mature fish.

Therefore there was an assumption that the reduction in population was caused by the large catches of the offshore fishery, which caused a decrease in the coastal catch that decreased for some years (Sakuramoto et al. 1997: 9). In relation to Ostrom's condition 6 (1990: 100) about conflict-resolution mechanisms, it is useful to note that in being challenged by the serious decline of sandfish stocks during the late 1980s, offshore and coastal fishers blamed each other, and this caused internal

conflicts in FCAs. As Suenaga (2008: 195) puts it, "regardless of whether there was any truth to the claims, such negative attitudes would have undermined any attempt at self-governance". This conflict was rooted in a lack of understanding about the causes of the decline. It was not solved by rules but by the provision of in-depth knowledge. In this context, adequate knowledge became a solution for this kind of conflict.

The local fishers have limited knowledge of the sandfish's ecology. Their indigenous knowledge of such a decline could not enable them to understand the situation and, therefore, they could not work out proper actions in response to the crisis. What they know about sandfish is largely spiritual. The OECD (2012a: 23) claims that local fishers "simply believed that the fish suddenly showed up in large concentration to save the people from starvation during the snowy winter under the guidance of the divine power". While co-management authors stress the importance of local knowledge in co-management arrangements, this case shows that improving such knowledge is equally important.

As noted in Chap. 2, in fisheries management, application of Ostrom's first condition (1990), "clearly defined boundaries", is a challenge when fisheries are a mobile resource in a marine environment. In her words, "defining the boundaries of the CPR and specifying those authorised to use it can be thought of as a first step in organising for collective action" (Ostrom 1990: 91). Even in this case of sandfish management in Akita, the fishing grounds are relatively clearly defined within the prefecture's territory, but sandfish are mobile. The mobility of the fish stocks is a contributory factor to the high level of uncertainty of the resource. This uncertainty hinders the performance of local fishers and, even worse, causes conflicts among coastal and offshore fishers as a result of their lack of understanding of the factors causing the sandfish decline. At the beginning, the local government of Akita Prefecture considered overfishing to be the cause of the sandfish stock decline. However, this was not accepted by local fishers. There was a gap in understanding on the causes of sandfish stock decline between the two key actors. How to fill this gap so that the local government could persuade local fishers to support its policy is explored and analysed in the following section. In this challenge, the case reveals that no non-state actors were either capable or willing to assist fishers to solve this problem. Only the state could act meaningfully to conserve the stock.

The Moratorium (1992–1995) and Meta-governance Role of the State

Ostrom (1990: 33) acknowledges the uncertainty of CPR management relating to, for example, the quantity and timing of rainfall, the temperature and amount of sunlight, the presence or absence of disease-bearing vectors, and market prices of various inputs and final products. She states that "a major source of uncertainty is lack of knowledge" (Ostrom 1990: 33) and admits that "overexploitation can lead to destruction of the resource" (Ostrom 1990: 109). The uncertainty and the risks that are inherent in fisheries are recognized by co-management scholars (Fennell et al. 2008: 64; Olsson et al. 2004; Carpenter and Gunderson 2001) who identify key concerns in co-management including change, uncertainty and the complexity of the resource system (Fennell et al. 2008: 64; Olsson et al. 2004). Therefore application of Ostrom's first institutional condition of clearly defined boundaries in fisheries management is a challenge when fisheries are a mobile resource in a marine environment. The complexity of the resource comes partly from this characteristic. Local failure or incapacities in this regard imply a key role for the state. When fishing communities often do not have the required capacity to understand such uncertainty, the state can offer its support to fill this gap, especially during fisheries resources crisis periods.

As a response to the sandfish stock crisis, the Akita's prefectural government initiated a moratorium. In 1987 the prefectural FPC, which belongs to the prefectural government, recommended closing the fishery for three years (1 September 1992 to 30 September 1995). However, this initiative could not be implemented unless the FCAs reached a consensus supporting the action via the Akita Prefectural Fishery Resource Council. In the council, the government introduced its intent to introduce a moratorium and it led the discussions. However, the FCAs were not convinced by the policy and refused to adopt it. As a result, the council was dissolved a year later by the local government (Suenaga 2008: 193).

As discussed in Chap. 3, the substantial authority and responsibility given to local fishers under the decentralized fishery management system may also have a negative impact. For example, local fishers and the general public may not agree on which species of fish are most important to protect. Yet there are few venues, if any, where the public can influence such decisions. That decisions must be unanimous, as is typical in these organizations, also means that they tend to be slow in implementing new

technologies and/or in adjusting to changing natural and social conditions. For example, suppose that as a result of scientific research it was determined that increasing the mesh size of gill nets is strongly recommended from a fishery management point of view and so it was proposed to an FCA. Observing the recommendation would inevitably incurs cost because all fishers would need to purchase new nets. Further, suppose that there was one fisher who was unable to afford a new net and so he opposed the proposal. Because of the unanimous rule, the change would be blocked or delayed until a unanimous agreement could be reached.

The new policy in Akita was rejected for two main reasons. First, as mentioned above, the fishers did not understand the need for a moratorium. This suggests that the state did not provide sufficient information for local fishers. Second, the moratorium would have had a negative impact on the income of fishers. As Akimichi and Sugiyama (2008: 36) observe, "certain FCAs were opposed to the moratorium because of the dependence of local fishers on the sandfish catch during the spawning season. Other FCAs that operate bottom-trawling vessels on a year-round basis also opposed the policy because of the income loss for their operations". The OECD (2012a: 20) confirmed that "the stakeholders at that time were looking closely at the risk associated with the worst case scenario, rather than the cost and benefit of the stock rebuilding under the neutral or the best case scenarios".

With a strong mandate given by the state in deciding operational rules over the allocated fishing territories, the FCAs of Akita Prefecture were capable of rejecting the moratorium. However, this rejection did not mean that the state was powerless. In response to this rejection, it employed another resource: its in-depth knowledge on the local ecology. Here, a new actor was engaged, the Akita Fisheries Research Institute, which is a state agency at the local level. Its role is explored in the next section. From 1987 to 1992 the institute, working on behalf of the state, convinced local fishers of the need for a moratorium (Akimichi and Sugiyama 2008: 34; Makino 2011: 78; OECD 2012a: 19; Sakuramoto et al. 2001: 203; Suenaga 2002: 3; Sugiyama and Sakuramoto 2013: 1; Takahashi et al. 2006: 586; Watanabe et al. 2005: 131, 2011: 466).

In-Depth Knowledge

The Akita Fisheries Research Institute's population modelling of sandfish, based on long-term catch statistics, and biological and oceanographic

data, projected that the catch would be doubled following the three-year closure of the fishery (OECD 2012a: 24; PICES 2010: 101). The simulations showed that it would take about ten years to double the sandfish stock without a moratorium, starting from 100 metric tons to 200 metric tons after ten years if some new management measures were implemented (OECD 2012a: 24; PICES 2010: 101). In the same period, if a moratorium was adopted, fish stocks would rocket from 100 metric tons to about 900 metric tons. The scientific information was shared with fishers, and this process fostered their understanding. This helped to advance the discussion about a fishing closure among fishers (OECD 2012a: 23). A three-year period was chosen because most sandfish live up to three years, so this would provide complete protection for all age classes (OECD 2012a: 17; Watanabe et al. 2011: 466). According to the OECD (2012a: 24), by providing scientific knowledge about the sandfish recovery, Akita Fisheries Research Institute played a significant role in enabling fishers to reach a consensus. It is clear that the state has capacity to bring new actor(s) into the policy arena. In this case, the Akita Fisheries Research Institute is a state agency and therefore its performance was under the command of the state.

Close Working Relations

However, the research results were complicated. When the research outputs were available, local governmental staff had the job of explaining and interpreting the findings to local fishers. The staff from the Fisheries Promotion Center explained the current status of the stock and possible reasons for its depletion, and then described the expected effects of the closure. This role is highlighted by Akimichi and Sugiyama (2008: 36), who emphasize that "without such translation of the knowledge, … no fisher would seriously consider the knowledge as valuable". Thus the efforts by local government in helping local fishers to understand the institute's research was important and the effort remarkable: it took more than 200 intensive discussions over six months (Makino 2011: 80). This support by the state is confirmed by Suenaga (2008: 192), who notes that "translating sophisticated scientific concepts and data for fishers is not an easy task, but their understanding of that information is crucial to avoiding inappropriate decisions. This is where outside parties such as government agencies and scientists become important". In the end, a majority of Akita sandfish fishers came to realize that it was necessary to conserve

sandfish for future generations and an agreement on the moratorium was reached in October 1992. Akimichi and Sugiyama (2008: 36) observe that thanks to the translation role of the local government, FCAs in Akita hoped that a three-year moratorium would double the harvest, so all local FCAs came to follow the governmental proposal.

The close working relationship between FCAs and the staff from the Fisheries Promotion Center of the Government of Akita Prefecture was instrumental. This close working relationship is emphasized by (Suenaga 2002: 5), who says that "fishery extension workers belong to [the] prefectural side. However, they are in [a] closer relationship with fishers than the usual staff of prefectural government, because they often visit FCA[s]. Besides, they can respond to fishers' consultations that extend far and wide from the fishery technology to business." By working closely with local fishers, the staff from this centre came to understand what the interests of local fishers were, and helped them in turn to understand the complexity of their ecology from a scientific viewpoint. Accordingly, the centre was able to customize the knowledge it communicated to local fishers and enhance its legitimacy in that group. Thus there is a link between a key relational capacity of the state—its ability to translate and legitimize complex scientific information—and the success of the moratorium. Moreover, it is noteworthy that during the moratorium, the national and prefectural governments also worked with FCAs in the operationalization of surveillance around the moratorium. They used patrol vessels with law-enforcement officers on board to support FCAs in carrying out the moratorium (OECD 2012a: 17). Thus the state was crucial to its creation and continuance.

It is evident that when scientific knowledge was important to reach a consensus among fishers, the state brought a new actor in to fisheries management, the Akita Fisheries Research Institute. It is emphasized that the this is a state-funded agency and was involved in providing its expertise at the request of the state. Furthermore, local fishers could not work directly with the institute because they did not understand its research outputs, so they relied on support from the Fisheries Promotion Center to understand the scientific knowledge. Thus the network of sandfish management includes two key actors: the state (national government, local government, researchers) and FCAs. In this network of fisheries co-management arrangements, the state with its substantial resources takes the central position (see Fig. 4.1).

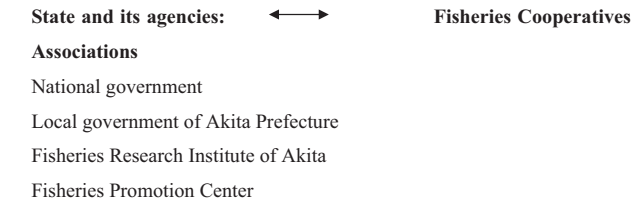

Fig. 4.1 Sandfish stock co-management network structure in Akita

Fiscal Resources

Even when the agreement was reached between local fishers and the local government of Akita, the moratorium could not be implemented immediately. Negotiations between the two key actors—local fishers and government—continued because on 25 September 1992, just days before the moratorium was to take effect, Akita fishers asked the prefectural government for financial support during that period (OECD 2000: 143; Suenaga 2008: 194).

This request raised the question of whether the state was willing to continue to support the FCAs. Acceptance by the state was crucial in enabling the moratorium to take place. Both the Fisheries Agency (central government) and Akita's prefectural government announced packages of supporting measures on 30 October 1992 (OECD 2012a: 20; Suenaga 2008: 194), which included

- no-interest loans to replace some of the income lost due to the moratorium;
- subsidies for reductions in the number of bottom-trawler boats;
- a buy-back programme for excess fishing gear;
- ongoing investigations into the state of the sandfish resource stock and fishery (OECD 2012a: 20; Suenaga 2008: 194).

The amount of government payments during the three-year period totalled JPY693 million (approximately USD7 million). A third of this was appropriated to the decommissioning of gear and vessels. Another third was allocated for no-interest loans, including the principal of the loans, which would be returned to the government in later years. The final third was spent on sandfish research, including stock-enhancement services

(OECD 2012a: 20–21). In addition, between 1997 and 2008, the Akita prefectural government supported the industry by providing the equivalent of USD2 million to create seaweed beds on artificial blocks with a total area of 4.5 ha in the Akita coastal zones to facilitate the movement of sandfish stock (Akimichi and Sugiyama 2008: 38).

It is noteworthy that the total amount of the state's fiscal support for the moratorium (JPY693 million) is more than three times as high as the landing value of sandfish in the year (JPY163 million) before the moratorium. This is a significant amount compared with the profits generated from the industry. Prior to the three-year closure, sandfish landings were 71 metric tons in volume or JPY163 million in value (OECD 2012a: 23). This big demand in terms of fiscal resources required substantial support from the state.

All catches of Sandfish in Akita Prefecture were banned from September 1992 to September 1995 (see Fig. 4.2). As the OECD (2012a: 23) indicated "sandfish in Akita were completely protected from commercial fishing from September 1992 to September 1995. This measure has resulted in successful stock recovery." As a result, local fishers benefited from an increased total allowable catch (TAC) quota. Since 1995 the TAC allocated and actual catch achieved in each year have been increasing (Sakuramoto et al. 2001: 203). In 1995, sandfish fishing resumed, the TAC was set at 170 tons and sandfish catches were allocated at 85 tons each for both coastal fisheries and offshore fisheries (Suenaga 2008: 197). That year the actual catches were 142.5 tons in total, coastal fisheries were

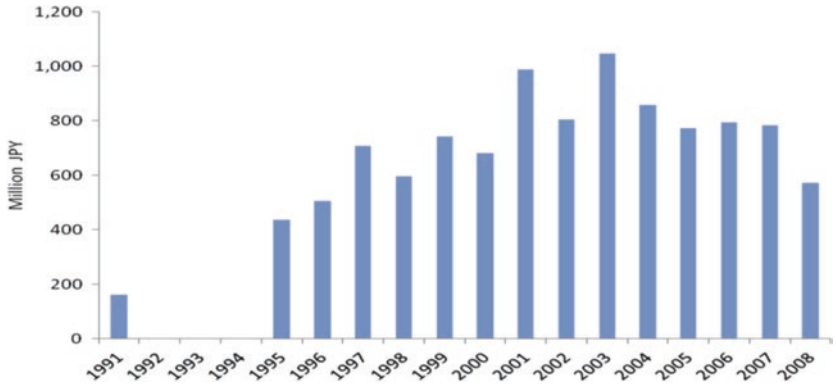

Fig. 4.2 Total landing value of sandfish in Akita. Source: OECD 2012a: 29

88.7 tons and offshore fisheries were 53.8 tons. In 1996 the TAC was increased to 220 tons, and sandfish catches were allocated at 110 tons each for both coastal fisheries and offshore fisheries, while the actual catches were 243.3 tons in total, with coastal fisheries at 157.2 tons and offshore fisheries at 86.1 tons. It is noteworthy that after 20 years (1984–2004) the harvest of sandfish stock has increased from 74 metric tons in 1984 to 3136.4 tons in 2004 (about 42 times) (Suenaga 2008: 197).

Therefore in the context of relatively strong state capacities in Japan, successful collective action by fisheries associations was made possible through continuous support by the state. The co-management arrangements were established and saved through the work of the local government. Nevertheless, it is noteworthy that for migratory species such as sandfish, even the prefectural moratorium may not be effective. In fact, Akita Prefecture tried to persuade neighbouring prefectures to take part in the moratorium, but it failed. After the three-year moratorium, however, Akita and its three neighbouring prefectures collectively formed a management council and implemented a set of rules to protect sandfish that are less than 15 cm in length (Takahashi et al. 2006: 587).

Conclusion

Overall, this chapter suggests that the relationship between the industry and the state is not an equal one. Co-management is defined broadly as a governance arrangement whereby management responsibility is shared between the government and fishing communities. However, when referring to the second model by Knoke (1990: 41), "assuming that capacity to control the flow of information or resources is a measure of network power" (Knoke 1990: 41), this chapter posited the state in the central position of fisheries governance network for two key reasons. First, regarding fiscal resources, the costs related to the moratorium were not shared equally between fishers and government. Specifically, the state covered two-thirds of the costs while only a third was born by local fishers. Second, the state brought its agencies to provide in-depth knowledge, and also employed them to transmit this knowledge to local fishers. It is clear that the state provided significant resources demanded by local fishers and finally made the moratorium happen. Therefore it was the most important actor in the co-management network for sandfish in Akita Prefecture. Accordingly, the fisheries co-management network in Akita is obviously state-centric.

This chapter has examined the meta-governance of Japanese fisheries co-management arrangements to highlight the important role of the state in supporting collective action by fishers. In Japan, the state acted in tandem with fishers, providing crucial resources, which promoted effective resource management. Japan reflected a strong institutional capacity of the state by encouraging fishers to work via fisheries associations. Fishers and their associations benefited from being granted exclusive fishing rights, from in-depth knowledge transferred from governments and from substantial financial support by governments. The state in this case not only assisted but also created a supportive environment for FCAs to perform in by producing a fishing rights regime, key technical infrastructure, in-depth knowledge and fiscal resources. Therefore Ostrom's notion is often conditional on support from the state. We have seen that Japan has used its institutional capacities to give FCAs a strong legal framework, which has created the overarching frame in which collective action by fishers materializes. Resourcing employed by the state included the capacity to promulgate laws, fiscal resources, in-depth knowledge and close working relationships.

Ostrom's first institutional condition (1990) on clearly defined boundaries was a focus. The high level of uncertainty of fisheries' resource characteristics was a key challenge to the FCAs in Akita to define clear boundaries of fish stocks. The uncertainty of the resource that was explored through the sandfish crisis of 1992–1995 stayed beyond Ostrom's eight institutional conditions. So both in-depth knowledge and fiscal resources were crucial to make the moratorium take place. The state was required to perform its meta-governance role to ensure the well-being of sandfish stocks, and this meta-governance role of the state in this case depends largely on its available resources. Moreover, the high level of uncertainty about sandfish stocks was associated with the internal conflicts among fishers in the FCAs when they blamed one another for the serious decline. Such internal conflicts did not come from economic incentives but were caused by a lack of understanding and knowledge. Providing information, as the local government of Akita did, is a sound solution to this type of conflict. In addition, local governments worked together with local fishers to enforce rules during the moratorium.

In exploring the dynamics of the sandfish crisis, the chapter has shown that the relational capacity of the state is important in supporting fisheries associations. The state maintained a close working relationship with the association. Such relationships enabled local government agencies of Akita

to explain research outputs in relation to the current status of the stocks and possible reasons for their depletion, as well as the expected effects of fisheries closure. By working closely with local fishers, state agents interpreted the interests of local fishers and helped them to understand complex matters. The centre was able to customize and transfer knowledge to local fishers successfully. Exploring a successful case of meta-governance in a comparatively strong nation such as Japan raises a question about what happens when the state is short of resources, as is often the case in developing countries. Chapter 5, on Vietnam, explores this question by analysing how the state carries out a fisheries meta-governance role with limited resources.

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CHAPTER 5

Vinh Giang Fisheries Association, Vietnam

Introduction

This chapter continues to explore the institutional arrangements that constitute fisheries associations (FAs) and investigates the dynamics of a specific crisis related to a FA. Accordingly, the analysis of both reveals the state centricity of the policy area and how Ostrom's institutional conditions are supported by that state centricity. In contrast to Chap. 4 which examined a case in Japan, which has both institutional and relational capacities to meta-govern FAs, this chapter presents a case where the state does not have such capacities. This is often the situation in developing countries where the state may be challenged by a shortage of resources. This case shows that the state, even with weak capacities in terms of resources, can still play a central role in governance processes. Furthermore, the chapter investigates resources that enable a state with weak capacities to be central to such a fisheries co-management network. By engaging the state-centric concept of meta-governance, the chapter explores the capacity to promulgate laws, leadership, fiscal resources and policy formulation. In particular, it shows that the state's resources were crucial in

- defining the internal and external relationships and the boundaries of the Vinh Giang Fisheries Association;

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- bringing a non-state actor, the Food and Agriculture Organisation (FAO), to educate fishers during the uncertainty of a crisis in a way which ensured sustainability as their primary means of making income was taken away.

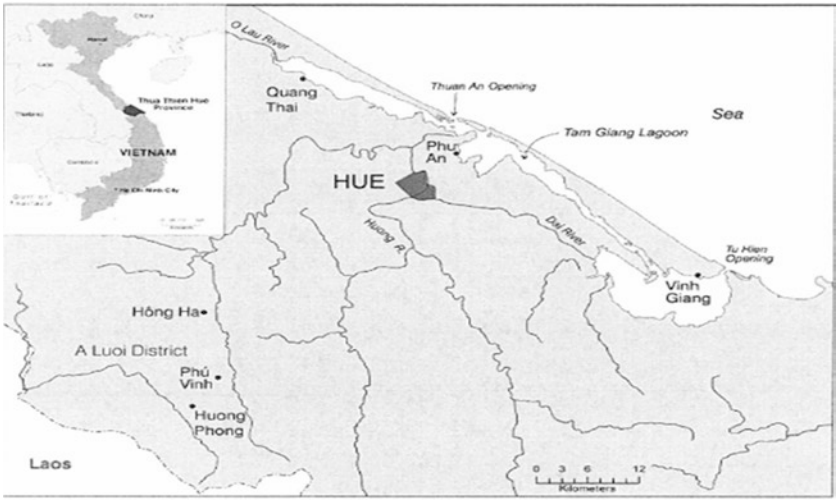
In both cases the state is crucial to the success of collective action by local fishers via their FA.

To provide insights into how the state can remain central in the fisheries co-management network, the chapter explores the implementation of the fishing gear reduction in Tam Giang lagoons, Vietnam. In doing this, it focuses on the meta-governance role of the state in working with Vinh Giang Fisheries Association at the grassroots level. The chapter analyses the dynamic interactions between the three key actors: the state (provincial, district and commune authorities, the Sub-department of Fisheries Resources Protection affiliated with the Provincial Department of Agriculture and Rural Development), the Integrated Management of Lagoons (IMOLA) Project funded by the FAO, which is a powerful non-state actor, and the Vinh Giang Fisheries Association. Certain constraints on the practice of meta-governance by the state are also explored when the FAO is involved in this network. The chapter reveals how the state can engage in meta-governance when it lacks capacity, and how it has to engage a powerful non-governmental organization (NGO). It also stresses further the importance of in-depth knowledge and fiscal support for fishers' organizations.

