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**A review on self- or community management measures in New Zealand and Australia**

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## **Introduction**

This report is a desktop-study considering the experiences of self- or co-management measures in Australia and Zealand. It provides additional information

It is composed of four chapters. The first chapter provides a general discussion on self- or co-management in fisheries. The second chapter provides a discussion and examples of experiences of such management measures in New Zealand. The third chapter focuses on self- or co-management in Australia. The fourth chapter concludes.

The aim of this report is to provide information on the experiences of self- or co-management in non-European fisheries to supplement information extracted from European case studies on different management measures.

### **1. Self- or co-management – General discussion**

Most governments design and implement fisheries management regimes with the aim of making their fisheries economically, biologically and socially sustainable. Usually, these three aims are mutually inter-dependent, in the sense that if one is not reached, the others are less likely to be reached also.

Self- or co-management is not a well-defined concept. In the literature it usually refers to a deviation from a top-down approach to management to more bottom-up procedures where fishers, fishing communities or other stakeholders, can take part in and influence management decisions.

Some authors stress that some fisheries management systems are based on Western attitudes and are not socially acceptable to society as a whole or certain sub-groups of society. Self- or co-management has been seen by many as a way to manage fisheries in a more traditional way with greater level of compliance and better use of knowledge due to participation and buy-in of stakeholders in the management process (see e.g. Gutierrez *et al.*, 2011, Pomeroy *et al.* 2001,FAO (2008), Brent Hall *et al.*, 2009, Jentoft, 1989). Johannes (2002) lists the following management measures as being part of the co-management toolbox:

- limited entry
- marine protected areas
- closed areas
- restrictions on the use of damaging or overly efficient fishing methods

All these measures are to be found in most existing management systems regardless of the level of self- or co-management. Therefore it does not seem fitting to define self- or co-management on the basis of different management measures.

Defining self- or co-management on the basis of stakeholder participation in fisheries management seems more fruitful. As discussed above, self- or co-management involves the participation of fisheries, fishing communities and/or other stakeholders in the design and implementation of fisheries management. This is usually done through the strengthening of local authority, legal recognition and support for tenure and often through increased emphasis of regional and national governments, as well as NGOs, on support and advice to locals (Johannes, 2002).

For this reason we define self-, community or co-management, as any management where fishers, local communities or other stakeholders, are given explicit rights to affect and/or implement management measures. We will henceforth use the term co-management as a general term. Another widely used term is devolutionary fisheries management.

This definition also highlights that co-management can be of various types and degrees of centralization. If non co-management is defined as a perfectly centralized government plan as opposed to a fully delegated management system then it is highly unlikely to find the two extremes in real-world situations. Even in a top down management system, some consultative process with stakeholders is often the case and in systems where many or most of the fisheries management decisions and implementation mechanisms have been taken over by stakeholders there is still the need for approval from the centralized government.

Co-management should thus be regarded as a continuum of different degrees of devolution.

Having defined co-management the problem remains on how to evaluate the experience of co-management systems. A fundamental problem arises when evaluating whether a community management system has been successful or not due to the lack of the possibility of comparing the management outcome with other alternatives.

However the literature provides some insights on which elements of co-management seem to be more important than others in creating positive outcomes with regards to economic, social aims and ecological sustainability. Gutierrez *et al.* (2011) analyze 130 co-management systems worldwide and conclude that strong leadership individual or community quotas, social cohesion and the use of protected areas enhance the possibility of achieving positive results.

This result is in concordance with economic theory where strong and clear leadership, coupled with the right incentives through the use of catch-shares, helps in alleviating common problems with fisheries management such as overfishing and low profitability (see e.g. OECD, 2012).

## **2. Co-management in New Zealand**