As discussed in Chap. 2, Ostrom's eight institutional conditions do not properly address the potentially important role of the state in fostering collective action by fishers in managing common pool resources (CPRs). In contrast to Ostrom's approach, this chapter investigates areas which require state activities in support of her eight institutional conditions in terms of the three classifications—namely, resources characteristics, institutional arrangements, and external environment. The description and discussion of the legal framework helps to show how far the state can support FAs in terms of both institutional arrangements and the external environment for cooperative behaviour to take place successfully. Furthermore, an analysis of crisis dynamics reveals the significant support by the state in helping fishers to cope with a high level of uncertainty about fish stocks in maintaining sustainable stock as an important input for fisheries management.

Synopsis of Fisheries Management

The Tam Giang Lagoon system with a 22,000 ha water surface is the largest coastal lagoon system in Southeast Asia, and is considered to be very important to Thua Thien Hue Province in terms of fisheries resources and waterway transportation. Vinh Giang Fisheries Association includes local fishers from Vinh Xuan Commune, Phu Loc District and Thua Thien-Hue Province (see the map below). Vinh Xuan Commune is situated along the Tam Giang-Cau Hai Lagoon system. This system provides an important livelihood source for the local coastal population, covering five coastal districts with 33 communes and nearly 100 villages. About 300,000 people make their living in and around the lagoon, with many being involved in capture fisheries and aquaculture activities. Vinh Giang Fisheries Association has its own regulations for the use and management of fisheries resources. Local FA's regulations are mainly based on the ideas and contributions of local FA's members.



Map of Vinh Giang location (adopted from Tuyen et al. 2010: 328)

Recognizing serious shortages in terms of resources for coping with crisis in managing fisheries resources in the lagoon system, in 2004 the Provincial Government of Thua Thien Hue Province asked the national government of Vietnam to search for support from international donors

to assist its efforts. In 2005, this request was answered by the FAO with a USD3.2 million three-year project for Tam Giang-Cau Hai Lagoon fisheries management activities (the IMOLA Project) for the first phase, from 2005 to 2008, and then extended to early 2014 (DARD 2010: 2; IMOLA 2011: 3; Takahashi and Duijn 2012: 1). The project assisted local governments in various ways, including through the implementation of a policy for reducing the amount of fishing gear in the lagoon system and supporting the performance of the FAs. In driving the IMOLA Project to achieve its policy goals in managing fisheries resources, the local governments established a project management board, which was chaired by a deputy director of the Provincial Department of Agriculture and Rural Development. A project chief technical advisor, on behalf of the FAO, worked with staff of local governments to design and implement project activities, which were in line with the local government's fisheries policy preferences (Takahashi and van Duijn 2012: 1).

The local governments of Thua Thien Hue decided to reduce the amount of fishing gear in the lagoons, which was considered to cause obstructions to current flow. This chapter starts with the policy target outlined in the decision by the local government of Thua Thien Hue Province:

> Reducing by 40% … the number of fishing gear in lagoon systems of Thua Thien Hue… (Government of Thua Thien Hue Province 2004, Decision 3677/2004/QD-UB: Article 1, Item 1)

The term "fishing gear" as used here refers to a stake trap, which is one of the traditional fishing tools used by the local fishers, typically composed of two main wings (net fences with bamboo poles) that guide fish into the fish trap. A stake trap is usually installed in a V shape so that the two wings can direct fish into the trap, which is at the junction of the wings—that is, at the bottom of the V. The size of a single wing is usually longer than 350 m.

Institutional Arrangements

Mandating the Non-state Actor

As this section shows, collective action by fishers needs to mesh with local and national legal contexts. In societies with complicated interactions

between different resources users, setting up a legal framework is crucial for user groups, especially when those groups share resources. This section continues to investigate the institutional arrangements for FAs. The Provincial People's Committee (local provincial government) in Thua Thien Hue Province enacted a regulation on 19 December 2005 that delegates power to FAs to manage the fisheries in Tam Giang Lagoon. This regulation was in line with the Fisheries Law of 2003, and the approval of the Master Plan of the Lagoon Fisheries Management in Thua Thien Hue up to 2010, which was based on the proposal made by the director of fisheries, Department of Fisheries (Thua Thien Hue Province). In these legal documents, the FAs are expected to perform as social and professional organizations, and as members of the Vietnamese Fisheries Society (see Appendix 4). They are also expected to operate according to the guidance of the respective Commune Peoples Committees (Commune Authorities) with the facilitation of the Provincial Department of Agriculture and Rural Development at the respective district levels.

This local initiative is mandated by the Fisheries Law of 2003 and by the national government, which empowers local governments to allocate fishing rights to the local FAs, in which local governments (the Provincial People's Committee) are delegated the power to choose modes of governance of fisheries resources at the local level:

> The provincial People's Committees [local government] shall have responsibility to issue rules of fishing grounds in rivers, lakes, lagoons and other natural waters under its jurisdiction in accordance with guidance of Ministry of Fisheries; shall organize and promote the local residents to take part in monitoring, detection and prosecution of any violations committed to fisheries activities in fishing grounds. (GOV 2003: Article 15, item 3)

The Fisheries Law of 2003 provides a legal framework for the establishment of associations such as FAs at the local level. It also encourages local fishers to be more active in fisheries management (see Appendix 3). The local government of Thua Thien Hue further strengthened the legal framework for FAs with the governmental Decision No. 4260/2005/QD-UBND. This encourages fishers to cooperate via their FAs. In Thua Thien Hue, the local government has chosen the FAs as a key partner in co-management. The local government of Thua Thien Hue empowers them by allowing them to design their own management rules, which are in line with governmental fisheries laws and customized to their local con-

ditions. The local government "encourages Fisheries Associations at the local level, based on the State Law, to develop their 'self-management rules' and detailing community rules" (TTH Government 2005: Article 11). In addition, to encourage local fishers to become members of the FAs, the local governments do not give fishing rights to individuals but to FAs. Local governments stress that they "will only delegate the power of lagoon fisheries management to the FAs at the grassroots level" (TTH Government 2005, Article 3). It is noteworthy that with the same legal framework of the Fisheries Law 2003, Thua Thien Hue is a pioneer in Vietnam in facilitating the establishment of FAs to be key partners with local governments in managing lagoon resources. Local governments have formalized the role of FAs in the local management of the lagoon, and recognized the legal status of local FAs in receiving lagoon fishing rights allocations as framed within the revised Fisheries Law of 2003.

Establishment of the Vinh Giang Fisheries Association

In this case we see a familiar pattern to the previous one because the state was a core actor in the creation of the FA. Local governments initiated and have been supportive of the establishment of Vinh Giang Fisheries Association. The Sub-department of Fisheries Resources Protection, affiliated with the Department of Agriculture and Rural Development, is a local governmental agency that undertook surveys to determine the number of fishers who were interested in joining the FA, what types of fishing gear were in place and, importantly, who was willing to join the executive board of the FA. The surveys started in early June 2009 and were completed within a month. In conducting the surveys, the sub-department held meetings with grassroots authorities of the commune to identify interested fishers and potential candidates for the executive board. After gathering this information, it talked with capable fishers to encourage and convince them to become board members. The first general meeting took place on 30 June 2008 with 87 local fishers attending (Vinh Giang Fisheries Association 2014: 1). At this meeting, some local fishers did not know each other. The staff of the sub-department had to introduced them and also highlight those who were willing to be board members. In July 2008 the association began to function officially with 87 members and a seven-member executive board. According to local fishers, the key benefits that they expected to gain from membership of the local FA were fishing rights, training on resource protection and reducing the problem of using

destructive gear, and illegal fishing. Local fishers indicated that fishing by "outsiders" was a key problem in the commune. The FA is therefore working to mobilize resources from both local fishers and the local authorities to protect their resources.

When it came to operations, in the early stages the FA had difficulties in carrying out its functions because members of both the FA and its board did not know how to run the FA or how to carry out the functions assigned to it. The sub-department continued its support with different types of training from September 2008 to March 2009 so that the FA could run itself. According to the chair of the FA, the sub-department provided training on how to patrol, how to preserve fish stocks and how to use communication tools effectively during patrolling. In addition, it sent its staff to support the FA to make sure that the regulations were made by the fishers themselves and were lawful. Following this, draft regulations consisting of 22 clauses were drawn up with strong agreement from the fishers, and these were submitted to the district people's committee and the steering committee for approval. Here the role of the state is important in helping the FA to design fishers' rules.

Defining Territories

Water resources are under the overall management of the state and fishing communities cannot claim their use rights without approval by the state and its agencies. In addition, defining fishing territories requires resources such as boundary markers, which fishing communities cannot afford but which the state can provide. Ostrom overlooked one important aspect of defining territories, which is rule enforcement against outsiders. In this area the state plays a crucial role in backing up fishing communities against outside violations.

In 2009 the local governments empowered Vinh Giang Fisheries Association by granting it fishing rights over an area of 997 ha of lagoon with Decision 942/2009 issued by the Peoples Committee of Phu Loc District (March 2009). This allocation of fishing rights to the FA contributes to reducing the costs of governmental operations when the financial burden of monitoring, surveillance and control measures is large. Territory use rights for the FA were considered to be a good option to empower the Vinh Giang Fisheries Association. However, at that time the district authorities were not familiar with this approach. There were some challenges with Territorial Use Rights for Fishing (TURFs), such as the

boundary identification, and law/rule enforcement following the allocation. The lagoon space at Vinh Giang was subsequently divided into different sub-zones, including those for fixed-gear fishing (543 ha), waterways combined with mobile gear fishing (324 ha), breeding areas and seasonally protected zones (40 ha) and other functional areas (Armitage et al. 2011: 708; Takahashi and van Duijn 2012: 63). The zoning was based on local experience and knowledge of the lagoon resources and on the current uses of the lagoon, but was consistent with provincial and district plans for fishery exploitation (Armitage et al. 2011: 708). It is evident that the state creates an overreaching setting that supports local fishers' collective action via their FA.

The introduction of TURFs in Vinh Giang has been associated with positive outcomes, particularly the increase in the number of fish caught by the FA and the decrease in the number of poor fishing households (Armitage et al. 2011; Tuyen et al. 2010: 332; Marschke et al. 2012: 19). As shown in Fig. 5.1, since the introduction of TURFs, local fishers have enjoyed a remarkable increase in fish capture, from 125 metric tons in 2008 to about 200 metric tons in 2010. During the same period, the number of poor households decreased from 43 to 15, while the number of members of the FA increased from 87 to 126 (Armitage et al. 2011: 709). Essentially, TURFs have proved to be a good approach for local government to give the Vinh Giang Fisheries Association incentives to share responsibilities in managing fisheries resources at the grassroots level. As fishers have a sense of ownership of the water surface allocated for fishing,

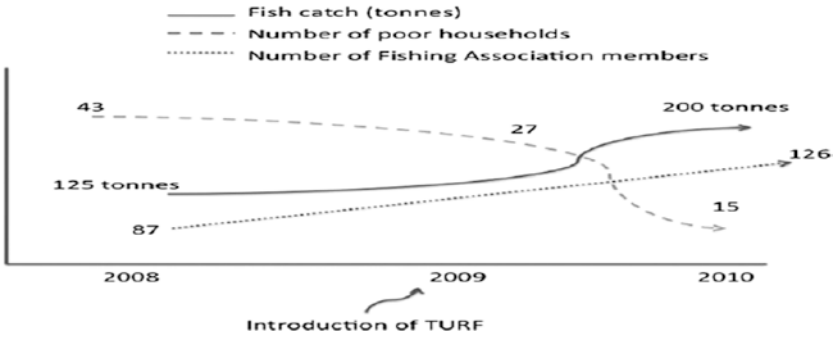


Fig. 5.1 Introduction of TURF in Vinh Giang and its associated achievements since 2008 (Armitage et al. 2011: 709)

they invest their time and effort in guarding the area. Members of the FA currently understand that their actions in the allocated area are closely associated with their income. The president of the FA says: "Now we know that we need to protect the allocated water, that means protect our income" (Interviewee, January 2015). The president also said that when fishers saw illegal fish capture in their territory, they often called the executive board to send out the patrolling team because they knew that this would help to protect their own resources. Thus TURFs are instrumental in the state's encouragement of local fishers to be engaged with the FA.

The TURF approach is associated with the first institutional condition identified by Ostrom regarding clearly identified boundaries. This requires marking the field and patrolling the allocated area. There are two types of marking pole in Vinh Giang: one is a big concrete pole to define the boundary between Vinh Giang Fisheries Association and its neighbours, while the other is a small concrete pole to define the boundary between its members. As the construction of big poles is quite expensive, the FA has often asked for funding from external sources. For example, the IMOLA Project has sponsored the construction of big concrete poles.

Rule Enforcement

Ostrom's approach focuses on rules and property rights to allow communities to manage CPRs by themselves. Sanctions in her studies are for members of the community, not for outsiders. There is a gap in her studies regarding how fishers can deal with outsiders' violations. In reality, actions by user groups outside the immediate community may undermine or destroy the management activities undertaken by the community. This problem requires substantial support from the state and its agencies.

How to conduct effective patrolling is an important concern. Members of the executive board of Vinh Giang indicated that after its official establishment, Vinh Giang Fisheries Association received training from the sub-department on specific skills for patrolling and apprehending violators, and on what they should do after the apprehension of violators (Interviewee, January 2015). Fishers from the FA agree that this training is very useful for them because they had no such skills previously. Regarding patrolling, the FA has taken over the responsibility from the sub-department of patrolling the water areas allocated. In the protected areas it patrols about two or three times a month, and in the fishing areas once a month. For doing this the FA receives financial support from the sub-department to

partly cover the costs of fuel for the motorized boat used for patrolling. In addition, in the case of organized violators, a patrol team of the Vinh Giang Fisheries Association keeps the commune authorities and the sub-department informed of illegal activity, and the latter often sends enforcement forces to reinforce the patrol team. While Vietnamese law does not allow the patrol team to destroy violation-committing resources such as fishing boats and fishing gear, the patrol team often reports to the sub-department, which can do so.

> Patrolling skills are developed by the Sub-department. We patrol once a month. For the protected area, 2–3 times a month. Sometimes, members of the association phone us even when we do not patrol. Everyone knows protection is for their benefit, especially when they [find] cases of electronic fishing. (Interviewee, January 2015)

As a boat is quite valuable for fishers in the lagoon areas, those who commit violations and lose their boats sometimes return to seek revenge on those who were in the patrol team. Revenge can include destroying private boats of patrol team members, killing fish raised in their fish traps and wrecking fishing gear. Therefore patrol teams do not want to use their own boats for patrolling because violators can see the registered boat plate and easily find its location. In this context, the FA asked the local authorities to provide a motorized boat for the patrol team but it has not received this support. It stresses that this is important for the FA (Interviewee, December 2014).

The sub-department raises any concerns about the effectiveness of patrolling by the FA (Interviewee, January 2015). It is aware that there have been some cases of violators who were members of the executive board. Thus even after allocation of TURFs to Vinh Giang Fisheries Association, the sub-department still carries out random patrolling in the area allocated to the FA to make sure that it carries out patrolling as required. The fact that the FA discovered only one violation in 2014 may mean not that the offence rate is low but perhaps that patrolling is not as effective or as frequent as necessary. The FA also encourages its members to report, on the spot, any violations they find by paying VND50,000 (about USD2.5) for each phone call (Interviewee, December 2014). However, fishers often do not want to take this reward because they believe that looking for violation is their routine duty. Members of the FA understand the direct link between the protection of their allocated water

area and their income generated from fish capture. This is the direct impact of TURF on the thoughts and subsequent behaviour of local fishers. However, both local fishers and the authorities do not know how much fish stock remains in the allocated water. The sub-department often helps to increase fish stocks with young fish (fishing seeds) releasing activities and building habitat structures. Therefore, regarding rule enforcement, the state can often support the FA. Currently the FA still cannot completely self-patrol the allocated areas but it is working closely with the local authorities of communes and the law-enforcement force of the sub-department. For example, when a regular patrol team finds a large group of violators, it will often instantly report this to the commune authorities and request law-enforcement forces for support in confronting the offenders. It could also ask the sub-department to send more forces but, because the sub-department is located quite far from the field, it often asks for quick support from the commune authorities instead (Interviewee, December 2014).

Persuasion is the main tool that the FA has to reach a collective agreement among its members. However, sometimes the FA, particularly the members of the executive board, cannot ensure members' compliance with the rules (Interviewee, December 2014). If negotiations fail, the FA often refers to local communities for help:

> Internally, sometimes we have difficulties in enforcement. Some members refuse cooperation. Some of the members still want to enter the protected areas. In this case, when negotiation does not work, we need the authorities of the commune to enforce when things go out of our reach. (Interviewee, December 2014)

Crisis Dynamics

Water Pollution

During the period 1994–2005, the Tam Giang-Cau Hai Lagoon area witnessed fast development of shrimp-farming ponds. From 1995 to 2005, the total areas for shrimp farming rocketed from 1000 ha to 4000 ha. Instead of maintaining the cultivation of rice, a large number of local farmers in the region turned their rice lands into shrimp ponds in the hope of larger profits. While rice cultivation was threatened by annual saltwater intrusion, and provided much less income for local

farmers, shrimp farming became attractive to many along the coast seeking better profits (profits from shrimp farming are about ten times as high as those from rice cultivation). Shrimp farmers who have a good average crop can earn from VND17 million (about USD750US in the year 2005) to VND20 million (about 900 US dollars) from each hectare, while with the same area rice farmers can earn from VND2 million (about USD90) to VND3.5 million (about USD150) (Xuan and Hoa 2006: 146; Hoa 2005: 9).

However, this market-driven transition was challenged by individuals' lack of technical knowledge of shrimp farming because most shrimp farmers who used to be rice farmers had not had any previous relevant experience. Since 2004, shrimp diseases have occurred more frequently, causing heavy losses to local shrimp farmers. The "white-dot disease" broke out first in the Cau Hai area where shrimp farmers released wastewater from their disease-stricken ponds into the lagoons. Accordingly, the lagoon water became contaminated with disease bacteria, which were then transmitted into other areas when other shrimp farmers used this source of water to pump into their ponds. In 2004, in Phu Loc District, there were more than 700 ha (of a total of 1150 ha) stricken by disease. According to Ta Quang Ngoc, former minister of fisheries of Vietnam, "shrimp disease and shrimp death have become alarming problems". The Vinh Giang Commune was among the most seriously hit areas in Phu Loc District. It witnessed widespread death of shrimp over 208 ha (of a total of 215 ha). This serious situation prompted a request to clean up the lagoon systems, and one of the solutions was to increase the circulation of water into the lagoon and between the lagoons and the sea.

According to the Provincial Department of Fisheries (now merged into the Department of Agriculture and Rural Development) (2005: 7), water pollution in the shrimp-farming areas had become more serious. Water pollution of the surrounding environment is mainly triggered by residues of shrimp feed, and untreated wastewater from shrimp ponds (Thang et al. 2006: 273). Effluents discharged from ponds usually contain high concentrations of nutrients and oxygen-demanding substances (Hop et al. 2006: 240). Only 25% to 30% of feed brought into the ponds is consumed by shrimps, with the rest being left as pollutants (Thang et al. 2006: 279). Shrimp farmers begin their production cycles, which normally take place from February to July every year, by supplying seawater, usually brought in by transferring seawater by electrical pump to partially fill the pond. After the post-larvae are placed in the

ponds, water from rivers and lagoons is gradually added to them, thereby allowing the juvenile shrimp time to adapt to lower and lower salinities. During the third and fourth months of the shrimp growth period, when the water quality deteriorates as a result of increased feeding and the organic activities of the shrimp, the low-salinity pond water is exchanged with lagoon water. When the shrimp have been harvested, the ponds are emptied and the heavily contaminated water is released directly back into the lagoons. The wastewater from the shrimp ponds is also overloaded with harmful chemicals that are used by the farmers to treat their ponds. As most of the shrimp farmers lack technical knowledge of shrimp farming, including the chemicals used for the treatment of shrimp diseases, they may not use the correct chemicals or administer the correct doses. Chemicals such as calcium carbonate, calcium oxide, dolomite, chlorine and benzalkonium chloride directly affect the quality of the water environment (Thang et al. 2006: 273). Local fishers recall that during this time in some areas of the lagoons, water turned blood red and was putrid.

During the late 1990s the lagoon system was seriously contaminated with bacteria from shrimp diseases and was simultaneously overfished. The lagoons were also densely populated with fishing gear. This seriously affected fish capture. Local fishers complained that while in the past they could easily catch 10–15 kg per day by using a stake trap, but this decreased to 1–2 kg per day during that period. As Armitage et al. (2011: 705) observe, the lagoons were too densely obstructed by fishing gear and the capture fisheries were at risk of collapse. In this context, the removal and reduction of fishing gear could contribute to enhancing the circulation of water between the lagoon systems and the sea, helping to clean up the lagoon water body and make improve its flow with the ocean.

From 2000 the provincial fisheries department and district authorities tried to implement a policy to reduce the high density of fishing gear in the lagoons, in a hierarchical manner. The policy was decided by local governments without consultation with local fishers, and then communicated to resource users via public meetings at the commune and village levels. In this approach, specific locations and numbers of fishing gear to be removed were decided exclusively by the district government. To achieve its targets, local governments asked the local police to ensure that the policy was put into effect and that no affected fisher households refused to toe the line. However, such a command and control approach led to strong negative reactions from local fishers, who did not comply with the policy and also

organized themselves in protests against the local governments. As a consequence, local governments could not implement the policy and the relationship between the state and the fishers grew worse.

Local governments consequently changed their approach by initiating ways to engage local fishers to implement the policy. The Sub-department of Fisheries Resources Protection, as part of the local government of Thua Thien Hue Province, was assigned as the main technical agency in charge of providing advice for policy formulation and implementation. It was the sub-department that initiated the idea of working with FAs to engage local fishers in the development of solutions for the lagoon. However, its role was limited to policy formulation.

Fishing Gear Reduction Policy

Fiscal Support

Monetary compensation by local governments for affected fishers is an important factor in assisting with policy implementation. The IMOLA Project simply provided in-depth knowledge about the lagoon water body and fisheries resources in this water body, yet implementing the policy requires compensation for the affected fishers. The relocation of one set of fishing gear cost VND7–10 million (about USD300–450) (Interviewee, January 2015). The government provided VND18 million (about USD800) and 18 kg rice per person per month for six months for fishers who removed their fishing gear and stopped fishing. For those who reduced their fishing gear but continued to operate, the compensation was VND3 million (about USD130) with 18 kg rice per person per month for three months. However, the FA requires more than this type of once-off fiscal support.

Bringing in the IMOLA Project

In-depth knowledge about the environment and fish stock changes are also important. As this chapter shows, during the crisis period of serious water pollution, when the fishers were unable to solve the problem themselves because their local knowledge was not sufficient for them to understand the uncertainty of the environment and the fish stocks, up-to-date knowledge was instrumental in generating effective action in response to fisheries management demands. In exploring the implementation of the gear-reduction policy, the chapter aims to stress the unique role of the state in backing up the FA, even when the state has limited resources in

response to fishers' demands. Thus the chapter argues that "the fishers themselves may be able to enforce the rules" (Ostrom 1990: 101) in a situation where the state stands behind and supports them.

Initial attempts to implement gear reduction failed, falling far short of the 40% reduction target (Armitage et al. 2011; Tuyen et al. 2010: 332; Marschke et al. 2012: 19). In 2010, local governments of Thua Thein Hue made further efforts with the rearrangement of stake traps in the lagoons. With the FA engaged, they established direct interaction with local fishers. Previously, local authorities dealt directly with individual fishers, but the policy has been transferred to the FA, which has taken responsibility for implementation within its structure. This case reflects what was seen in the Japanese example in that, through Vinh Giang Fisheries Association, local fishers voiced their concerns at many public meetings, which engaged representatives from local authorities, fishers and the IMOLA Project. Thanks to extensive in-the-field operations by the IMOLA Project, FA member's requests and concerns have been responded to:

> The project helps us a lot with rearranging fishing gear. The project staff works closely with us. When finding any mismatches on the administration map, they request local authorities to modify. They listen to us; they are very responsive working closely with local authorities and are flexible. We wish the project had more activities in our village. (Interviewee, December 2014)

It is evident that in response to strong refusals from local fishers against the policy, local governments have switched from forced removal to persuasion to convince local fishers to comply voluntarily with the gear-reduction policy. To achieve the 40% goal, local governments have given an important mandate to the FA, legally empowering and supporting it. The policy of fishing gear reduction was ultimately implemented successfully among FA members (Interviewee, December 2014).

However, the implementation faced some difficulties at the beginning with the rumour that local governments "sold water surfaces to the IMOLA Project". This story was initiated by some of the fishers because they were afraid of losing their fishing gear territory (Interviewee, December 2014). In response, the executive board worked with local authorities to investigate, and it discovered that local fishers who had more fishing gear in the commune were behind the rumour. In working with local fishers, it was important that every member received sufficient information about the policy. It is noteworthy that even when the policy target was set at the provincial level, and government funds were available to

provide compensation for those affected, the district and commune authorities were confused about how to engage with the FA. In this context, IMOLA came with its expertise and its technical staff to assist policy dialogue between the local authorities and the FA. The gaps in state capacity in terms of expertise and working relationships with the local FA were largely filled by the IMOLA Project. Here, persuasion and input legitimacy via relational capacity are important aspects of meta-governance.

Even when the local fishers and the authorities shared a view that overfishing in the lagoons was the main contributor to the problem, the general picture of fishing gear status in the lagoon was not shared among local fishers, leading to different understandings and perspectives on the status of capture fisheries and posing difficulties in implementing the policy. In assisting local governments to build a database on water circulation in the lagoon systems, the project used its fiscal resources to recruit domestic researchers from local and national universities, as well as international researchers from Italy, to conduct studies on the water dynamics of the lagoons territory (Takahashi and van Duijn 2012: 70; Interviewee, January 2015). It is important to note that the project then provided local governments and local fishers with modelling on water flows in the lagoons and between the lagoons and the ocean. This in-depth knowledge enabled local governments to figure out specific locations where the fishing gear density needed to be reduced, and to enhance water exchange between the lagoons and the ocean. The in-depth knowledge was also shared with local fishers via public meetings so that they could understand and voluntarily comply with the policy. This assistance by the project enabled local governments and local fishers to reach a consensus on removing fishing gear from the lagoons, and many local fishers then complied with the policy voluntarily.

> We all knew that we needed to do something to deal with serious population in lagoons. But we did not know how to do it without IMOLA help with knowledge. (Interviewee, December 2014)

The project staff also helped to transfer the scientific knowledge to local fishers in a simple way to aid understanding. They worked out how to simplify scientific terminology into imaginative visual words that were familiar and more practical for the fishers (Takahashi and van Duijn 2012: 70; Interviewee, December 2014; Interviewee, January 2015). In doing this, they often linked the research outcomes with the daily income from fish capture. Accordingly, the scientific knowledge became something

practical and meaningful to local fishers. Project staff tried to make clear the direct link between environmental factors and the local fishers' income:

> Thanks to IMOLA, we know that we should not catch and sell small fish on local markets, but we keep small fish to raise for bigger ones and we gain more money. Before, we caught small fish to sell as feed for pigs, but now we raise small fish for bigger ones, which we can sell with higher prices in the local market. IMOLA changed our thinking and routine behavior. (Interviewee, December 2014)

The project employed a geographical information system (GIS) tool for mapping the current locations of fishing gear within the FA's territory (Takahashi and van Duijn 2012: 70; Interviewee, December 2014; Interviewee, January 2015). It is noteworthy that the sub-department had this expertise and technical equipment to carry out this task but did not have sufficient technical staff to assist the FA because there were more than 100 of them in demand across the province. Based on the agreed boundaries manually drawn on the base map, the project technical staff plotted the boundaries into the GIS to obtain coordinates, then they field-verified the coordinates with a global positioning system (GPS) with the participation of the members of the FA's executive board and representatives of the commune authorities, who eventually signed the boundary agreement. The project used topographical maps of 1:25,000 and 1:50,000 scales, which the project purchased from the Government of Vietnam and later digitized into a GIS database. The project deployed its technical staff to undertake the mapping in the field in the commune where fishers operated fishing gear. The collected data on GPS receivers were later gathered by the project and transferred into the project's GIS database, and then they were overlaid on the topographic maps for visualization. The draft maps were then sent to each commune for final verification and the assignment of owners' names. The database and paper maps that came out of this process provided critical information about the current status of fishing gear (e.g. shape, size, quantity, location, distribution, density and ownership status) to the local authorities and fishers. While the sub-department highlighted that the project staff were not qualified to do this job, the mapping product was widely accepted by the FA, its members and the local authorities:

> We worked with two key technical experts of IMOLA; they were very helpful and disciplined, any misinformation they insisted on correction of the

> map, they insisted on principles, democracy and fairness. Their help was responsive and effective. They monitored well the process of gear reducing. We wish we could receive more support from IMOLA. (Interviewee, December 2014)

This database enabled local fishers and local governments to reach a consensus on specific locations for fishing gear removal. This process was ensured through the participation of members of the FA that used scientific explanations as a foundation for negotiations. Eventually, the total number of different fixed fishing gear, their location and size, their ownership and whether they violated existing government regulations became clear to all key actors, including Vinh Giang Fisheries Association and local governments. Different from the case in Akita, the state lacked the capacity to provide in-depth knowledge as well as translate such knowledge to local fishers. This role was taken over by the IMOLA Project (Takahashi and van Duijn 2012: 63).

This provided an important foundation for discussions and negotiations among members of the FA in an equitable manner. For example, at public meetings with fishers, thanks to the presentation of the map, attendees knew who operated more fishing gear and who operated less, and then they reached a consensus on who should reduce their gear. The mapping process was usually initiated by organizing a meeting with the commune authority (particularly fisheries staff) as well as key fishers who had a good knowledge of stake traps and their rough distribution on the communal lagoon water:

> Without IMOLA, the budget is available, but limited know-how is available. Forced removal is likely to be adopted. Forced removal is a dangerous approach because it causes social unrest and conflicts between fishers and local authorities. We listen to local fishers. We work closely with them with understanding. (Interviewee, January, 2015)

In Vinh Giang Fisheries Association it was the IMOLA Project that sent its technical staff to the field to work with the FA on mapping (Interviewee, January 2015). After the initial meeting, the project staff went to the lagoon by boat with the commune authorities and fishers to map each separate gear. During this process, the project technical staff provided hands-on training on the use of GPS for the purpose of recording mapping points. The commune authorities and key fishers accordingly learned the mapping techniques using GPS receivers. Moreover, the proj-

ect technical staff were available on call whenever the commune authorities needed their assistance. Then, after the map of the current status of fishing gear was completed, it was the IMOLA Project that organized many meetings with the FA and its members for confirmation and corrections.

> The support from [the] IMOLA Project is instrumental in implementing the fishing gear reducing policy by local governments. (Interviewee, January 2015)

Accordingly, the IMOLA Project not only assisted with the implementation of the policy but also implemented it in cooperation with Vinh Giang Fisheries Association. Obviously the role of the sub-department is limited to policy formulation. In the previous case in Akita, the state was heavily involved in the implementation of the moratorium whereas here the state did not have similar resources. While the sub-department was suffering from staff shortages, its working processes often adopted a command-and-control approach and one-way communication of its policy intention to local fishers. In contrast, the IMOLA Project invested more time and effort in two-way dialogue with local fishers by organizing many meetings so that local fishers could provide feedback. It is evident that the IMOLA Project had a closer working relationship with the Vinh Giang Fisheries Association than the state did in this case:

> Many meetings after they had the map were held to confirm the locations. Local fishers knew well the existing number of fishing gear on the field and their locations. As we all know that fishing gear are sometimes valued at 100 million VND, valuable property for local fishers, IMOLA tried to minimize the relocation. IMOLA tried to make things public and transparent. IMOLA assisted and local fishers make their decisions. This task requires a lot of negotiations among members of the association. The project staff only facilitated local fishers' discussions and negotiations, but never interfered with such processes. It took a lot of time. (Interviewee, January 2015)

However, the project was criticized for recruiting unqualified staff to do the mapping. It was pointed out that two permanent staff members of IMOLA doing the mapping with GPS did not have a university background in mapping and water dynamics. In particular, one member had an education background in aquaculture and the other had a background in English studies. This is a weakness of a foreign funded project like IMOLA:

it is quite difficult to recruit an expert to work for the project for two or three years because in Vietnam such an expert often has a permanent job with a large and stable income. In reality, the project often outsourced to find the necessary expertise by signing contracts with experts to provide training for its current staff on specific techniques so that they can carry out their tasks as required. This is what was done for the two staff members working on mapping the current status of fishing gear. The selection of international and domestic experts is another focus of critique. While the local government recommended the employment of local and domestic experts to do research on the lagoon, the project often prefers international experts, particularly from Italy, which is the donor country. While local leaders assumed that domestic experts from Vietnam could carry out studies on the circulation of the water flows in the lagoons, the project advisor, on behalf of the donor, insisted on bringing in foreign experts. The rationale given by the advisor was that foreign experts could build capacity for local governments and local fishers, with modern technology and advanced knowledge to model water flows in the lagoon system, which then were widely accepted and used by local agencies and local authorities and FAs. However, the employment of many foreign experts is costly. Moreover, local governments preferred more investment in fisheries management technical facilities, such as patrol boats or GPS receivers. The management board, on behalf of provincial government, the beneficiary of the project, complained that "funds allocated for salary and contract of consultants were large: 61.8% of the total project budget. Therefore, funding for technical operations (e.g. zone demarcation, pilot models) and technical and financial support to FAs [was] limited". It is admitted that "with such resources, IMOLA could do more" (Interviewee, January 2015). Therefore when a powerful NGO such as the FAO is involved, the meta-governance roles of the state are often challenged in terms of setting agendas.

Moreover, different understandings and different approaches by the two supporting actors sometimes occur (Interviewee, January 2015). The use of membership fees is a typical example. The IMOLA Project assumed that in co-management arrangements, the costs and benefits should be shared equally between the FAs and the commune authorities. It proposed that the fees collected from contributions by fishers' membership should be allocated 50% to the FA and 50% to the commune's budget. Later, however, the sub-department on behalf of local governments reviewed this and found that the scheme was illegal according to Vietnamese laws

regarding Natural Resources Use Tax, which allows fishers to use fisheries resources free of charge. Therefore the local governments allowed the FA to keep 100% from membership fees for its operating costs and consider that fee as membership fees. Another example is the harvesting season. When IMOLA worked with local fishers to consult about the closing periods, the local fishers proposed the period from December of one year to February of the next. The IMOLA Project used this input information for its policy recommendations to local authorities. However, this was not optimal because this period is not the breeding period, so closing at this time has little effect on preserving and increasing fish stocks. The local governments, even after receiving feedback from local fishers, still made the decisions based on scientific knowledge about the spawning season for fish. This highlights the necessity to combine both scientific and local knowledge, rather than taking the latter for granted.

As discussed earlier, the role of the IMOLA Project was to "assist" the local governments in managing fisheries resources on the lagoons. However, here, with its abundant resources, IMOLA built a closer working relationship with the Vinh Giang Fisheries Association compared with the sub-department. It is evident that the target of fishing gear reduction was originally set and initiated by the local governments, which were capable of mobilizing resources from the project to achieve their goals. It was the state (national and local government) that brought the IMOLA Project to assist the Vinh Giang Fisheries Association. Accordingly, the key actors in fisheries co-management in the case of Vinh Giang Fisheries Association, as indicated in Fig. 5.2, include local governments (provincial government, the district and commune authorities and the Sub-department of Fisheries Resources Protection), Vinh Giang Fisheries Association and the IMOLA Project. It is important to note that knowledge input for such a network is necessary to enable the policy on fishing gear reduction to be implemented. Basically the IMOLA Project carried out an important function in providing expertise and in-depth knowledge to support policy implementation. Even when it is more resourceful in terms of knowledge, the IMOLA Project cannot play the meta-governance role because all final decisions regarding the fisheries co-management arrangements are made by the local governments. The Vinh Giang Fisheries Association requires support from both local governments and the project. Compared with the case in Akita, the project played similar roles to the Akita Research Institute and the Fisheries Promotion Center. In other words, IMOLA helped with

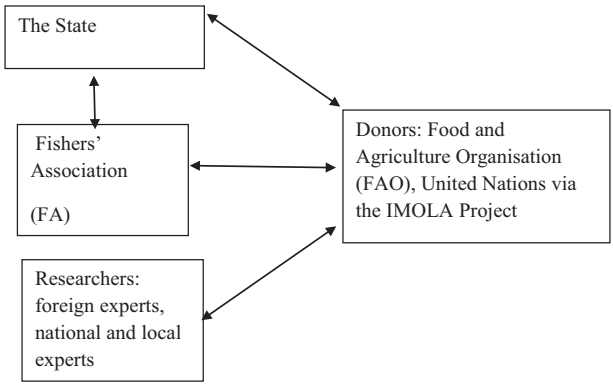


Fig. 5.2 Key actors in the fisheries co-management arrangement in Vinh Giang Fisheries Association

both providing in-depth knowledge and transferring that knowledge to local fishers.

The network found in this case matches Knoke's third model (1990: 41), as discussed in Chap. 2. As shown in Fig. 5.2, in this network there are four key actors: the state and its agencies, the FA, the IMOLA Project/FAO and researchers. According to Knoke's third model (1990: 41), the IMOLA Project is likely to be in the D position because it was connected with three other actors while the state did not connect with researchers. Accordingly, IMOLA is assumed to be the most powerful actor in this co-management arrangement. However, in reality, as analysed in the previous sections, it was the state and its agencies that had the capacity to bring the FAO/the IMOLA Project as a new actor into the fisheries governance network to achieve its policy target. Therefore the state, even when it did not have the resources to bring researchers into the network, was still a central actor. In other words, the meta-governance role of the state in this network is evident, and the network is basically state-centric.

The State's Weak Relational Capacity vis-à-vis the Non-governmental Organization

Focusing on the influence of the state in governance arrangements, meta-governance can raise the question of how a state with weak capacity is capable of meta-governing different actors engaged in the network. This section explores constraints on the state in carrying out its meta-governance

functions when it has weak capacity. In assisting local governments to implement the policy on fishing gear reduction, the IMOLA Project blamed them for creating a policy without scientific support. The policy-makers produced no rationale to justify why the target of 40% was set. The policy was designed in response to serious deterioration of the environment. It is acknowledged that a reduction of fishing gear was necessary, but why it was reduced to 40% is not clear. Therefore it was difficult for local governments to convince local fishers that 40% was a sensible target. This fact was accepted by the officer in charge of the sub-department. He said:

> Everyone knew that it was urgent to reduce the numbers of fishing gear. This was a right thing to do as an urgent action. We had no doubt on this. We acknowledged that we needed scientific foundation for this target, but in our situation, we did not own sufficient resources to carry out such research while others might have, but were not interested in this matter. Scientific research was often very costly and time consuming. (Interviewee, January 2015)

The sub-department indicated that while it did not have the expertise to conduct such studies, nor a sufficient budget to outsource the task, other capable governmental research institutes were not interested in studying the fishing capacity of the lagoons. This indicates a lack of mechanisms by local governments to involve sufficient knowledge resources at the local level to support the sub-department in policy formulation. Different from the case in Akita, the state did not have a research institute to support the fishers so had to rely on a non-state actor. It is noteworthy that with weak capacity, as admitted by the leader of the Sub-department of Fisheries Resources Protection, the policy is likely to reflect local governments' determination rather than a science-based action in response to environmental deterioration. In addition, it raises the question of why the IMOLA Project could mobilize significant engagement of both domestic and international experts but local government could not. The formulation of such a policy is problematic because it could not convince local fishers why they needed to follow the policy and how to achieve its targets.

> The policy is too ambitious without any surveys, research and a sound rationale. A policy requires [a] survey, and a back-up plan and alternatives for changing livelihoods. The local governments organized some vocational training, but their efforts did not work well. At the end, they ended in paying compensations. (Interviewee, January 2015)

While the IMOLA Project worked closely with the FA and was responsive to local fishers, the distance and the lack of resources of the sub-department undermined trust and efforts by the FA. The president of the FA reveals: "In a meeting, we met the leader of the local governments. We request a boat for patrolling. They promised to consider. But up to now, nothing happens yet. IMOLA Project is very responsive. Whenever and whatever we request they respond quickly" (Interviewee, January 2015).

The meta-governance role of the state faced difficulties as local governments, to some extent, could not establish a proper mechanism to oversee what the IMOLA Project was doing on the ground with the local FA. Therefore the local government could not take timely action to correct any wrongdoings by the IMOLA Project. One piece of evidence as analysed above is that it took up to two years for the sub-department to correct the initiative by IMOLA Project on equal sharing of the membership fees between the FA and the commune's grassroots authorities. Further evidence of the lack of relational capacity of the state is that the fishing gear map was only provided to the FA, the grassroots commune and district authorities, not to the sub-department, which needs such data for its management functions and policy formulation. Also, the sub-department lacked adequate staff to keep a regular watch on the routine performance of the FA. In contrast, the IMOLA Project sent its staff to work closely with the FA.

The management structure of the IMOLA Project constrained the meta-governance role by the state when the chief technical advisor had the right to make the final decisions in the project's agenda. The project was designed to have the director of project management (on behalf of the local governments) holding final power of approval or refusal on recommendations by the chief technical advisor. The position of project manager was originally designed to be paid by the Vietnamese side, but then the FAO provided the salary for this position. Accordingly, two out of three key figures in project management were paid by the FAO. This fact weakened the voice of the Vietnamese side in managing the project agenda. In addition, while the sub-department is the main governmental technical and administrative agency in charge of fisheries management in the province, there is no mechanism for this agency to establish a direct link with the project in order to supervise cooperate with the project in achieving fisheries management objectives for the whole province. The project management board, which was established as a mechanism for keeping the project in line with local fisheries management demand, does not include

any staff or the leader of the sub-department during the period of implementation of the policy. This explains why some of the policy recommendations did not match the sub-department's viewpoints. So the voice of the IMOLA Project simply reflected the demands of local fishers, or the donor approach rather than a shared vision among the local governments, local fishers and the foreign donor. What happened went beyond the original intension of the project to assist the local governments to implement their lagoon management policies. Because the state's technical agencies were not fully engaged with the IMOLA Project's activities, the continuation of the project's initiatives was a big challenge. In some cases, the sub-department stopped IMOLA's initiatives, such as the co-management fees sharing mechanism, or the fish capture closing period. Therefore a weak state such as Vietnam lacks state capacity in the sense that it can't set its own agenda when powerful NGOs are engaged.

However, local governments need to meta-govern the IMOLA Project because sometimes foreign experts working for the project did not properly understand local contexts, local conditions, and domestic law and regulations. A lack of understanding of local conditions by foreign experts makes the project rely completely on fishers' suggestions as a purely community-based approach. For example, the IMOLA Project is sometimes criticized for adopting a too simple approach to co-management when assisting the FA in drafting its financial management mechanisms from its membership payment. The IMOLA Project suggested that fees collected from the FA's members should be retained 50% for the FA with the remainder being transferred to the commune budget. This would have meant equal sharing of the payment between the FA and the grassroots authorities of the commune. However, this mechanism is not lawful because the Vietnam law on tax for natural resources use states that government shall not collect any fees from resource users, such as fishers. Therefore the mechanism was reviewed by the Sub-department of Fisheries Resources Protection and was abandoned from 2014. Now the FA retains 100% of the payment from its members. This is defined clearly as a membership fee. This abandonment of the financial sharing mechanism from the membership fee strongly indicates that local governments reserve the ultimate right to correct any wrongdoings in the field even when they empower non-state actors to do so.

Moreover, meta-governance was necessary when the IMOLA Project intended to bias local knowledge and the voice of fishers in the policy-making process. For example, in drafting the regulations for the protected

areas allocated to the FA, IMOLA staff interviewed local fishers about which period was best for capture closing. Local fishers preferred to close fishing activities from October to February. This suggestion was based on their experience of capture from the lagoon—normally they catch the least amount during this period. Therefore if the closing season takes place then, it is likely to have less of a negative affect on their income. This perspective was adopted by the IMOLA Project in its policy recommendation for approval. However, it was rejected by the Sub-department of Fisheries Resources Protection when it argued that fishing had to be closed from February until July every year because this is the breeding season. These data are well documented in the fisheries management guidelines of Vietnam.

It can been seen that with a lack of resources for meta-governing FAs, governments in developing countries still have an option to rely on international donors for resource provision. Here, requirements for meta-governance functions become more complicated because the local governments are required to monitor not only the FA but also the donor's representative agency. Such a job for the latter is a big challenge because it requires experience of working with international partners which often have different perspectives and often want to be considered as privileged in this relationship as a donor. The consequence of this unequal relationship on the performance of the FA is that the association did adopt the approach by the donor during the project's lifetime. After the project's termination, the local governments may adopt a different approach.

According to members of the Vinh Giang Fisheries Association, when they needed help in terms of resources, the FA often spoke to IMOLA staff first, as this project was resourceful and responsive to the FA's demands. By doing things in this way, the project has successfully built trust among fishers. The fact that interviewees wish that the project could be prolonged indicates its practical contribution to their needs. In contrast, for such practical contributions, the FA often could not rely on the state:

> IMOLA helps with providing the boundary mark poles of the fishing gear. Since then, some poles were broken, we put a request to district authorities, they promise, but not yet approved for help. When we request IMOLA, they responded very quickly. (Interviewee, January 2015)

The IMOLA Project also developed a database, which houses information related to capture fisheries and aquaculture, which is very useful for

local, district, provincial and national policy-making processes. The project has shared its experiences and expertise in working with the FA and on lagoon management on its website. However, after the project was terminated in early 2014, the website was closed down as no governmental budget was allocated to maintain it:

> It is a pity that many data about fisheries management in the province on the official website of IMOLA were removed and collapsed because of no more funding for maintenance of the website after the project termination in early 2014. (Interviewee, January 2015)

Conclusion

Overall, this chapter suggests that even with weak capacity in terms of resourcing, the state remains central to the fisheries co-management network. By investigating one specific policy of reducing fishing gear, it identifies key actors involved in fisheries co-management arrangements: local governments initiated the policies, decided which FA to work with and involved the FAO/the IMOLA Project to provide knowledge and technical know-how, and, importantly, monetary compensation for affected fishers. The FAO/IMOLA Project significantly assisted the process of active participation by the FA. Sometimes the role of local governmental agencies was overshadowed by extensive activities of the project, but, overall, local government remained the most powerful actor with its monetary resources and the unique power to correct any wrongdoings by both IMOLA and the FA. The meta-governance role of the state in this case is evident in providing fiscal support for compensation for fishers affected by fishing gear reduction. This support is important because local fishers would not accept implementation without monetary compensation. However, the chapter acknowledges that the state in the case of Vinh Giang Fisheries Association does not possess the relational capacity as the state of Japan did in supporting FAs. Such a close working relationship was created and maintained by the IMOLA Project working closely with local fishers. IMOLA in this case provided and translated in-depth knowledge to local fishers, and helped them to understand complex matters. The state was not able to perform this function.

The findings from this chapter complement Ostrom's eight conditions on the extent to which the state can foster collective action in fisheries management. 'Getting the institutions right' in Ostrom's approach is only

one side of the coin. While such external support is often short term, FAs are likely to be challenged when the donor stops its support. Therefore insights from the chapter contribute to understanding why in developing countries such as Vietnam, collective action by fishers via their FAs is still challenging. The main explanation may come from the limited resources provided by the state, as the chapter explored. Therefore, in contrast to Ostrom's sole focus on eight institutional conditions, by comparing and contrasting meta-governance roles of the state in the two cases of Akita's fisheries cooperative associations and Vinh Giang Fisheries Association, the study suggests that collective action by fishers is linked to state capacities.

In relation to Ostrom's eight institutional conditions, the chapter has indicated crucial areas where the state is required to step in. These include rule enforcement, fostering collective action and, importantly, the provision of resources demanded by fisheries management. The chapter emphasizes the importance of the institutional capacity of the state in providing a legal framework to support the FAs. Remarkably, the adoption of TURFs by the state could encourage local fishers to share management responsibilities with the state, and to join the Vinh Giang Fisheries Association. The state in this case has the capacity to bring in a new actor, the FAO, to ensure that the governance arrangement is properly resourced. The involvement of an international agency to complement its weaknesses is an option in this case. However, when involving such a powerful non-state actor, the state faced certain constraints against its meta-governance functions.

Ostrom's first institutional condition (1990) on clearly defined boundaries is challenged when local fishers cannot afford the investment in setting up mark poles to define boundaries among its members and with other fishing communities. In addition, local fishers could not manage fisheries resources themselves without knowing about fish stock levels in the water allocated to them. Defining the boundary in this case includes the allocation of water areas of the FA, which requires both technical know-how on TURFs and patrolling. As revealed in this case, both local governments and international organizations have helped with boundary identification. Again, the chapter reveals the importance of up-to-date knowledge, which is instrumental for effective action in response to fisheries management demands.

Meta-governance has been examined in both institutional and relational aspects of fisheries management. We have seen that the state of Vietnam has used its institutional capacities to give Vinh Giang Fisheries

Association a legal framework, creating an overarching framework in which collective action by fishers can materialize. Responsibilities adopted by the state mainly included promulgating laws, providing fiscal resources and bringing in a donor. In Chapter 6 the study continues to explore the uncertainty of cod stocks in Norway to further understand the meta-governance roles of the state when the essence of meta-governance goes beyond in-depth knowledge and fiscal resources in working with FAs.

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CHAPTER 6

The Norwegian Fishers' Association, Norway

Introduction

This chapter investigates the case of the Norwegian Fishers' Association (NFA), which was founded in 1926 and with active sponsorship by the state over time became a close partner of the state. As shown in Chaps. 4 and 5, the state often has the capacity to support FAs via fiscal resources and scientific knowledge. The question is how the state can still be central to the network of fisheries co-management if FAs do not rely heavily on such resources, as is the case in Norway. In answering this question, the chapter investigates the Norwegian state's response to the cod crisis in 1989 when the whole-year total quota of 1989 had been reached by 18 April so that closure was required. The chapter continues to explore the institutional arrangements that constitute the FA and investigates the dynamics of a specific crisis related to that association. In exploring the meta-governance of Norwegian fisheries co-management, the chapter investigates how the state of Norway works with other nations to decide total allowable catches (TACs) for Norwegian fishers. This is about the institutional capacity of the state. This meta-governance role is highlighted by the fact that Norway shares most of the commercially important Norwegian fish resources with other countries. Therefore the Norwegian state has to negotiate TACs on various international forums. The NFA has to rely on this authority of the state to get its TACs, and then it distributes these to its members. This process includes a series of annual arrangements between Norway and the European Union (EU). The consultations are based on the recommenda-

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tions from the International Council for the Exploration of the Sea (ICES). The chapter also shows that rules enforcement in Norwegian fisheries is conducted by the state's agencies. Description and discussion of the legal framework help to determine how far the state can support FAs in terms of both institutional arrangements and the external environment for cooperative behaviour to take place successfully. Furthermore, an analysis of crisis dynamics reveals the significant support by the state in helping fishers to cope with high levels of uncertainty about fish stocks in maintaining sustainable stocks as an important input for fisheries management. Accordingly, the analysis of both reveals the state centricity of the policy area and how Ostrom's institutional conditions are supported by that state centricity. With its authorities, the state administration still dominates decision-making power and plays a key meta-governance role.

In particular the chapter shows that the state's resources were crucial in allowing the authorities to define the international boundaries of fish stocks and also to make final decisions. In both cases the state is crucial to the success of collective action by fishers through their FA. To provide insights into how the state can remain central to the fisheries co-management network, the chapter explores the state's response to the collapse of the cod stock in the late 1980s. Different from the previous two cases, the essence of meta-governance here is about using the state's authorities in supporting fishers, first in negotiations regarding TACs and second in recovering fish stocks from overfishing. The need for a formal, supranational quota system formalizes in such a way that the state becomes less relational and more hierarchical.

Synopsis of Fisheries Management

In Norway, fisheries have been important for the livelihood of coastal communities for centuries. However, similar to other countries around the world, overfishing has challenged the sustainability of the fisheries. The NFA, which includes inshore fishers, offshore fishers, vessel owners and crews throughout Norway, is the main industry organization representing the interests of fishers. As this case reveals, the NFA plays an important role in Norwegian fisheries co-management in a close working relationship with the Ministry of Fisheries and Coastal Affairs and the Directorate of Fisheries, which are two state agencies. Importantly, with the strong empowerment by the, the NFA gained its privileged position in the fisheries arena as the sole representative of the industry in working

with the state within a subsidies system. However, since the termination of that system, which is often referred to as the General Agreement, the NFA has been aligned with wealthy fishers and is no longer the legitimate representative of the whole Norwegian fisheries industry.

The development of new fishing technology and increasing fishing capacity strongly challenged the sustainability of the fisheries. In the late 1980s, as observed by Gullestad et al. (2014: 175), "the stock situation for Northeast Arctic cod had become critical because of over fishing, and [the] Norwegian authorities saw it as necessary to limit access to cod for most of Norway's coastal fisheries". To prevent overfishing and to secure long-term fisheries resources, the state of Norway introduced the Individual Vessel Quota (IVQ) system to reduce the fishing capacity of the industry. The impacts of this policy on collective action by fishers are explored extensively in this chapter. In certain settings, some institutions are strengthened while others are weakened. The investigation of the IVQ as a new governance strategy in fisheries aims to highlight this influence.

As observed by Nilsen (2003: 177), "in 1989 the Fisheries executive directorate took the drastic step of stopping cod fishing on 19 April". "Never more April 18", as affirmed by the fisheries director, became the state's strong view on solving this crisis (Davis and Jentoft 2003: 197). In this context, the IVQ system was introduced in 1990. In this chapter, when referring to "small scale" in Norwegian fisheries, the study adopts Maurstad's definition (2000: 37): small-scale fishers are those who use boats under 13 m in length. By investigating the policy process of IVQ, the chapter provides an analysis of the dynamic interactions between the state and the NFA. The introduction of IVQs marks the start of new fisheries co-management in which the NFA is no longer the only representative of the industry but has to compete with other actors. In such a network, the working relationship between the state and the NFA is not as strong as before, particularly during the period of the General Agreement when the state and the association negotiated annually over specific government-financed subsidies for the industry. This finding shows that in fisheries governance, the state often has the capacity to bring new actor(s) into the network for meta-governance purposes. The chapter supports the argument that in fisheries co-management the relationship between the FA and the state is not an equal one in terms of authority: the state often plays a central role. Accordingly, the chapter contributes to the identification and analysis of the policy network in fisheries co-management arrangements at

the national level. It continues to examine institutional arrangements and crisis management dynamics. Underneath the broad claim about state centricity we can see similarities and differences in this regard.

Institutional Arrangements

Defining Territories in an International Context

TACs, which regulate how much fishers can harvest in a year, are a crucial input for defining the boundaries and territories that Norwegian fisheries operate within. The role of the state is important here because it is the principal negotiator of TACs at the international level, particularly with the EU and with unilateral negotiations with Russia. Thus the NFA has to rely on the Norwegian state's authority on the international stage.

The TACs system requires states that share fish stocks to cooperate for the purpose of conservation. TACs are decided annually by the EU Commission. The decision is based on scientific advice provided by the ICES, which, in turn, delegates the task of advice formulation to the Advisory Committee on Fisheries Management (ACFM), which consists of national representatives in the field of fisheries science. The ACFM provides the assessment and analysis of the state of stocks and the catch predictions, and this advice is then considered by the European Commission. Finally, the EU's Council of Ministers (comprising member states ministers) decides the final TACs with consultation of the fishery industry (for an overview, see Karagiannakos 1996). The TACs are subsequently divided into national quotas among the various member states. Council Regulation (EC) no 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources and the allocation of fishing opportunities specifies that

> The Council, acting by qualified majority on a proposal from the Commission, shall decide on catch and/or fishing effort limits and on the allocation of fishing opportunities among Member States as well as the conditions associated with those limits. Fishing opportunities shall be distributed among Member States in such a way as to assure each Member State's relative stability of fishing activities for each stock or fishery. (Article 20)

In the process of deciding TACs, the NFA is included by the state to join the Norwegian delegation in these negotiations (NCM 2009: 48).

This participation allows the NFA to voice its concerns and demands in the TAC decision-making process at the international level. Here the role of the state in defining territories is important in negotiating with countries that share the same fish stocks.

In this case, in large-scale fisheries, with the adoption of the TAC system, it is often impossible for fishers to enforce the rules system themselves. This section shows that rule enforcement is conducted by the state and that the NFA does not share this responsibility. This system enforces rules on not only Norwegian fishers but also foreign fishers. Therefore the arrangements have state-centric dimensions but are slightly different from the two previous cases.

There are three key state actors in fisheries rule enforcement in Norway: the Ministry of Fisheries and Coastal Affairs, the Directorate of Fisheries and the Norwegian Coast Guard. The rule-enforcement system focuses on surveillance through sea- and land-based controls, and penalties through fines, confiscation and the withdrawal of licences (Årland and Bjørndal 2002: 312; NCM 2009: 71). The Ministry of Fisheries and Coastal Affairs holds the formal responsibility for enforcement. In reality, the responsibility was taken by the Directorate of Fisheries, which is affiliated with the Ministry of Fisheries. The directorate has nine regional offices with the main task of quota control through dockside monitoring. Major violations in fisheries can be referred to the police—and eventually the courts. Any fish catch that exceeds the quota can be confiscated by directorate officials. The Norwegian Coast Guard—part of the Ministry of Defence—is also a key actor in enforcement. The Norwegian Coast Guard is responsible for a range of tasks within the Norwegian 200-mile zone—from the control of catches to the enforcement of gear restrictions. It also has monitoring authority over foreign vessels (Gezelius 2006: 463–464).

Mandating the Non-state Actor

By investigating how the NFA was established, this section aims to show that the state can use its resources to foster the formulation of collective action by fishers. The state of Norway provided the resources necessary for the NFA to be established and operate efficiently (Holm and Ranes 1996a: 5–6). In particular, during the 1920s, the state formulated a task force to study the possibility of merging the then regional FAs into a nationwide organization of fishers. Based on the positive recommenda-

tions of the report that it was both necessary and feasible to establish a nationwide organization, in 1926 the director of fisheries organized a "congress of fishers", which aimed to form a nationwide association. At the congress, the idea to establish a national association for Norwegian fishers was widely supported, thus the NFA was formally established on 16 July 1926 (Mikalsen et al. 2007: 202; Gezelius and Hauck 2011: 448). Originally, the NFA had two key tasks: "to stimulate cooperation among fishers" and "to promote the economic and social interests of fishers and the development of the fishing industry" (Mikalsen et al. 2007: 202). The NFA originally consisted of small-scale fishers (Holm and Ranes 1996a: 4). However, after the end of the Second World War the government of Norway intended to modernize the Norwegian economy by initiating a campaign to rebuild the fishery sector on the basis of trawlers and large-scale frozen fish production. Accordingly, processor-controlled trawlers gradually became a part of the fisheries (Holm and Ranes 1996a: 5–6). During the 1970s, these trawlers accounted for about 35% of the ground fish catches (Holm and Ranes 1996a: 5–6).

Since its establishment, the NFA has been granted an important role as a close partner to the state of Norway (Gran 2010: 8; Mikalsen et al. 2007: 202). It has become a powerful actor in the fisheries policy-making arena to protect the rights and benefits of coastal fishers. Highlights of its achievements in gaining power in fisheries governance include its success with the 1936 Trawler Act, which banned the introduction of trawlers in the Norwegian fisheries, and then in 1938 when it managed to get the Norwegian parliament to pass the Raw Fish Act (Holm and Ranes 1996a: 5; NCM 2009: 71). This act gave a legal monopoly in the raw fish market to sales organizations, which were controlled by the fishers. Accordingly, it shifted the power of market control over price formation from the merchants to the fishers (Hannesson 1985: 122; Holm and Ranes 1996a: 5). Together, the Trawler Act and the Raw Fish Act are considered an important legal basis for the fisheries co-management arrangements between the state and the FA to protect the interests of small-scale, coastal fishers. Thus it is evident that the state created an institutional foundation for the NFA to carry out its assigned mandates.

The power of the NFA in the fisheries governance of Norway was further strengthened in the 1960s when the state and the association came to a General Agreement in 1964. This agreement had two main objectives: strengthening the economic efficiency of the industry and increasing the

average income of fishers (FAO 2003: 20; Gullestad et al. 2014: 174; Jentoft and Mikalsen 2014: 4–5; OECD 2006: 321). To ensure that fishers received wages equivalent to those paid to shore-side workers, annual negotiations between the state and the NFA were undertaken regarding specific government-financed subsidies. The subsidies to the Norwegian fisheries sector peaked around 1980 when they amounted to about a third of the first-hand value of fish, increased during the cod crisis and then decreased significantly from the mid-1990s (see Fig. 6.1) (Isaksen 2000: 21; Gullestad et al. 2014: 175).

The amount of these subsidies, which was often substantial, depended on the state of the fishery. There are many forms of subsidy under the General Agreement: income-earning measures which include price support, insurance subsidies, operating subsidies; social programmes which include minimum income guarantees, vacation support and unemployment insurance; miscellaneous support which includes bait subsidies, gear subsidies and damage compensation; and structural and efficiency support measures which include buyback schemes, experimental fisheries and market support (OECD 2006: 321). It is worth noting that under the General Agreement the level and forms of state subsidies are decided through annual negotiations between the state and the NFA. In other words, the NFA negotiates with the state on behalf of the whole fishing industry. However, subsidies for the fishing industry were gradually reduced during the 1990s and the formal agreement, formalizing the subsidy scheme, was

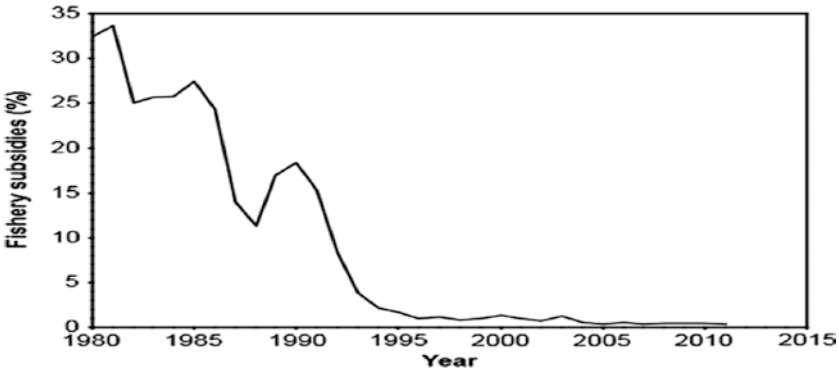

Fig. 6.1 State's subsidies as a percentage of the total first-hand value of fish for Norwegian fishers's Association from 1980 (Gullestad et al. 2014: 175)

finally terminated on 1 January 2005. This happened largely as a consequence of European Free Trade Agreement and EU requirements (Gullestad et al. 2014: 175; Jentoft and Johnsen 2015: 712). The subsidies provided by the state were instrumental in supporting the NFA to pursue its original objectives.

The General Agreement granted the NFA a privileged position over other actors from the industry. Under this agreement, the exclusive rights of participation given to the NFA enabled its representatives to occupy formal roles as a key public policy advisor (Jentoft and Mikalsen 1987: 225; Hannesson 1985: 123; Isaksen 2000: 5). The NFA was given the right to request negotiations concerning support to the industry whenever it expected the harvesting sector's profitability to be low (Hannesson 1985: 123; Isaksen 2000: 5). The NFA was influential in relation to the Norwegian parliament, which had to approve any agreements on financial support reached between the government and the NFA, based on a proposition to the parliament (Hannesson 1985: 123; Isaksen 2000: 5). The NFA often requested the state to pay a price subsidy whenever the difference between the world market price and the first-hand price of fish was too low to cover the costs of the processing industry and the distribution sector (Hannesson 1985: 123; Isaksen 2000: 5). In this setting, the NFA gains considerable influence in relation to the state because it is the only legitimate representative of the industry. As Jentoft and Mikalsen (1987: 226) admit, "negotiations are real, at least as far as the level of state subsidies is concerned". The price subsidies, however, were criticized for working contrary to the goal of effort reduction and economic efficiency because they hinder a necessary restructuring of the fleet (Jentoft and Mikalsen 1987: 225; Gullestad et al. 2014: 175). A former minister of fisheries says:

> The restructuring (of the purse seine fleet) is delayed because those vessels that should have been retired get their fair share of the subsidies. And the larger the subsidies, the less attractive it is to leave the fisheries. (quoted in Jentoft and Mikalsen 1987: 225)

In response to this, the state sought to modify the subsidies system. However, the NFA strongly opposed the proposed changes to the existing regime of price subsidies because it was afraid that those changes could reduce the scope of price subsidies. Instead, the NFA emphasized the responsibility of government in keeping fishers' incomes at an adequate

level. The proposal of the Task Force on Rural Communities for a regional redistribution of subsidies was rejected by the NFA for two main reasons (Jentoft and Mikalsen 1987: 225). First, the outcome of the redistribution could result in a split association because the proposal, if enforced, would benefit membership groups in northern Norway at the expense of groups in the south. Second, the changes proposed would imply a possible reduction in price subsidies, which was likely to be opposed by most of its members. Facing this strong rejection by the NFA, the state did not mention the proposal again in the 1986 agreement (Jentoft and Mikalsen 1987: 225). This reveals the substantial influence of the NFA in relation to the state during the 1980s. However, this does not mean that the state was allied with the NFA when it decided to reduce and remove such subsidies according to international agreements. Therefore the state chose to reinforce collective action by fishers via the NFA by not implementing this policy. Similar to the previous cases, this one shows that the state can foster and support collective action by fishers. In contrast, the state in this case became more hierarchical and less relational.

However, the quality of working relationships between the NFA and governments has changed since the 1980s when the General Agreement and the system of subsidies were gradually reduced and the agreement terminated in 2004. As a result, the NFA relieved itself of its responsibility for maintaining employment opportunities in coastal communities and instead sought to boost returns and was captured by a number of wealthy members (Mikalsen et al. 2007: 205–206). As Nilsen (2003: 179) confirms, "a centralizing of fishing rights into the hands of steadily fewer people is taking place in Norwegian fishing".

The Norwegian Fishers' Association in a Multi-actor and State-Centric Network

This section shows that fisheries governance occurs in the shadow of hierarchy, and that the state remains the weighty actor with the ability to make final decisions in any cases of fisheries management. The essence of meta-governance is the state's authority in making final decisions and including new actors in the fisheries governance network.

Since its beginning in the early 1950s, trawling has been hailed as a symbol of modernity and efficiency in Norway (Standal and Aarset 2008: 664). In the late 1980s, the government opened up opportunities for the renewal of the trawler fleet, and banks were positive about financing the

next generation of cod trawlers. In a few years, 20 new factory trawlers with a total value of NOK1.5–2 billion were contracted (Standal and Aarset 2008: 664). In 1989, the trawler fleet consisted of a total of 129 vessels. Of these, 25 processed fillet on board, 53 supplied fresh and frozen fish to onshore processors, and 51 smaller trawlers fished on a lower quota basis than the two other groups (Standal and Aarset 2008: 664).

However, the policy of industrialization and restructuring was controversial within the industry and generated intense conflict within the NFA (Jentoft and Johnsen 2015: 714). In 1988, a big group of mainly small-scale fishers of the NFA, who disagreed with the government and the NFA on this policy and eventually left the latter to establish their own organization, the Norwegian Coastal Fishers' Association (NCFA) (Jentoft and Johnsen 2015: 714). Since its establishment, the NCFA has provided a voice for smaller-scale fishers and differs sharply from the NFA on various issues. It has focused its efforts mainly on convincing the government to abandon the IVQ system, to reopen the commons and to lift the restrictions on small-scale fisheries (Jentoft and Johnsen 2015: 714). After a number of years the NCFA has gained importance. However, the NFA remains the most influential actor in fisheries and has assumed the role of compromise-maker among different actors (Jentoft and Johnsen 2015: 714).

In the new setting, the state has used its authority to meta-govern a new governance network of more actors. The new trend of a multi-actor network in fisheries governance in Norway is further illustrated in the case of Saami fishing rights (Jentoft and Mikalsen 2014: 11–12). As further explored in the next sections, the IVQ policy, which was a response by the state to support fishers in coping with the cod crisis, did not take into account the interests of small-scale and part-time fishers. Among them, Saami fishers, who comprised a large section of the northern Norwegian coastal settlement from the Ofoten District northwards, were markedly affected by the policy, as a result of which most were unable to meet the strict requirements to obtain a vessel quota (Nilsen 2003: 164). Saami fishing is characterized by its small scale and the fact that fishing is combined with other occupations, such as farming, hunting and animal husbandry (Nilsen 2003: 164).

In 1990, in response to the introduction of the IVQ system, the Norwegian Saami parliament raised the issue with the government that the quota system seemed to discriminate against Saami fishers (Jentoft and Mikalsen 2014: 10; Smith 2014: 5; Søreng 2013: 11). The Norwegian

Saami parliament, which was established in 1989 and is elected once every four years, represents the voice of the Saami people and aims to strengthen their political position and the struggle for their just treatment (Søreng 2013: 18). In 1990 the Smith Report, which was commissioned by the Norwegian government with reference to national and international law, concluded that the Norwegian state had a legal duty to ensure the survival of the coastal Saami culture (Jentoft and Mikalsen 2014: 10; Smith 2014: 5; Søreng 2013: 16). As the fishery was always a major source of livelihood in several Saami communities, this translated into an obligation of government to secure their rights to fish, acknowledging their tenure and self-determination. The Saami parliament asked for a Saami Fisheries Zone. Its statement (Issue 33/1992) read:

> The demand of a district fisheries zone, the meaning is a collective right to fish in a commons open for all who reside within a geographically demarcated area. Given the government regulations that are necessary to sustain the resource base, local areas should obtain more responsibility in the management of their own resources. In such management institutions we see it as important that the Saami people, through the Saami Parliament, should be represented in line with those political institutions in which the local populations otherwise are represented. (quoted in Davis and Jentoft 2003: 198)

Until 2008, the government of Norway responded to the Saami parliament's request by appointing the Coastal Fishing Commission to work on a report in 2008 with a chapter on the international legal basis of the Sea Saami right to fish (Jentoft and Mikalsen 2014: 10; Smith 2014: 5). The report concluded that there is such an Indigenous right, and the commission proposed new legislation on the right to fish for those living along the coast of Finnmark County—Saami. The NFA opposed this proposed legislation because it was concerned that any decentralization of management functions to lower levels of authority would undermine its relatively privileged position in the Norwegian fisheries (Jentoft and Mikalsen 2014: 10; Søreng 2013: 16). The NFA argued:

> The Fishers' Association [NFA] considers the proposal to establish a separate fisheries zone outside Finnmark, which also includes a separate management organization, as an attempt to introduce a regional management system in Finnmark … This is a fundamental departure from the principles that have been basic in recent times, which is governance by the state … Because of the serious consequences of a regional management and regula-

> tion of fisheries resources, the Fishers' Association rejects the entire proposal" (quoted in Jentoft and Mikalsen 2014: 10)

However, after a hearing process, consultations were conducted between the Ministry of Fisheries and the Saami parliament. A government bill was presented to the Norwegian parliament in accordance with this result, and it approved the proposal (Smith 2014: 5). It is evident that even though the NFA rejected the proposal, the government bill of March 2012 for new legislation on these fishing rights was enacted from the summer of 2012. The authority of the state therefore enabled it to make final decisions and the NFA had to follow such decisions by the state.

The capacity of the state to bring new actor(s) into the fisheries co-management network is clear from the case of the establishment of Tvedestrand Marine Protected Areas in 2012 (Makino et al. 2014: 388; Jentoft and Mikalsen 2014: 11–12). Tvedestrand is a small coastal municipality in the county of Aust-Agder, facing the North Sea. Here, the pressure from recreational activities is much greater than in many other parts of Norway. There is thus a need for resource management, nature conservation and conflict resolution among different stakeholders competing for space and resources. In collaboration with the Institute of Marine Research, which has long been taking stock of the marine ecosystem and is stationed in the neighbourhood, municipal authorities initiated a project called Aktive forvaltning (Active management) to establish a marine protected area. However, the NFA and its regional branch strongly rejected it. The proposal, which includes 15% of the ocean area of the municipality and identifies four different functional zones of multiple use, fish farming, habitat and protection, was presented to the municipal assembly in March 2011 (Jentoft and Mikalsen 2014: 11). A no-fishing rule was proposed for the habitat and protection zones. The municipality initiated a hearing process and several stakeholder meetings were held, resulting in some minor revisions of the plan. The NFA was very critical. It not only feels excluded but also sees the initiative, if the government went along with it, as representing a major policy shift in the Norwegian fisheries management system (Makino et al. 2014: 388). This criticism, however, did not prevent the municipal assembly from supporting the conservation plan and the Ministry of Fisheries and Coastal Affairs of Norway from accepting the zoning proposal in June 2012 (Jentoft and Mikalsen 2014: 12).

Crisis Dynamics

The Collapse of the Cod Stocks

As mentioned above, subsidies to the Norwegian fisheries sector peaked around 1980 and were gradually reduced during the 1980s. The collapse of cod stocks (see below) took place late in the1980s when subsidies were no longer the main source of support for the NFA. How did the state work with the NFA and the NFCA in response to the crisis? This section shows that it was the Directorate of Fisheries that initiated proposals for the IVQ that in turn formed the basis for negotiations with the industry representatives. Details of the negotiations and the influence of the NFA are explored and analysed in the following section. Once again, we can claim that the state is central to fisheries management arrangements.

Cod (*Gadus morhua*) has for centuries been the main source of income for coastal fishers in north Norwegian waters. There are two fishing seasons for migrant cod from the Barents Sea along the coast of Norway, a winter fishery with spawning cod, and a spring fishery with feeding cod (Maurstad 2000: 38). In addition, coastal cod can be found year round (Maurstad 2000: 38). Both spring and winter fisheries in coastal waters provide small-scale fishers with a good source of income (Davis and Jentoft 2003: 197). According to Holm and Rånes (1996a: 8), the Northeast Arctic cod stocks are potentially the largest stocks of true cod (*Gadus morhua L.*) in the world and the single most important resource in the Norwegian fishery.

The Barents Sea and the area off Svalbard are the most important feeding grounds. Cod reach maturity at the age of seven to nine years and then migrate to the spawning grounds along the Norwegian coast. The spawning migration, which occurs from January to March, formed the basis of the Lofoten fishery, traditionally the most important Norwegian cod fishery. A second important seasonal fishery took place in March to June, when fishers targeted cod following the capelin's spawning migration to the coast of Finnmark (Holm and Rånes 1996a: 8). Since the mid-1970s, fishery biologists have regularly measured the size of the cod stocks and provided advice to the state to set a TAC on an annual basis. Cod is managed on a bilateral basis, and the TAC is shared between Norway and Russia (Maurstad 2000: 39).

In the late 1980s, the stock situation for Northeast Arctic cod had become critical. The cause of the 1989 crisis is blamed mainly on over-

fishing (Gullestad et al. 2014: 175; Maurstad 2000: 39; OECD 2011: 35–36; Standal and Aarset 2008: 664). According to Maurstad (2000: 39), while the TAC was set too high during this period, in terms of closing the fishery when the TAC was met, enforcement was poor in the 1980s. As a consequence, over fishing the TAC was common. For example, the TAC for 1988 was set at 590,000 metric tons (Maurstad 2000: 39). However, later that year, scientists found less growth in the stock and the quota was reduced to 450,000 metric tons (Maurstad 2000: 39). The TACs were then reduced further. For example, the TAC for 1989 was 300,000 tons (Maurstad 2000: 39). In an effort to reduce fishing capacities, during the 1980s some of the monetary support to the sector was utilized to finance scrapping schemes to reduce fleet capacity (Gullestad et al. 2014: 176).

Hierarchical Decision by the State to Close the Cod Fishery

In response to the crisis, the state introduced the IVQ system against the background of a significant decline in the cod stocks. This decision was crucial to the survival of the cod stocks and therefore the livelihood of Norwegian fishers. As a result of a sudden and unexpected decline in stocks, the overall TAC for cod was reduced to 340,000 tons in 1989, compared with 630,000 tons the previous year (see Table 6.1) (Davis and Jentoft 2003: 197; Gezelius 2002: 73; Holm and Ranes 1996a: 8; Jentoft and Johnsen 2015: 713; Maurstad 1992: 2, 2000: 39; Standal and Aarset 2008: 665). The IVQ in Norway aims, first, to secure a decentralized ownership and, second, to avoid unprofitable overcapacity (Standal and Aarset 2008: 663). At the same time, 1989 was different from most years during the latter half of the 1980s. The cod in that year proved easy to catch. Therefore the whole-year total quota of 1989 was reached by 18 April. During this time the cod fisheries were managed under a maximum

Table 6.1 Total allowable catches and actual catches of the cod fishery for the 1981–1990 period (thousand tons)

Year	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*
Agreed TAC	440	600	630	340	200	245	300	540	740	740
Total landings	456	554	457	349	236	344	549	626	823	781

Source: Holm and Ranes 1996a: 8

quota regime that specified that no more than 85% of the TAC could be harvested before 1 September. By mid-April 1989, however, this limit had already been reached. Therefore a closure was required as early as 18 April (Davis and Jentoft 2003: 197).

As mentioned above, the crisis with the cod stocks in 1989 indicates the weakness of a maximum quota regime. The sudden stop on cod fishing benefited only those who had started early, while the latecomer fishers who often operated the smallest vessels received little or nothing (Davis and Jentoft 2003: 197; Gezelius 2002: 73; Hersoug et al. 2000: 323; Holm and Rånes 1996a: 8; Maurstad 2000: 39). The crisis caused particularly significant losses to small-boat fishers whose traditional cod fishery season started after 18 April (Davis and Jentoft 2003: 197). In response to this, the Directorate of Fisheries initiated IVQ negotiations with the industry representatives. An IVQ system was drafted during the autumn of 1989 and in 1990, and the IVQ system was officially introduced after that (Davis and Jentoft 2003: 197).

Policy Process of the Individual Vessel Quota System

It is evident that the introduction of the IVQ was an attempt by the state to reduce overfishing of the cod stocks. The policy process that introduced the IVQ system took place in the Regulatory Council, which was formed in 1983, through an amendment of the Salt Water Fishing Act (Gezelius 2002: 73; Hersoug et al. 2000: 325; Holm and Ranes 1996a: 12; Standal and Aarset 2008: 665). The council was a new platform where the NFA among other industry representatives can influence fisheries management decisions. The council included representatives from eight bodies: the NFA (five representatives), the Seamen's Union (one representative), the Association of Fish Processors, the Food and Allied Worker's Union (one representative), the Directorate of Fisheries (two representatives), the Institute of Marine Research (one representative), the Directorate for the Management of Natural Resources (one representative) and the Saami parliament (one representative) (Holm and Ranes 1996a: 30). The council was chaired by the Director of Fisheries (Hersoug et al. 2000: 325). It had 14 members, 9 of whom were industry representatives (Holm and Ranes 1996a: 12). The council formally only offered advice and the minister of fisheries and coastal affairs was responsible for taking the final decisions. Notably, however, the council's recommendations were influential in the allocation of fishing rights among different groups of fishers (Gezelius

2002: 73; Holm and Ranes 1996a: 12). The director of fisheries proposed a detailed plan for the council to work out its recommendations for the detailed design of the IVQ policy.

Early in November 1989 in the meeting of the council, the directorate proposed four options for discussions about the vessel quota system (see Table 6.2) (Holm and Ranes 1996a: 13). The first was the most inclusive, allocating quota rights to 3902 vessels, and the fourth was the most exclusive, granting quotas to only 2038 vessels. All four options ensured that larger vessels could land more fish than smaller vessels in order to qualify for a vessel quota. During discussions, the director of fisheries supported the third option, granting quotas to 3021 vessels, and this was supported by the Norwegian Seamen's Union but was strongly opposed by the NFA. The NFA suggested the first option. It argued that a high qualification limit would exclude a large number of fishers for whom the cod fishery provided a small by absolutely necessary part of their income. However, the ministry was not convinced by this argument. In the end the third option was adopted in a government cabinet meeting of 8 December 1989 (Holm and Ranes 1996a: 14). In response to the final approval, four days later, at the final Regulatory Council's meeting, the NFA representatives expressed their dissatisfaction with the Ministry of Fisheries' decision. They argued that it was very difficult for the NFA to take any responsibility for the implementation of the regulations. However, they decided to continue participating in the process (Holm and Ranes 1996a: 14). We can therefore claim that the state played a leading role in this policy forum.

Regarding the allocation principle within the vessel quota, it was the Directorate of Fisheries that had proposed a "historical key", the vessel's mean catch during the 1987–1989 period. At the same time, the representatives of the NFA on the Regulatory Council proposed that crew size should be a key criterion in the quota-allocation process (Holm and Ranes 1996a: 15–16). However, this was rejected during the council's negotiations, primarily because the principle of crew size was claimed to be impossible to enforce. Accordingly, the NFA's representatives had to withdraw

Table 6.2 The Directorate of Fisheries' four options for the vessel quota system (Holm and Ranes 1996a: 13)

	Option 1	*Option 2*	*Option 3*	*Option 4*
Number of eligible vessels	3902	3492	3021	2038

their proposals and finally the council approved the directorate's solution (Holm and Ranes 1996a: 15–16).

As discussed in the previous section, under the General Agreement, negotiations in fisheries governance took place between two main actors: the NFA and the state. Until 1986, the NFA still had considerable influence in relation to the state. This arrangement changed with the introduction of the IVQ when the NFA accounted for only five out of nine representatives from the industry. In the new network of actors, its interests have to compete with those of other actors, particularly the processors, who require a stable landing pattern to protect their economic interests in fish processing. The fact that the IVQ system was finally decided by the director, and that the NFA had to accept it, can be interpreted as a weakened position of the association in the new network. In the first issue of IVQs, the NFA lost its voice. It is evident that in key debates about the process of formulation of the IVQ policy, the state administration still dominated decision-making power and played a key meta-governance role.

The IVQ system classified fishers in Norway into two groups (Nilsen 2003: 177; OECD 2011: 35–36; Søreng 2007: 193). Group I, which included the most active vessels, as measured by the quantity of cod landed in the 1987–1989 period, were put into a vessel quota regime. Accordingly, fishers in Group I were allocated fixed IVQs. These were exclusive, and the vessel owner could decide when and where to catch. Group II, which included the less active vessels, were allowed to fish competitively within a group quota. The quotas for Group II were inclusive. In other words, there were no restrictions on participation in this group and any registered fisher could join. Regarding the division of the quota between the two groups, only 20% of the total quota in the coastal cod fishery was allocated to Group II, and for fishers belonging to Group II a small maximum quota was applied to each vessel (Nilsen 2003: 177, Søreng 2007: 193).

Thus while fishers fin Group I had guaranteed rights with a fixed quota, those in Group II had to fish on a competitive basis. For the latter, if the group's TAC was reached, fishing would have to stop, as happened with the cod stocks in April 1989. Accordingly, fishers in this group were encouraged to race for fish because those who started fishing early might have a chance of reaching their maximum quotas (Søreng 2007: 195). In addition, the size of quota assigned to Group II was far smaller than for Group I. According to Maurstad (2000: 39), in 1990, with only 3548 boats, Group I were granted a quota of 73,000 tons of cod, while, with

more than 4000 boats, Group II was allocated only 12,000 tons of the Norwegian TAC.

This policy has more or less succeeded in terms of reducing the number of fishing vessels and halting the growth in fishing capacity as measured by the aggregate horsepower of the fleet (see Fig. 6.2) (Gullestad et al. 2014: 176). The total number of fishing vessels in Norway declined markedly during the period 1990–2011. From a total of almost 16,000 vessels in 1990, this figure was virtually halved to less than 8000 in 2011 (Gullestad et al. 2014: 176). However, another indicator of fishing capacity is the kilowatts of engine power. In Norway, the traditional way of stating engine power is in horsepower (HP), where 1 HP equals 735.499 W (Isaksen 2000: 22). The total engine power for the fishing fleet is shown in Fig. 6.2 for 1990–2011 (Isaksen 2000: 25). While the number of fishing vessels declined during this period, the total engine power for the fishing fleet did not decrease but instead increased slightly from less than 1600,000 HP in 1990 to about 1700,000 HP in 2011 (Gullestad et al. 2014: 176). This implies that a shift to large-scale fishing in Norway is affirmed by Standal and Aarset (2008: 665), who argued that after the introduction of the IVQ system, "considerable excess capacity remained in the trawler fleet". In spite of this shortcoming of the policy, the state played an important role in helping the industry to survive by reducing fishing capacity.

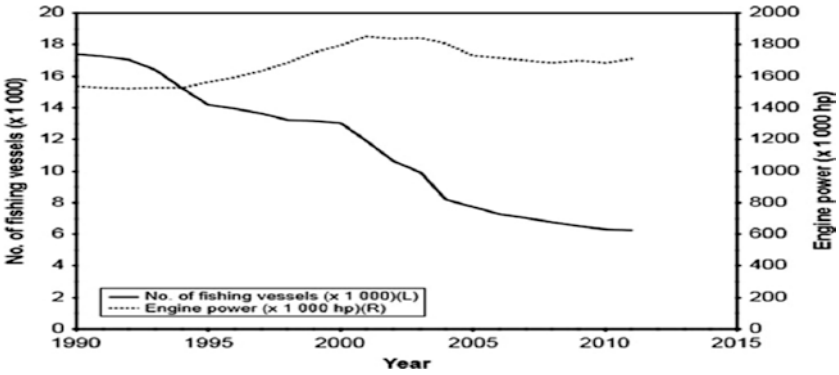

Fig. 6.2 Development of the total number of fishing vessels and engine power in the Norwegian fleet from 1990 to 2011 (Gullestad et al. 2014: 176)

Lack of Representativeness by Small-Scale Fishers

In the formulation of this policy, the voice of small-scale fishers was not acknowledged. This resulted from a lack of participation of small-scale fishers in the NFA, which has been allied with wealthy quota holders. This is supported by Søreng (2007: 205), who says that

> other people or institutions concoct narratives for others without including them in a conversation; this is what power is about. Some people decide about other people's job, their livelihoods, and their identities. But, even as puppets in a power game, people are still co-authors of history—that other enacted dramatic narrative in which they are also the actors. (Czarniawska 2004: 5 quoted in Søreng 2007: 205)

Local small-scale fishers were not happy with the policy and they commented rather ironically about the new allocation rules: "boat length–they might as well have chosen boat color!" (quoted from Maurstad 2000: 46). When the state was insulated from fishers, it could not understand the relativity and consensus from fishers, especially small-scale fishers and Saami. Almost no Saami people were qualified for quota group I. The policy was supported by only the NFA, which represented large-scale fishers. As this chapter shows, the policy formulation of the IVQ lacks involvement from fishers on behalf of small-scale fishers, therefore, the meta-governance role of the state is not effective because this policy has not encouraged collective action among Norwegian fishers but instead deepened their differences.

The small-scale fishers and the Saami now had in common a lack of power to set the agenda and to define policy in the NFA. In the relationship between the state, the NFA and the NCFA, the NFA often supported the state, and the state often favoured the NFA over the NFCA. This can be illustrated in the policy formulation of a structural fund over a five-year period that aimed to buy out and scrap coastal vessels of less than 15 m (OECD 2011: 38). This policy would mostly affect small-scale fishers. During 2002, the Ministry of Fisheries proposed a decommissioning scheme for the coastal fleet, which was partly financed by a fee on first-hand sales of fish (OECD 2011: 38). The proposal was supported by the NFA, on condition that the government contributed matching funds to the structural fund. The government did this in 2003 and 2004, and also made contributions after 2004 (OECD 2011: 38). However, the proposal

was opposed primarily by the NFCA, which argued that there was no overcapacity in the smaller part of the coastal fleet (OECD 2011: 39).

Problematic Distribution of Fishing Resources

From 1990 the IVQ regime created an imbalance with regard to fishing rights and thus divided Norwegian fishers into two categories: a privileged group and a marginalized group (Berkes 2009: 1698; Mikalsen et al. 2007: 207; NCM 2009: 48; Søreng 2007: 195). The privileged group includes professional and year-round fishers with a good record for the quantity of cod landed in the 1987–1989 period. In contrast the marginalized group includes mostly part-time and small-scale fishers who were considered to be less active. One consequence of this policy is that "boats are sold out of the small-scale sector" (Maurstad 2000: 45). Accordingly, the smaller vessels were widely expected to be the main losers in a transition to a rights-based regime (Søreng 2007: 193). This imbalance was evident when about 80% of the quota was allocated to Group I, and the membership of Group I was strictly controlled (Søreng 2007: 193). The Nordic Council of Ministers (2009: 48) confirms this negative effect:

> The vessel quota system had especially negative effects on small-scale fishers who were fishing in the fjords and close to the coast. Almost none of the small-scale fishers in the fjords met the criteria for receiving a vessel quota in the first allocation. Many had to give up their fishing in the face of competition from bigger vessels with financially powerful owners.

Therefore the IVQ regime favoured a group of wealthy fishers in the industry by giving them exclusive rights and generous quotas. The system does not take the interests of small-scale fishers into account. The IVQ system was originally designed by the government as a temporary measure to cope with the fish stock crisis in 1989, and was planned to end when the stock recovered (Søreng 2007: 193). However, the quota system has gradually become consolidated in Norway (Hersoug 2005: 270; Søreng 2007: 193). It is noteworthy that despite the recovery of the cod, the NFA, which represents large-scale fishers, has stepped away from its earlier concerns for small-scale fishers (Hersoug et al. 2000: 325; Holm and Ranes 1996a: 24). As Mikalsen et al. (2007: 206) observe, "The extension of a rights-based, IQ-type of management regime to the inshore fishery—[has been] actively supported by the leadership of the associa-

tion, but vociferously opposed by a fairly large minority of its own members as well as by small-scale fishers in general". In addition, the policy departed from the overall goal of Norwegian fisheries with a focus on job generation as originally set out. The stated goals of Norwegian fishery policy are occupation and settlement in remote regions, as well as economic efficiency and sustainable resources. According to these goals, the result of the new regulations is indeed a paradox. The improvements in economic efficiency and sustainability are highly questionable. However, the new policy led to a dramatic reduction in fishing as an occupation (Maurstad 2000: 45).

Transforming the Norwegian Fishers' Association

As discussed above, the IVQ system, which was introduced as a temporary crisis measure, has become a long-term governance system for the Norwegian coastal cod fishery. This change of strategy has transformed the NFA, from representing both small-scale and large-scale fishers to representing only the latter. For fishers, vessel quotas and fishing rights are important assets. Within this new regime, larger vessels and year-round professional fishers have been favoured over the small-scale group (Holm and Ranes 1996a: 24). This change has enabled the domination by large-scale operators and offshore trawlers of the small-scale fishers (Berkes 2009: 1698; Mikalsen et al. 2007: 207). Consequently, "the association [NFA] changed from being an inclusive organization and a defender of social responsibility, to an organization defending the narrow economic interests of a select group" (Mikalsen et al. 2007: 207). It "has abandoned its traditional role as spokesman for the coast and become an interest organization for quota owners" (Makino et al. 2014: 388). The NFA does not attend to small-scale fishers' interests as it used to, so they have decided to voice their interests elsewhere. The unintended consequence of the policy is that the NFA is no longer the legitimate representative of all fishers. This change has transformed it from something akin to a public interest group into what is essentially a "trade union" pursuing the economic interests of its most powerful members (Holm and Ranes 1996a: 18; Mikalsen et al. 2007: 207; Nilsen 2003: 179). Holm and Ranes (1996a: 18) confirm that in the NFA "the large-scale professional has substituted for the small-scale part-timer as the association's key client". Therefore instead of the traditional insistence that fishing should be regarded as a culture bearer and the basis for the way of life in coastal communities, the NFA has

become preoccupied with the economic imperatives of large-scale fishing. Indeed, it currently includes "the large-scale trawler whose economic and political clout in Norwegian fisheries is considerable" and has "become an interest organization for quota owners" (Makino et al. 2014: 388).

This transformation of the NFA is evident in the policy formulation of individual transferable quotas for vessels of less than 11 m in length. In April 2014 the government circulated a consultation paper about the transferability of quota rights within the group of vessels that are less than 11 m in length and have IVQs. Many of the fisheries-dependent communities that have witnessed the downsizing of small-scale fisheries in recent years remain sceptical. In response to this proposal, the NFCA was in opposition while the NFA's opinion was supportive. However, many concerns were raised about the grave possibility of a further reduction in small-scale fisheries as a result of that transferability (Jentoft and Johnsen 2015: 715). Finally, the government decided to shelve the proposal because "the variety of arguments and alliances made it difficult to get clear support for the proposal" (Jentoft and Johnsen 2015: 715).

As analysed above, in a group of resource users, there often exist different interests. Those interests have competed with each other to co-exist in a governance association. It is arguable that the internal power structure of the NFA does not exist independently from external factors, particularly in this case the state's governance strategies. The findings in this chapter show that there is a link between the national policies introduced in fisheries and the internal power structure of the NFA. When Ostrom talks about mechanisms for conflict resolution, she does not mention external factors such as the state's influence. Yet this case shows that the external setting by the state has an influence on internal conflicts between the two main groups of the NFA by encouraging or discouraging the interests of one group over those of the other. The IVQ system contributed to splitting the NFA when this policy favoured only the trawler group, rather than mediating the conflicts between the two groups. The NFA that was originally designed to protect the interests of coastal fishers now works for the benefit of the dominant group. To this point the policy is not effective in facilitating collective action by fishers because it has transformed the NFA and contributed to splitting it, as discussed above.

With the introduction of IVQs, a new network of fisheries governance in Norway has been established. The key actors are summarized in Fig. 6.3. New actors include organizations such as the NFCA, the Association of Fish Processors, Friends of the Earth, Norway, and the Saami parliament.

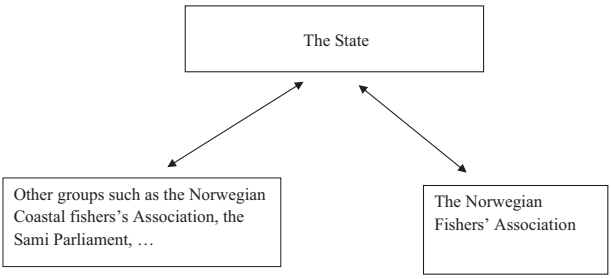

Fig. 6.3 Key actors in the fisheries co-management arrangement in Norwegian Fisheries Co-management, Norway, since the introduction of the IVQ system

The NFA has become one actor among many. Its privileged position has been weakened as other stakeholders have become formally involved in management proceedings (Gran 2010: 7; Jentoft and Mikalsen 2014: 4; Johnsen and Hersoug 2014: 64; Mikalsen et al. 2007: 207; Søreng 2013: 14–19, Standal 2007: 8). As many authors confirm, the NFA still continues to be the most influential interest organization (Gran 2010: 7; Jentoft and Mikalsen 2014: 4; Johnsen and Hersoug 2014: 64; Makino et al. 2014: 388; Mikalsen et al. 2007: 207; Søreng 2013: 14–19, Standal 2007: 8). However, in this multi-actor network, the state reserves the right to make final decisions. In other words, the fisheries governance arrangements are largely state-centric.

Conclusion

Overall, this chapter suggests that the relationship between the industry and the state is not an equal one. We have seen that the Norwegian fishers had to rely on the state to negotiate TACs with other nations and that the state drives the rule-enforcement process in a much more hierarchical manner than that seen in Japan or Vietnam. The TACs system highlights the important role of the state in working with other nations to define fisheries territories. Such an authority is out of reach for any non-state actors such as the NFA. When investigating the process of IVQ policy formulation and the case of Saami fishing rights, the chapter shows that the decision-making power lies within the state administration, while the NFA mainly serves as an advisor, albeit a biased one. The co-management arrangement is thus asymmetric. This case shows that the state can use its authority to bring new actor(s) into the co-management network.

Ostrom's first institutional condition (1990) on clearly defined boundaries was a focus. The high level of uncertainty of fisheries resource characteristics, which was a key challenge to the fisheries cooperative association (FCA) in Akita, and Vinh Giang Fisheries Association, continued to challenge Norwegian fishers in this case to define clear boundaries of the fish stocks. The state was required to perform its meta-governance role to ensure the well-being of the cod stocks by command and control via policy formulation of the IVQs. However, in this case, overall, the meta-governance in relation to the IVQs has not been effective both in terms of reducing the capacity of the industry and in terms of sustaining collective action by the NFA as originally designed. The IVQs regime has thus failed to meet the requirements of input legitimacy of meta-governance functions.

In exploring the dynamics of the sandfish crisis, Chap. 4 showed that the relational capacity of the state is important in supporting FAs. In contrast with the Akita and Vietnam cases, the state of Norway responded to the cod crisis largely via hierarchical enforcement and state authority, particularly suddenly closing cod fishing and introducing IVQs. In this policy formulation the state took the lead in discussions and also made the final decision. Different from the other cases, the state involved other actors who represented different interests compared with those of the NFA. The creation of such a multi-actor network indicates a weakened working relationship with the FA. In this network, the NFA plays the role of an advisor. Therefore the network is the most state centric among the three cases selected.

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CHAPTER 7

Conclusion

This study has provided critiques of Ostrom's approach and the work of co-management scholars. In fisheries management, Ostrom's eight institutional conditions have been widely adopted by fisheries scholars in searching for factors that enable co-management to be sustainably successful. However, as argued here, the co-management literature is largely society-centric and has not to date focused on the role of the state in working with fisheries associations. The approach goes no further than the notion of polycentricity. The co-management approach considers the state to be equal with other actors in the governance network and so hinders our understanding of the substantial role that the state can play in working with fisheries communities in managing fisheries resources. To make this concept more realistic and applicable in different contexts, co-management research must move beyond notions that co-management arrangements are merely polycentric. As the high uncertainty of fish stocks often challenge effective co-management arrangements, the state is often required to exercise its meta-governance functions to mitigate the associated risks from such factors in the industry. Overall, the findings from this study indicate that in fisheries co-management there are dynamic relationships and mutual dependencies between the state and fishing communities.

In challenging the society-centred account of Ostrom's eight institutional conditions and co-management scholars, the study has argued that the state plays a central role in fisheries governance arrangements and, with a variety of resources, can often support collective action by fishers. The

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study has adopted a state-centric concept of meta-governance to design a research framework for analysing three case studies in fisheries co-management in Japan, Vietnam and Norway. The framework focused on the resourcing function of meta-governance in relation to Ostrom's (1990) eight institutional conditions. The relationship between the industry and the state was shown to be unequal in terms of authority. The state was not simply an actor in a 'polycentric' network, but, importantly, created rules, an institutional foundation, for fisheries governance. Over the three cases, the decision-making power lay with the state administration. The co-management arrangement is thus asymmetric. The state often used, in addition to its fiscal resources, its unique authority to formulate the rules of fisheries co-management, which the fisheries associations had to accept. In addition, the state engaged new actors in the fisheries governance network, thus confirming the state-centric aspect of the co-management network.

This state-centric feature was also evident, for example, in the process of Individual Vessel Quota (IVQ) policy formulation and the case of Sami fishing rights. The research reveals that the decision-making power lies with the state administration, while the Norwegian Fishermen's Association (NFA) mainly serves as an advisor. The state is the most powerful actor not only because of its fiscal resources but because it can use its authority to bring new actor(s) into the co-management network in favour of its preferences. As the case of Tvedestrand Marine Protected areas shows, this co-management arrangement took place under the Ministry of Fisheries and Coastal Affairs of Norway and the state was the most influential actor, with the authority to make decisions relating to fisheries management.

Akita fisheries cooperative associations (FCA) could not work out the causes of fish stock variation. They had to find this source of information from an external actor. The Fishery Research Institute of Akita was able to provide this knowledge, but they did not know that the fishing community needed that kind of information. Only the local government was in a position to engage the Akita Research Institute to do this job, and their research outputs were shared with local fishermen to favour governmental policy intent. Interestingly, even when the state is relatively weak and lacks resources, as revealed in the case of Vinh Giang, it remains the most powerful actor with its unique power to correct any wrongdoings by either the IMOLA Project or the fisheries associations.

Ostrom's approach sheds new light on the institutional conditions for local participation in managing common-pool resources—that is, on the formal and informal rules governing human behaviour and on the

mechanisms for creating and changing those roles. Her focus is on rules and property rights for communities to manage common-pool resources by themselves. In contrast, this study indicates areas that require state intervention for cooperative behaviour to take place successfully. We have examined meta-governance in relation to Ostrom's (1990) eight institutional conditions to highlight the important role of the state in facilitating collective action by fishers. The study also emphasizes that such collective action is often taken under the umbrella of overarching state-centric governance structures. The resources explored in this study include the capacity to promulgate laws, share in-depth knowledge, offer fiscal resources, issue authoritative policy formulation, largely in support of fisheries associations. As stressed in Chaps. 4 and 5, the state can often use the law to encourage collective action by fishers via their associations. The state is crucial in creating institutional foundations for collective action, and can often foster collective action by fishermen. In Vinh Giang and in Norway the state supported the formation of fisheries associations. In Vinh Giang, local government helped to bring fishing communities together and build their capacity for leadership as well as providing training. The study also suggests that fishing communities via their associations require substantial support from the state in terms of resources, particularly in-depth knowledge and money. It is noteworthy that even when states cannot sufficiently meet all the needs of fisheries associations, it can sometimes procure resources from other sources, such as an international agency, as for example in the case of the Vinh Giang Fisheries Association (FA). Finally, the study acknowledges certain constraints upon the state in carrying out its meta-governance functions, especially when state capacity is weak.

A focus of the three case studies has been Ostrom's first institutional condition on clearly defined boundaries, a condition which the book challenges. In the case of Vinh Giang FA, local fishers themselves cannot afford to invest in setting up mark poles to define boundaries among its members and with other fishing communities. The study raised the question as to whether fishers can manage fisheries resources themselves without adequate knowledge of fish stocks. Defining the boundary in this case included the allocation of water areas managed by the fisheries association, which requires both technical know-how on TURFs and patrolling. As revealed in this case, both local governments and an international organization contributed to boundary identification. Over the three cases, the high uncertainty regarding fish stocks was a common feature. Moreover, states in their different settings have been the only actors capable of

supporting fishing communities in coping with fish stock crises. A further important contribution is the provision of in-depth knowledge. Over the three cases, knowledge required for making decisions enabled fishing communities to cope with fish stock crises. Such knowledge came primarily from the state or the state's partners. Therefore, the state can help to provide up-to-date knowledge on fisheries stock to enable fishing communities to carry out their assigned management tasks.

Uncertainty around fisheries resources led the fishing communities to clearly define the boundaries of fish stocks. This characteristic of fish stock stays beyond Ostrom's eight conditions. This challenge is often critical in developing countries, which are often characterized by limited resources. So in-depth knowledge and information are especially important here. The sharp decline of sandfish stock in Akita between the 1970s and the 1990s is a typical example. In the case of Vinh Giang, serious pollution of the water was the key challenge to the survival of the fish stocks. In the case of Norway, the cod crisis presented a big challenge to fishers. As argued in Chap. 3, this characteristic of the resource was also associated with internal conflicts among fishers in the association as, in the case of Akita, they blamed one another for the decline. This kind of internal conflict did not arise from economic issues, but stemmed from limited understanding and knowledge. The local government's provision of knowledge and information was therefore an effective solution for fishers to help solve this type of conflict. Such involvement on the part of the state challenged the society-centered account of fisheries management. These cases indicate that state had to perform its meta-governance role to ensure the well-being of fish stocks. In terms of fiscal resources, the three cases suggest that fisheries management requires significant fiscal resources when financial capacities of local fishers are often limited, especially during fish stock crises. However, this meta-governance role depended largely on its available resources.

In fisheries management, cooperation between the state and fisheries associations as groups of users is sometimes possible and mutually beneficial. A strong state can enable successful collective action in the associations and the associations can make use of numerous resources made available by the state. When involved in such cooperation, fishers and their associations can benefit from being granted exclusive fishing rights, from in-depth knowledge transferred from governments, and possibly from financial support by governments. Moreover, fishers join fisheries associations on a voluntary basis and the interests of fishers in the associations are

often shaped by benefits, which the state can offer. The state, with its resources and capacities, can support the associations in attracting and maintaining membership over a long period. In addition to its duties to its membership, fisheries associations perform their functions in a network of state and non-state actors. Here, the state can play a role in facilitating such interaction. Where associations are strong they can assist governments to implement policy.

Regarding conflict resolution, in a community in which fishers know each other well, social norms may prevent violation of the rules set by the community because of prestige, reputation and close relations. However, actions by user groups outside the immediate community may undermine or destroy the management activities undertaken by the community. As revealed in Chap. 5, in Vinh Giang, fisheries communities were threatened by destructive fishing techniques such as explosives and electrical fishing tools used by outsiders. Outside violators were aggressive towards persons who detected or reported their case to local authorities. The local governments were supportive and responsive to fishers in enforcing their rules in their defined territories. In the case of Akita, local governments worked together with local fishers to enforce rules during the moratorium. Rules enforcement in Norway was conducted by state agencies.

Regarding institutional capacities, Japan is an example of the state's ability to encourage fishers to work via fisheries associations. This was also seen in the case of Vinh Giang, Vietnam. However, there was a lack of supportive legal framework in Norway, and accordingly, collective action by fishers depended on governance strategies by the state. The influence of changes in governance strategies can be seen from the termination of the General Agreement, which granted the NFA a privileged position over other actors from the industry and the exclusive rights of participation, and the introduction of the IVQ system in Norway. Moreover, such changes exposed the Norwegian Fishers' Association (NFA) to increased internal conflicts that resulted in the separation of the coastal group into the NFCA. The introduction of the IVQ system did not encourage collective action via the association, as it worked directly with individual operators. This approach reduced the attractiveness of the association among fishers. Chapter 5, which investigated issues relating to the resources required for co-management, revealed that substantial and continuous support from external actors in terms of resources is crucial for fisheries associations. Where such external support is often short term, fisheries associations are likely to be challenged. Therefore, insights explored by

the chapter contribute to our understanding why in developing countries such as Vietnam collective action by fishers via their associations remains challenging. In contrast, stronger state capacities in Japan supported collective action by fisheries associations. Fishers and their associations benefited from being granted exclusive fishing rights, from in-depth knowledge transferred from governments, and substantial financial support by governments. The state in this case not only assisted but also created a supportive environment for fisheries cooperative associations (FCAs) to perform by producing a fishing rights regime, policy dialogue forums, key technical infrastructures, in-depth knowledge and fiscal resources. As emphasized in Chap. 6, the state continued to exercise hierarchical authority in fisheries management. The Norwegian government in particular assumed responsibility for negotiating total allowable catches (TCAs) with other nations for the industry and rules enforcement to provide an important input for the industry to carry out its assigned mandate. In practising its meta-governance role, the state had the capacity to use different policy tools for different goals, from facilitating and initiating the establishment of the association, creating legal frameworks, providing subsidies and issuing new policies. The TACs system highlights the meta-governance role of the state in working with other nations in defining fisheries territories. Such an authority is not possessed by any non-state actors. Therefore, the state can largely support Ostrom's eight institutional conditions.

These three cases together reveal that the state is important in supporting fisheries associations. In Akita the state maintains a close working relationship with the FCAs. Local government agencies there explain research outputs on the current status of the fish stock and possible reasons for its depletion, as well as the expected effects of fisheries closures. By working closely with local fishers, state agents got to know the interests of local fishers and helped them understand complex matters. They were able to customize and effect knowledge-transfer to local fishers. In contrast, in Vinh Giang, with limited staff, the sub-department found it impossible to respond to a high demand for technical support by fisheries associations (FAs). Accordingly, the role of the sub-department is limited to policy formulation. Chapter 6 suggests the formulation of the NFCA is a consequence of poor relations between the state and the NFA. In the context of relatively strong state capacities in Japan, this relational capacity facilitated successful collective action by fisheries associations.

This study raises many more questions than it can answer, a number of which have been mentioned in the various chapters. The focus of this

study is on the first condition by Ostrom. Accordingly, it is posited that adopting meta-governance to investigate the role of the state in supporting fishing communities in relation to other conditions by Ostrom (1990) such as conflict resolutions can be a future area for research. The current research has contributed to answering important questions about whether states have the capacity to operate coherently and forge effective governance relationships with fisheries associations and other actors in managing fisheries. It has found that states with weak capacities, such as Vietnam, often find alternatives for meta-governance. However, the state's capacity for formulating and implementing policies varies between countries. As this study is limited in scope, the collection and comparison of additional case studies from a wider range of contexts is beyond our reach. So too is the construction of longitudinal studies that can track the evolution of collective action by fishers over time in relation to external support by the state. Accordingly, further development of analytical frameworks on the relation between state capacities and successful fisheries management should be encouraged. Effective co-management requires thorough consideration of a holistic setting in which fishers as an actor have to interact with other actors to manage the mobile and exhaustible sources of fish and in which the state takes overall responsibility for the well-being of the whole system. The meta-governance function in this study is about resourcing. Oher functions of meta-governance such as steering, effectiveness, democracy and legitimacy are potential areas for analysis in relation to Ostrom's eight institutional conditions, not only in fisheries but also in other common-pool resources such as forestry.

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Appendices

Appendix 1: Fisheries Law of Japan, 1949

Chapter II: Fishery Rights and Piscaries

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Article 7 In this Act, "a piscary" refers to the right of operating the whole or a part of the fishery covered by another person's common fishery right or by the demarcated fishery right for a bamboo-installed aquaculture business, algae aquaculture business, suspension-type aquaculture business (which refers to a business of suspending aquatic animals, operated with ropes, steel wires, or the like kept hanging; excluding the pearl aquaculture business), fish pen aquaculture business (which refers to a business of culturing aquatic animals using net creels or other creels), or shellfish aquaculture business as a class 3 demarcated fishery (hereinafter referred to as "the specific demarcated fishery right"), in the fishing ground pertaining to the fishery right, based on the act of establishment.
(Right of Association Partner to Operate a Fishery)

Article 8

1. A member (limited to a fishery manager or a fishery employee) of a Fisheries Cooperative Association, who falls under the qualification provided in the Fishery Right Exercise Rule or the Piscary Exercise Rule respectively established for each provided demarcated fishery right or common fishery right or piscary held by the Fishery Cooperative Association or by a Federation of Fishery Cooperative Associations, to

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which the Fishery Cooperative Association belongs as an member, has the right of operating a fishery within the scope of said provided demarcated fishery right or common fishery right or piscary.

2. The Fishery Right Exercise Rule or the Piscary Exercise Rule of the preceding paragraph (hereinafter simply referred to as "the Fishery Right Exercise Rule" or "the Piscary Exercise Rule") shall provide the matters concerning the qualification of the persons who have the right of operating the fishery pursuant to the same paragraph, and also the region where and the period when the fishery covered by said fishery right or piscary may be operated, methods of the fishery and other matters the persons having the right of operating said fishery shall observe when they operate said fishery.
3. When a Fisheries Cooperative Association or a Federation of Fisheries Cooperative Associations is going to establish the Fishery Right Exercise Rule for the provided specific demarcated fishery right or the common fishery right covering the class 1 common fishery held by the association or the federation, the association or the federation shall obtain the consents in writing of not less than two thirds of the partner of the association or the federation (the partner of the Fisheries Cooperative Associations which are the partner of the Federation of Fisheries Cooperative Associations, in the case of the federation; the same shall apply hereinafter), who operate the fishery covered by said fishery right when the association or the federation is granted the license of the fishery pertaining to said fishery right (or who operate a shore fishery (which refers to the fishery excluding the fishery operated using a powered fishing boat with a total tonnage of 20 tons or more and the fishery in inland waters; the same shall apply hereinafter) in the case where the region of the fishing ground pertaining to said fishery right is waters other than inland waters (excluding the lakes and marshes designated by the Agriculture, Forestry and Fisheries Minister pursuant to the provision of paragraph (1), Article 84; the same shall apply hereinafter except paragraph (1), Article 21) with respect to the provided demarcated fishery right and the common fishery right covering the class 1 common fishery established for the persons qualified pursuant to the provision of paragraph (6), Article 14; or who operate a fishery in the inland waters other than rivers in the case where said region is said inland waters; or who gather, catch or culture aquatic animals and plants in a river in the case where said region is said river), and who have addresses in the region of the local district provided in

Article 11 pertaining to said fishery right (the district concerned provided in the same Article for the common fishery right), before any resolution is made in the general meeting provided in the Fisheries Industry Cooperative Association Act (Act No. 242 of 1948) (including a sectional meeting and a representatives' meeting of the general meeting).

4. In the case of the preceding paragraph, if it is provided in the Article of the Association or the Federation concerned that voting rights may be exercised by an electromagnetic means (which refers to the electromagnetic means provided in paragraph (4), Article 11-2 of the Fisheries Industry Cooperative Association Act) pursuant to the provision of paragraph (3), Article 21 of the same Act (including the case where this paragraph is applied mutatis mutandis in paragraph (3), Article 89 of the same Act), the consents concerning said Fishery Right Exercise Rule may be obtained by said electromagnetic means in lieu of said consents in writing. In this case, said Fishery Cooperative Association or Federation of Fishery Cooperative Associations shall be deemed to have obtained said consents in writing.
5. The consents concerning said Fishery Right Exercise Rule obtained by the electromagnetic means of the first sentence of the preceding paragraph (excluding the method prescribed in the Ordinance of the Ministry of Agriculture, Forestry and Fisheries of paragraph (5), Article 11-2 of the Fisheries Industry Cooperation Association Act) shall be deemed to have arrived at said Fisheries Cooperative Association or Federation of Fisheries Cooperative Associations when the consents have been recorded in a file of the computer used by the Fisheries Cooperative Association or Federation of Fisheries Cooperative Associations.
6. The Fishery Right Exercise Rule or the Piscary Exercise Rule shall not be valid unless the regulation is approved by the Governor concerned.
7. The provisions of paragraph (3) through paragraph (5) shall be applied mutatis mutandis to the change or abolition of the Fishery Right Exercise Rule pertaining to the specific demarcated fishery right or the common fishery right covering the class 1 common fishery, and the provision of the preceding paragraph shall be applied mutatis mutandis to the change or abolition of the Fishery Right Exercise Rule or the Piscary Exercise Rule. In this case, "who operate the fishery covered by said fishery right when the association or the federation is granted the license of the fishery pertaining to said fishery right" shall be deemed

to be replaced with "who operate the fishery covered said fishery right." (Prohibition of Fixed Fishery, not Based on a Fishery Right)

(ii) A person who has been judged to be likely to allow the person judged to be unqualified pursuant to the provision of the preceding item to substantially govern the management of the fishery pertaining to the application, irrespective of the pretext, by not less than two thirds of all the commission members as a result of voting in the Sea-area Fisheries Adjustment Commission concerned.

2. With regard to the license of the demarcated fishery covered by a specific demarcated fishery right, the Fisheries Cooperative Association covering the whole or a part of the local district prescribed in Article 11 (hereinafter simply referred to as "the local district") in the district of the association or the Federation of Fisheries Cooperative Associations, to which the Fisheries Cooperative Association belongs as a member, who does not operate the fishery covered by said specific demarcated fishery right is qualified only if the association or the federation conforms to the following, notwithstanding the provision of the preceding paragraph; provided that any Fisheries Cooperative Association, in which the partner qualified pursuant to the provision of paragraph 4, Article 18 of the Fisheries Industry Cooperative Association Act are limited to those operating the fishery of a specific type, and any Federation of Fisheries Cooperative Associations, to which the Fisheries Cooperative Association belongs as a member, shall not be qualified.

(i) The number of households of the partner of the association or the federation, who have addresses in the local district and operate said fishery is not less than two thirds of the number of households of the persons who have addresses in the local district and operate said fishery.
(ii) In the case where two or more associations or federations jointly file an application, the total number of households of the partner of the associations or the federations, who have addresses in the local district and operate said fishery is not less than two thirds of the number of households of the persons who have addresses in the local district and operate said fishery.

3. In the case where a Fisheries Cooperative Association, the partner of which are the persons who have addresses in the local district of the preceding paragraph and operate said fishery, or the corresponding Federation of Fisheries Cooperative Associations proposes another Fisheries Cooperative Association or Federation of Fisheries Cooperative Associations qualified pursuant to the provision of the same paragraph, to jointly file an application for the license of the fishery provided in the same paragraph, the qualified Fisheries Cooperative Association or Federation of Fisheries Cooperative Associations may not reject the proposal without any justifiable reason.
4. In the case where a Fisheries Cooperative Association or the corresponding Federation of Fisheries Cooperative Associations qualified pursuant to the provision of paragraph (2) has been granted the license of the fishery provided in the same paragraph, another Fisheries Cooperative Association, the partner of which are the persons who had addresses in the local district of the same paragraph and operated said fishery when said license was granted or the corresponding Federation of Cooperative Associations may request the licensed Fisheries Cooperative Association or the corresponding Federation of Fisheries Cooperative Associations to co-own said fishery right, if approved by the Governor concerned. In this case, the provision of paragraph (1), Article 26 shall not apply.
5. When an application for the approval set forth in the preceding paragraph has been filed, the Governor concerned shall hear the opinions of the Sea-area Fisheries Adjustment Commission concerned.
6. In the case where the whole of the area of the fishing ground for the demarcated fishery covered by a specific demarcated fishery right publicly notified pursuant to the provision of paragraph (5), Article 11 is waters where no specific demarcated fishery right for said demarcated fishery existed for one year before the date of said public notice (the date of the public notice of change, in the case where said public notice of change was made pursuant to the provision of the same paragraph for the area of the fishing ground pertaining to said demarcated fishery), the Fisheries Cooperative Association or the corresponding Federation of Fisheries Cooperative Associations which does not operate the fishery covered by said specific demarcated fishery right is qualified for the license of the demarcated fishery covered by said specific demarcated fishery right, only if the association or the

federation falls under the following, notwithstanding the provisions of paragraph (1) and paragraph (2).

(i) The number of households of the partner of the association or the federation, who have addresses in the local district and operate a shore fishery for 90 days or more per year (or who operate a fishery for 30 days or more per year in inland waters other than rivers in the case of a license of said fishery in said inland waters, or who gather, catch or culture aquatic animals and plants for 30 days or more per year in a river in the case of a license of said fishery in the river; hereinafter the same shall apply) is not less than two thirds of the number of households of the persons who have addresses in the local district and operate the shore fishery for 90 days or more per year.

(ii) In the case where two or more associations or federations jointly file an application, the total number of households of the partner of the associations or federations, who have addresses in the local district and operate a shore fishery for 90 days or more per year is not less than two thirds of the number of households of the persons who have addresses in the local district and operate the shore fishery for 90 days or more per year.

7. The provisions of the proviso of paragraph (2) and paragraph (3) through paragraph (5) shall apply mutatis mutandis to the license of the demarcated fishery of the preceding paragraph. In this case, "who … and operate said fishery" in paragraph (3) shall be deemed to be replaced with "who … and operate a shore fishery for 90 days or more per year," and "who … and operated said fishery" in paragraph (4), with "who … and operated said fishery for 90 days or more per year."
8. A person qualified for the license of a common fishery shall be a Fisheries Cooperative Association which has the whole or a part of the district concerned provided in Article 11 (hereinafter simply referred to as "the district concerned") included in its district or the Federation of Fisheries Cooperative Associations, to which the Fisheries Cooperative Association belongs as a member (excluding the Fisheries Cooperative Association or the corresponding Federation of Fisheries Cooperative Associations provided in the proviso of paragraph (2)), and falls under the following.

(i) The number of households of the partner who have addresses in the district concerned and operate a shore fishery for 90 days or more per year is not less than two thirds of the number of households of the persons who have addresses in the district concerned and operate the shore fishery for 90 days or more per year.
(ii) In the case where two or more associations or federations jointly file an application, the total number of households of the partner of the associations or federations, who have addresses in the district concerned and operate a shore fishery for 90 days or more per year is not less than two thirds of the number of households of the persons who have addresses in the district concerned and operate the shore fishery for 90 days or more per year.

9. In the case where the number of households provided in each item of paragraph (2), each item of paragraph (6) or in each item of the preceding paragraph is calculated, if the person who operates said fishery is a juridical person, the number of households of the members, partners or shareholders of said juridical person (if the juridical person is a joint stock company, the company shall not be an open corporation (an open corporation provided in item (v), Article 2 of the Companies Act (Act No. 86 of 2005); the same shall apply); the same shall apply in this paragraph), or the number of households of the members, partners or shareholders of the juridical persons as members, partners or shareholders of said juridical person, who are fishery employees of said fishery, shall be counted.
10. The provisions from paragraph (3) through paragraph (5) shall apply mutatis mutandis to a common fishery. In this case, "the local district" in paragraph (3) and paragraph (4) shall be deemed to be replaced with "the district concerned"; "who … and operate said fishery" in paragraph (3), with "who … and operate a shore fishery for 90 days or more per year"; and "who … and operated said fishery" in paragraph (4), with "who … and operated said fishery for 90 days or more per year."
11. In the case where a Fisheries Cooperative Association or a Federation of Fisheries Cooperative Associations acquires a common fishery right for the class 1 common fishery or the class 5 common fishery, the Sea-area Fisheries Adjustment Commission concerned shall give necessary instructions pursuant to the provision of paragraph 1, Article 67, for appropriate exercise of said common fishery right in the relationship

between the association or the federation and the fishermen (fishery managers or fishery employees as individuals; hereinafter the same shall apply) who have addresses in the district concerned and are not the partner.

Article 21

1. The duration of a fishery right shall be 10 years from the date of the license for the demarcated fishery right for performing the pearl aquaculture business, the demarcated fishery right for performing the aquatic animal aquaculture business in the waters other than the inland waters pursuant to the provision of item (v), paragraph (5), Article 6 (excluding the provided demarcated fishery right and the demarcated fishery right for performing the pearl aquaculture business), or the common fishery right, and 5 years from the date of the license for the other fishery rights.
2. The Governor concerned may decide a period shorter than the period set forth in the preceding paragraph to such a limit necessary for fisheries adjustment. (Division or Change of Fishery Right)

Article 22

1. When it is intended to divide or change a fishery right, an application shall be filed with the Governor concerned, to be granted a license.
2. The Governor concerned shall not grant the license set forth in the preceding paragraph in the case where the Governor finds that the fisheries adjustment and other public interest will be impaired.
3. In the case of paragraph (1), the provisions of Article 12 (Consultation with the Sea-area Fisheries Adjustment Commission) and Article 13 (Cases Where no License Is Granted) shall apply mutatis mutandis. (Nature of Fishery Right)

Article 23

1. A fishery right shall be deemed to be a property, and the provisions concerning land shall apply mutatis mutandis.
2. The provision of Chapter IX (Pledge), Part II of the Civil Code (Act No. 89 of 1896) shall not apply to either the fixed gear fishery right or the demarcated fishery right (excluding the specific demarcated fishery

right owned by a Fisheries Cooperative Association or a Federation of Fisheries Cooperative Associations; the same shall apply in the following Article and Article 26 and 27), and the provisions of Chapter VIII through Chapter X (Lien, Pledge and Mortgage) shall not apply to either the specific demarcated fishery right owned by a Fisheries Cooperative Association or a Federation of Fisheries Cooperative Associations or the common fishery right.

Article 24

1. In the case where a mortgage is established on a fixed gear fishery right or a demarcated fishery right, the structures fixed on the fishing ground shall be deemed to be a property integrally added to the fishery right with respect to the mutatis mutandis application of the provision of Article 370 (Scope to Which the Validity of Mortgage Extends) of the Civil Code. The same shall apply also in the case where a lien covers a fixed gear fishery right or a demarcated fishery right.
2. The establishment of a mortgage covering a fixed gear fishery right or a demarcated fishery right shall not be valid unless it is approved by the Governor concerned.
3. The Governor concerned shall not make the approval pursuant to the preceding paragraph unless the Governor finds that the establishment of a mortgage covering a fixed gear fishery right or a demarcated fishery right is inevitable for the financing necessary for the management of said fishery.
4. When the Governor concerned is going to make the approval pursuant to the provision of paragraph (2), the Governor shall hear the opinions of the Sea area Fisheries Adjustment Commission concerned. (Case Where a Lien or Mortgage Extinguishes due to Transfer of Specific Demarcated Fishery Right)

Article 25

1. In the case where a lien or a mortgage covers a specific demarcated fishery right, when the fishery right holder notified pursuant to the provision of paragraph (2), Article 27 transfers the specific demarcated fishery right to a Fisheries Cooperative Association or a Federation of Fisheries Cooperative Associations, the fishery right holder shall obtain

the consent of the lien holder or the mortgage holder (limited to a registered person; the same shall apply hereinafter).
2. The lien holder or the mortgage holder may not reject the consent set forth in the preceding paragraph without any justifiable reason.
3. When the transfer of paragraph (1) has been performed, the line or the mortgage extinguishes. (Restriction of Transfer of Fishery Right)

Article 26

1. A fishery right may not be the purpose of transfer unless it is necessitated by inheritance or merger of juridical persons or demerger or a juridical person; provided that the same shall not apply to a fixed gear fishery right or a demarcated fishery right when the Governor concerned approves it in the case where it is necessitated by nonpayment, or in the case where a lien holder or a mortgage holder exercises his/her right, or in the case where a person notified pursuant to the provision of paragraph (2), Article 27 transfers.
2. The Governor concerned shall not make the approval pursuant to the preceding paragraph unless the transfer is made to a person qualified pursuant to the provision of paragraph (1), paragraph (2) or paragraph (6), Article 14.
3. When the Governor concerned is going to make the approval pursuant to the provision of the preceding paragraph, he/she shall hear the opinions of the Seaarea Fisheries Adjustment Commission concerned. (Fixed Gear Fishery Right or Demarcated Fishery Right Acquired by Inheritance or Merger of Juridical Persons or Demerger of a Juridical Person)

Article 27

1. A person who has acquired a fixed gear fishery right or a demarcated fishery right by inheritance or merger of juridical persons or demerger of a juridical person shall notify the Governor concerned to that effect within two months from the data of the acquisition.
2. When the Governor concerned listens to the opinions of the Sea-area Fisheries Adjustment Commission concerned and finds that the person of the preceding paragraph lacks the qualification pursuant to the provision of paragraph (1), Article 14, he/she shall notify the person to

the effect that unless the fishery right is transferred within a certain period of time, the fishery right shall be rescinded. (Rights and Obligations concerning the Use of Waters)

Article 28 The rights and obligations concerning the use of waters owned by a fishery right holder (including the rights and obligations owned by said fishery right holder based on the permissions, approvals and other dispositions of the administrative agency concerning said fishery) shall follow the disposition of the fishery right. (Prohibition of Loan)

Article 29 A fishery right may not be the purpose of loan. (Consent of Registered Right Holder)

Article 30

1. A fishery right may not be divided, changed or waved without the consent of the right holder registered pursuant to the provision of Article 50.
2. The provisions of paragraph (2) through paragraph (4) of Article 13 (Case Where No Consent Is Obtained.) shall apply mutatis mutandis to the preceding paragraph. (Consents of Partner)

Article 31 The provisions of paragraph (3) through paragraph (5) of Article 8 shall apply mutatis mutandis to the case where a Fisheries Cooperative Association or a Federation of Fisheries Cooperative Associations is going to divide, change or wave a specific demarcated fishery right or a common fishery right for the class 1 common fishery owned by the association or the federation. In this case, "who operate the fishery covered by said fishery right when the association or the federation is granted the license of the fishery pertaining to said fishery right" shall be deemed to be replaced with "who operate the fishery covered by said fishery right." (Co-ownership of Fishery Right)

Article 32

1. Each co-owner of a fishery right may not dispose of his/her share unless the consents of not less than two thirds of the other co-owners are obtained.
2. The provisions of paragraph (2) through paragraph (4) of Article 13 (Case Where No Consent Is Obtained.) shall apply mutatis mutandis to the preceding paragraph.

Article 33 In the case where each co-owner of a fishery right is going to obtain the consents of the other co-owners for changing the co-owned fishery right, the provisions of paragraph (2) through paragraph (4) of Article 13 (Case Where No Consent Is Obtained.) shall apply mutatis mutandis. (Restrictions or Conditions of Fishery Right)

Article 34

1. The Governor concerned may add restrictions or conditions to the fishery right when granting a license, if he/she finds it necessary for fisheries adjustment and other public interest.
2. When the restrictions or conditions set forth in the preceding paragraph are going to be added, the Governor concerned shall hear the opinions of the Seaarea Fisheries Adjustment Commission concerned.
3. With respect to the addition of restrictions or conditions pursuant to the provision of paragraph (1), the provision of paragraph (6), Article 11 shall apply mutatis mutandis.
4. If the Sea-area Fisheries Adjustment Commission concerned finds it necessary for fisheries adjustment and other public interest after grant of a license and files an application, the Governor concerned may add restrictions or conditions to the fishery right.
5. When the Sea-area Fisheries Adjustment Commission concerned is going to file the application of the preceding paragraph, the commission shall notify said fishery right holder of the reason for adding restrictions or conditions in writing, and hear his/her opinions publicly in advance.
6. When the opinions are heard pursuant to the preceding paragraph, said fishery right holder or his/her agent may make explanation and submit evidences.
7. During the period from the time when the notice pursuant to the provision of paragraph (5) is made to the time when the hearing of the opinions is completed, said fishery right holder or his/her agent may request the Sea-area Fisheries Adjustment Commission concerned, to allow him/her to inspect the written statement pertaining to the results of the investigation made on said issue and other data proofing the fact causing said application. In this case, the Sea-area Fisheries Adjustment Commission concerned may not reject the inspection unless there is any possibility of impairing the interest of a third party or without any other justifiable grounds.

8. The matters necessary for the provisions of the preceding three paragraphs and for the hearing of opinions of paragraph (5) performed by the Sea-area Fisheries Adjustment Commission concerned shall be provided by a cabinet order. (Notification of Absence from Work)

Article 35 When a fishery right holder is going to be absent from work for more than one fishery season, he/she shall decide the absence period and notify the Governor concerned of it in advance. (Permission of Fishery during Absence from Work)

Article 36

1. During the period of absence from work of the previous Article, a person qualified pursuant to the provision of paragraph (1), Article 14 may operate the fishery covered by said fishery right, if permissioned by the Governor concerned, notwithstanding the provision of Article 9.
2. If an application for the permission set forth in the preceding paragraph has been filed, the Governor concerned shall hear the opinions of the Sea-area Fisheries Adjustment Commission concerned.
3. With respect to the permission of paragraph (1), the provisions of paragraph (5) and paragraph (6), Article 13 (Hearing of Opinions), paragraph (2), Article 22 (Case Where no License is Granted), Article 34 (Restrictions or Conditions of Fishery Right), the preceding Article (Notification of Absence from Work), the next Article, paragraph (1), paragraph (2) and paragraph (5) of Article 38.

Article 39 (Rescission of Fishery Right) and Article 40 (Rescission of the License Granted by Mistake) shall apply mutatis mutandis. In this case, "Article 14" in paragraph (1), Article 38 shall be deemed to be replaced with "paragraph (1), Article 14." (4) The provisions of the preceding three paragraphs shall apply mutatis mutandis to the case where in the period during which the exercise of a fishery right is suspended owing to the disposition pursuant to the provision of paragraph (2), Article 39, another person is going to operate said fishery. (Rescission of Fishery Right due to Absence from Work)

Article 37

1. When the absence from work is made for one year from the date when a license was granted or made for two years successively, the Governor concerned may rescind the fishery right.

2. The period during which the exercise of a fishery right is suspended based on the disposition pursuant to the provision of paragraph (1), Article 39, the order pursuant to the provision of paragraph (1) or paragraph (2), Article 65, the instruction pursuant to the provision of paragraph (1), Article 67, the order pursuant to the provision of paragraph (11) of the same Article, the instruction pursuant to the provision of paragraph (1), Article 68 or the order pursuant to the provision of paragraph (11), Article 67 applied mutatis mutandis by replacement in paragraph (4) of the same Article shall not be included in the period of the preceding paragraph, except for the case where the suspension is due to the cause imputable to the fishery right holder.
3. When the Governor concerned is going to rescind a fishery right pursuant to the provision of paragraph (1), he/she shall hear the opinions of the Sea-area Fisheries Adjustment Commission concerned.
4. In the case of the preceding paragraph, the provisions of paragraph (5) through paragraph (8) of Article 34 (Hearing of Opinions) shall apply mutatis mutandis. In this case, "the Sea-area Fisheries Adjustment Commission concerned" in paragraph (7) of the same Article shall be deemed to be replaced with "the Governor concerned." (Rescission of Fishery Right due to Loss of Qualification, etc.)

Article 38

1. If a fishery right holder granted a license of a fishery loses the qualification pursuant to the provision of Article 14, the Governor concerned shall rescind the fishery right.
2. When the Governor concerned is going to rescind the fishery right pursuant to the provision of the preceding paragraph, he/she shall hear the opinions of the Sea-area Fisheries Adjustment Commission concerned.
3. In the case where a person other than a fishery right holder substantially governs the management of the fishery covered by said fishery right, if the Seaarea Fisheries Adjustment Commission concerned finds it obvious that the person will not be granted the license of said fishery pursuant to the provisions of Article 15 through 19 (Priority Order) and files an application proposing that the fishery right should be rescinded, the Governor concerned may rescind the fishery right.
4. With respect to the application of the provision of the preceding paragraph, in the case where a Fisheries Cooperative Association as a fishery right holder operates the fishery covered by said fishery right, with an

contribution from another person, it shall not be construed that the other person substantially governs the management of said fishery based on the fact that the amount of said contribution accounts for a majority of the total amount of contribution.

5. In the case of paragraph (2), the provision of paragraph (4) of the preceding Article (Hearing of Opinions) shall apply mutatis mutandis, and in the case of paragraph (3), the provisions of paragraph (5) through paragraph (8) of Article 34 (Hearing of Opinions) shall apply mutatis mutandis. (Change, Rescission or Suspension of Exercise of Fishery Right for the Necessity of Public Interest)

Article 39

1. The Governor concerned may change, rescind or suspend the exercise of a fishery right, when he/she finds it necessary for fisheries adjustment, the navigation, anchoring or mooring of ships, installation of underwater cables and other public interest.
2. Also when a fishery right holder violates the provisions of the acts and ordinances concerning fisheries, the preceding paragraph shall apply.
3. When the Governor concerned is going to dispose pursuant to the provisions of the preceding two paragraphs, he/she shall hear the opinions of the Sea-area Fisheries Adjustment Commission concerned.
4. In the case of the preceding paragraph, the provision of paragraph (4), Article 37 (Hearing of Opinions) shall apply mutatis mutandis.
5. With respect to the change or rescission or the suspension of exercise of a fishery right pursuant to the provision of paragraph (1) or paragraph (2), the provision of paragraph (6), Article 11 shall apply mutatis mutandis.
6. The prefectural government concerned shall compensate said fishery right holder for the loss caused by the change or the rescission or the suspension of exercise of the fishery right pursuant to the provision of paragraph (1).
7. The loss to be compensated for pursuant to the provision of the preceding paragraph shall be the loss usually caused by the disposition of the same paragraph.
8. The amount of compensation money of paragraph (6) shall be decided by the Governor concerned, after he/she hears the opinions of the Sea-area Fisheries Adjustment Commission concerned.

9. A person who is dissatisfied with the amount of compensation money set forth in the preceding paragraph may demand an increase of amount by means of an appeal made within six months from the date when the notice of the decision is received.
10. In the appeal set forth in the preceding paragraph, the prefectural government concerned shall be the defendant.
11. If there is a lien or a mortgage on the fishery right rescinded pursuant to the provision of paragraph (1), the prefectural government concerned shall deposit the compensation money unless said lien holder or mortgage holder offers to the effect that no deposit is required.
12. The lien holder or mortgage holder of the preceding paragraph may exercise his/her right for the compensation money deposited pursuant to the provision of the same paragraph.
13. If there is a person who is benefited from the change or rescind or suspension of exercise of the fishery right pursuant to the provision of paragraph (1), the prefectural government concerned may let the person bear the whole or a part of the amount of compensation money of paragraph (6).
14. In the case of the preceding paragraph, the provisions of paragraph (9) and paragraph (10), paragraph (2), Article 34 (Consultation with the Sea-area Fisheries Adjustment Commission) and paragraph (4), Article 37 (Hearing of Opinions) shall apply mutatis mutandis. In this case, "an increase of amount" in paragraph (9) shall be deemed to be replaced with "a decrease of amount."
15. The amount to be borne pursuant to the provision of paragraph (13) may be collected as in the disposition for nonpayment of local tax; provided that the order of lien shall come after the national tax and the local tax. (Rescission of the License Granted by Mistake)

Article 40 In the case where a license is granted by mistake, when the Governor concerned is going to rescind it, he/she shall hear the opinions of the Sea-area Fisheries Adjustment Commission concerned. (Protection of Mortgage Holder)

Article 41

1. When the Governor concerned has rescinded a fishery right, he/she shall immediately notify the lien holder or mortgage holder to that effect.

2. The right holder of the preceding paragraph may request an auction of the fishery right within 30 days from the date when the notice is received; provided that the same shall not apply to the rescission pursuant to the provision of paragraph (1), Article 39 or the rescission of the license granted by mistake.
3. The fishery right shall continue to exist within the period set forth in the preceding paragraph or till the date when the procedure of the auction is completed within the scope of the purpose of the auction.
4. The sale amount of the auction shall be allocated for covering the expense of the auction and the payment of the debt to the right holder of paragraph 1, and the balance shall belong to the national treasury.
5. When the purchaser has paid the amount, the rescission of the fishery right shall not be deemed to have come into effect. (Purchase of Structure Fixed to Fishing Ground)

Article 42 The fishery right holder who installed a structure fixed to the fishing ground for increasing the value of the fishery right may request the person who is granted the license of the fishery and benefited from the use of said structure should purchase said structure at the current value, when the fishery right becomes extinct. (Qualification for Acquiring Piscary)

Article 42-2 Any other person than Fisheries Cooperative Associations and Federations of Fisheries Cooperative Associations cannot acquire a piscary. (Nature of Piscary)

Article 43

1. A piscary shall be deemed to be a property.
2. A piscary may be the purpose of transfer or the merger of juridical persons, and may not be the purpose of a right.
3. A piscary may not be transferred without the consent of the fishery right holder. (Documentation of the Contents of Piscary)

Article 44 For a piscary, the following matters shall be clarified in a document.

(i) Area of the other's waters in which a fishery can be performed
(ii) Type of the fishery to be performed in the waters, kinds of catches and fishery season
(iii) Period, if the duration is to be stipulated
(iv) Fishery fee, if the fee is to be stipulated

(v) Fishery method, if the method is to be stipulated
(vi) Fishing boats, gear and number of fishery managers, if they are to be stipulated
(vii) Qualification of the persons engaged in the fishery in the waters, if the qualification is to be stipulated
(viii) Other details of the fishery in the waters (Establishment, Change and Extinction of Piscary by Ruling)

Appendix 2: Fisheries Cooperative Association Law of Japan, 1957

Chapter II: Fishermen's Cooperative Association

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Article 18. Any person qualified for membership in an Association shall be a fisherman who has his residence within the area of the Association and operates or engages in fisheries for over the period in a year from thirty days to ninety days which will be determined by the articles of incorporation. However, in the case of an Association whose principal membership consists of fishermen carrying on gathering, taking or culturing of aquatic animals and plants in rivers, those who have their residence within the jurisdictional area of the Association, and gather, take or culture aquatic animals and plants (excluding sport fishermen) for over the period in a year thirty days to ninety days which will be determined by the articles of incorporation, shall also be qualified for membership.

In the case of any Association whose area is larger than the sphere of a city, town or village, special ward or administrative ward, the fishermen qualified for membership as prescribed in the preceding paragraph may be limited to those operating or engaging in fisheries of specific types which will be determined by the articles of incorporation.

In addition to those prescribed in the preceding t′:′,1O paragraphs, any Association may, in accordance with the articles of incorporation, admit the following persons as qualified for the membership:

1. Aquatic products processors who are not members of a Aquatic Products Processing Cooperative Association, but who have their residence or place of business within the jurisdictional area of the Association;
2. Fishermen's Production Association;

3. Fishermen other than those as prescribed 1Il Par. 1 or the preceding paragraph;
4. Juridical persons (excluding Fishermen's Cooperative Associations and Fishermen's Production Associations) who have their residence or their place of business within the jurisdictional area of the Association and operate fisheries by employing less than 100 regular fisheries employees and with fishing boats whose total tonnage does not exceed 300 tons. (Capitalization)

Article 19. An Association can make its members capitalize in accordance with the articles of incorporation. Each member of the Association as prescribed in the preceding paragraph (hereinafter referred to as "capitalized association" in this chapter) shall possess one or more units of capitalization.

3. The amount of each unit of capitalization shall be equal.
4. The liability of a member shall be limited to the amount of his investment.
5. No member can exercise the right of set-off against the Association with respect to the payment for his investment. (Transfer of Share)

Article 20. No member of a capitalized association can transfer his share without the assent of the Association.

In case any person other than a member desires to acquire a share by transfer, he shall take the same proceeding as in the case of admission.

Any transferee of share shall succeed to the rights and obligations of the transferor in respect of the share.

No share may be held jointly by the members. (Voting Right and Election Right)

Article 21. Each member of any Association shall be entitled to only one voting right and one election right of officers. However, any member prescribed in Art. 18 Par. 3 (hereinafter referred to as "associate member" in this chapter and Chapter N) shall have no voting right and election right.

Any member may, in accordance with the articles of incorporation, exercise his voting right or election right on the matters previously noticed of in accordance with the provision of Art. 41 Par. 3 by a ritten ballot or his proxy.

Any member who exercises his voting righ t or election right in accordance with the provision of the preceding paragraph shall be deemed to be present at the meeting.

No proxy can represent more than two members for such voting purpose. However, in the case of an Association whose principal membership consists of fishermen carrying on gathering, taking or culturing of aquatic animals and plants in rivers and whose members (excluding associate members) exceed 1000 persons, proxy can represent as many as two members.

Any proxy must submit to the Association a document certifying his attorney. (Charge of Assessment)

Article 22. Any Association may, in accordance with the articles of incorporation, charge assessment upon its members.

No member can exercise the right of set-off against the Association with respect to the payment of assessment mentioned in the preceding paragraph. (Monetary Obligation for Contractual Infringement)

Article 23. Any Association may provide in the articles of incorporation for monetary penalties in cases where any member fails to comply with his contractural obligations to the association. (Contract for Exclusive Utilization)

Article 24. Members of an Association can, in accordance with the articles of incorporation, authorize the Association to enter into contracts with members for the exclusive utilization of a part of the facilities of the Association by its member for a specific period of time not exceeding two years.

2. The contract mentioned in the preceding paragraph shall be voluntary, and services carried on by an Association shall not be denied to a member because of his refusal to enter into such contract. (No Restriction on Admission)

Article 25. No eligible applicant for membership shall be refused by any Association without due cause, and shall no heavier condition than those attached to other members'be imposed upon him at such application. (Secession)

Article 26. Any member may secede from the Association at the end of business year by giving a minimum of sixty days' notice.

A longer period than mentioned in the preceding paragraph may be designated in the articles of incorporation.

However, the period of the required notice shall not exceed one year.

Article 27. Any member shall secede from an Association upon the occurrence of any of the following events:

1. Disqualification for membership;
2. Death, or dissolution;
3. Expulsion.

Expulsion may be exercised against members coming under any of the following items by a resolution at a general meeting; however, it shall not be effective against such member until notices of such action have been communicated to him:

1. A member who has failed to utilize the facilities of the Association for an unreasonably long period of time.
2. A member who has continually refused to comply with his obligations such as payment of investment and assessment, etc.
3. A member who has come uuder such cause as prescribed in the articles of incorporation. (Refundrnent of Secede's Share)

Article 28. Any person who has seceded from a capitalized associatson may, in accordance with the articles of incorporation, demand the refundment of the whole or part of his share.

The share mentioned in the preceding paragraph shall be determined in accordance with the assets of the said association as they stand at the end of the business year in which such secession has been effected.

Article 29. The right of demand prescribed in the preceding Article, shall be extinguished by prescription, if it has not been exercised for two years from the time of his secession.

Article 30. Any capitalized association may suspend refundment of the share of a person who has seceded from the Association until he has completely performed his obligation to it. (Reduction of Number of Units of Capitalization)

Article 31. Any member may, in accordance with the articles of incorporation, reduce the number of the units of capitalization held by him.

The provisions of Arts. 28 and 29 shall apply with necessary modifications to the case mentioned in the preceding paragraph.

Appendix 3: The Fisheries Law of Vietnam 2003

Chapter II: Protection and Development of Fisheries Resources

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Article 7: Habitat protection

1. Organizations and individuals shall be responsible for the protection of aquatic habitat.
2. Organizations and individuals conducting fisheries activities and other activities that directly affect the aquatic habitat, migration, spawning of fish species shall comply with provisions as set out by this Law and other legislation dealing with environmental protection, water resources and other relevant legislation.
3. Organizations and individuals while setting up, altering or destroying the constructions related to aquatic habitat, migration, spawning of fisheries resources shall conduct environment impact assessment as set out by legislation dealing with environmental protection.

1. Organizations and individuals while fishing by setting barriers, set nets in rivers, lakes, lagoons shall have to set up a corridor area for the movement of fisheries resources as regulated by local People's Committees.

Article 8: Conservation, protection, rehabilitation and development of fisheries resources

1. The State shall issue policies regarding the conservation and protection of fisheries resources, particularly of the endangered, rare and precious ones and ones that have economic value and scientific importance; shall encourage the scientific research for suitable measures to develop fisheries resources; shall invest in production of fish fry for releasing into their natural habitat and shall create artificial residence places in order to rehabilitate and develop fisheries resources.
2. Organizations and individuals shall be responsible for conservation, protection, rehabilitation and development of fisheries resources as set out by this Law and other relevant legislation.
3. Ministry of Fisheries shall periodically proclaim the followings:

   (a) The list of aquatic species which are named in the Red Book of Vietnam and other species prohibited to be fished; the list of

aquatic species which are prohibited to be fished in time-limited manner and the closed time as well.

(b) Fishing methods, types of fishery and fishing gear which are prohibited to be used or are restricted to be used;

(c) Minimum size and type of aquatic species which are allowed to be fished and fishing seasons;

(d) Closed areas and time-limited closed areas.

4. In case of necessity and with the acceptance of Ministry of Fisheries, the People's Committees of provinces and cities under central level (hereinafter referred to as "provincial People's Committee") shall proclaim the supplement to the regulations made in paragraph 3 of this Article to make it suitable with practical fishing operations in their provinces.

Article 9: Planning and management of inland protected areas and marine parks

1. The inland protected areas and marine parks shall be classified as national parks, sanctuaries and aquatic habitat reserves based on the levels of typical biodiversity in accordance with national and international standards.
2. The Government shall issue the standards to classify and proclaim the protected area; shall plan, establish, manage and decentralize the inland protected areas and marine parks; shall issue the management rules of protected areas which are of national and international significant importance.

   Provincial People's Committee shall issue the management rule of protected areas to be decentralized to the local authorities for management in accordance with guidance provided by Ministry of Fisheries.
3. The State shall invest in conservation of genetic sources and biodiversity of aquatic resources; shall issue policies to encourage the domestic and foreign organizations and individuals to establish and manage the protected areas; shall issue policies to support the job alternatives and the resettlement to ensure the interests of the residents living in protected areas.
4. The organizations and individuals shall be responsible for protection of inland protected areas and marine parks in accordance with management rule of protected areas.

Article 10: Financial sources for rehabilitation of fisheries resources

1. The financial sources for rehabilitation of fisheries resources shall come from:

   (a) State's budget;
   (b) The Fund for Rehabilitation of Fisheries Resources shall be contributed by organizations and individuals engaged in fishing operations, aquaculture, trading, import and export of fish; by organizations and individuals involved in occupations that directly affect the fisheries resources; by donation of domestic and foreign organizations and individuals; and other sources as regulated by legislation.

2. The Government shall make regulations on the management, usage the financial sources for purposes of fisheries resources rehabilitation; shall make specific regulations on the persons, contribution and exempted cases of the Fund.

Chapter III: Fishing Operations

Article 11: Principles in fishing operations

1. The fishing operations conducted at seas, in rivers, lakes, lagoons and other natural waters shall be ensured not lead to the depletion of fisheries resources; shall be done in compliance with regulations relating to fishing seasons, fishing time, fishing grounds, permitted types and sizes, annual allowable catch and shall be complied with provisions stated in this Law and other relevant legislation.
2. The fishing gear and fishing vessels used shall have sizes suitable with permitted fish species.

Article 12: Offshore fishing

1. The State shall issue integrated policies on investment, job training, establishment of communication system, assessment of fisheries resources, prediction of fishing grounds, logistic service, organization of proper production means in order to promote organizations and individuals to develop offshore fishing.

2. Organizations and individuals investing in offshore fishing shall be subject to Law on Domestic Investment Encouragement and shall enjoy other preferential policies of the State.
3. Organizations and individuals involved in offshore fishing shall have communication system and lifevest on board; shall comply with regulations on maritime legislation.
4. The owners of offshore fishing vessels shall be responsible for buying insurance for crewmembers. The State shall have promotion policies for the owners who are voluntary to buy the insurance for offshore fishing vessels.

The insurance conditions, premium, minimum insurance fees of the crewmembers shall be applied in accordance with legislation on insurance trade.

Article 13: Coastal fishing

1. The State shall issue policies regarding the re-organization of production, job alternatives related to coastal fishing operations and job structure among capture fishery, aquaculture, fish processing, farming, plantation and services.
2. Organizations and individuals engaged in coastal fishing when transferring to offshore fishing shall be provided with guidance, training, capital support, allocation of land and marine areas for aquaculture in accordance with State policies.
3. Organizations and individuals engaged in coastal fishing shall have lifevest, weather forecast monitoring equipment; shall comply with legislation on inland water ways and maritime.

Article 14: Survey and research of fisheries resources

1. The State shall invest in survey, research and assessment of fisheries resources and draw the maps on fisheries resources.
2. Ministry of Fisheries shall chair and in coordination with relevant Ministries and sectors and provincial People's Committees to conduct the survey and assessment of fisheries resources in specific sea areas, fishing grounds, rivers and big lakes; shall proclaim fishing grounds and identify annual allowable catch in specific sea areas and fishing grounds.
3. Provincial People's Committee shall have responsibility to conduct the assessment of fisheries resources within local jurisdiction in accordance with guidance of Ministry of Fisheries.

Article 15: Management of fishing grounds

1. Organizations and individuals engaged in fishing operations at seas, in rivers, lakes, lagoons and other natural waters shall comply with the regulations set out by this Law and other relevant legislation.
2. The Government shall have responsibility to demarcate sea areas and fishing routes, shall authorize powers to relevant Ministries and sectors and provinces to ensure the close and integrated coordination between fisheries inspection forces at seas and fishing routes.
3. The provincial People's Committees shall have responsibility to issue rules of fishing grounds in rivers, lakes, lagoons and other natural waters under its jurisdiction in accordance with guidance of Ministry of Fisheries; shall organize and promote the local residents to take part in monitoring, detection and prosecution of any violations committed to fisheries activities in fishing grounds.

Appendix 4: Regulations on the Management of Lagoon Fisheries in Thua

Thien Hue dated 19 December 2005

Chapter II: Fishers' Organizations

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Article 3. Individuals and households participating in lagoon fisheries must organize themselves in Fisheries Associations at the village's level, inter-village or commune levels. The State will only delegate the power of lagoon fisheries management to the fishery associations at the grassroots level.

Article 4. Fisheries Associations at the grassroots level are social and professional organizations. Fisheries Associations are under the Vietnamese Fisheries Society (VINAFIS). The Fisheries Associations are operated under the leadership of the Communist Party and authority of the communes, sponsored by the Department of Fisheries and Districts' Offices of Agriculture and Rural Development and professionally instructed by the higher Fisheries Associations.

Article 5. The State delegates management of fisheries resources in certain areas of lagoon to Fisheries Associations at the grassroots level. On that basis Fisheries Associations properly and creatively regulate the fisheries activities of their members, ensuring the harmony among members and between members and associations and the whole society.

Article 6. Fisheries Associations can take the initiative in arranging the fishing grounds while maintaining the traditional fishing grounds of individuals and households in line with the general planning of the State and the benefit of the community.

Article 7. Fisheries Associations have to act as management agencies on behalf of government agencies at all levels in the fields of lagoon fisheries tax, management and protection of aquatic resources, management of the aquatic environment and transportation through the fishing grounds, etc.

Article 8. Fisheries Associations at the local level are responsible for resolving conflicts in fishing grounds and about resources among individuals and/or household members. Only when conflict resolution fails do the authorities intervene.

Article 9. Within the framework of their associations, fisherfolk can create forms of voluntary fisheries economic cooperation in the community such as: credit, savings, fisheries product processing and sale, material supply, etc.

Article 10. Fisheries researchers, managers, traders, manufacturers and investors can participate in Fisheries Associations at the local level as unofficial members who provide assistance and cooperation for development. Fisheries Associations at the local level can admit or refuse these people.

Article 11. The State encourages Fisheries Associations at the local level, based on the State Law, to develop their "self-management rules" detailing community rules and aimed at protecting fishing grounds, aquatic resources and other issues such as protection of the aquatic environment and management of water ways and collection of fisheries tax, etc.

Article 12. Fisheries Associations at the local level have the right to expel members who seriously violate their rules many times, seriously violate the State Law or whose action adversely impacts the environment and aquatic resources.

Chapter III: Management of Fisheries Capacity

Article 13. The Provincial People's Committee delegates power to the People's Committees of Lagoon Districts to issue the fishing rights to Fisheries Associations at the village and commune levels in certain water bodies in their designated area based on the quantity and types of fishing gear, fishing seasons and aquatic species. The fishing rights in the lagoon area include the rights and responsibilities to timely prevent acts of fishery law violation, responsibilities of protecting fishing grounds, developing aquatic resources, ensuring free access to water ways, preventing degradation of the water environment and ensuring submission of taxes to the State.

Article 14. Fisherfolk using fixed fishing gear can only locate their gear within the designated water area of their local association. They have to maintain corridors, for aquatic species to move, according to the improved planning. Fisherfolk using mobile fishing gear are allowed to carry out their activity in adjacent areas, but they are not allowed to disturb the fixed fishing gear.

Article 15. In the lagoon it is forbidden to use fishing boats with a machine capacity of more than 16.5 HP.

Article 16. Natural aquatic resources exploitation taxes in the lagoon fully contribute to commune budgets. The People's Committees of the Communes define the percentage of tax that is left for Fisheries Associations at the local levels to cover the expenses of tax collection in the community, management, organization and implementation of aquatic resources protection and development activities.

Article 17. The taxed production norm of aquatic resource exploitation for each area of lagoon fisheries is agreed upon by the Provincial Tax Department and the Department of Fisheries and is then submitted to the Provincial People's Committee for approval after consultation is made with communes' authorities and local Fisheries Associations.

Article 18. Fisheries Associations are granted the fishing right for a period of ten years in normal water bodies and five years in sensitive water bodies. In extremely sensitive water bodies, the District People's Committee annually grants the fishing rights or authorizes the Commune People's Committees to carry out an annual auction for this exploitation.

Article 19. The State can revoke rights over all or parts of the allocated water bodies from Fisheries Associations in the following cases:

1. The Fisheries Association does not exist anymore.
2. The Fisheries Association voluntarily returns the allocated water bodies.
3. The term of use of the allocated water bodies has expired.
4. The Fisheries Association does not fish, protect the aquatic resources or abuse the resources without the permission of concerned agencies.
5. The Fisheries Associations seriously violate the law on fisheries management or other laws.
6. The term of use of fishing rights in the water bodies has not expired but the State needs the allocated water bodies for socio-economic development.

Article 20. The government agencies that decide to grant the fishing rights are entitled to make a decision to annul or cancel it.

Article 21. Sports and recreational fisheries and some small fishing jobs including handline fishery, fishing-tackle, casting-net fishing, gill net fishery with the net's length less than 50 m, fishing with pots of all kinds, oyster raking, crab and snail catching by hand can freely use the lagoon areas. These activities cannot disturb the fishing gear registered by the local Fisheries Associations.

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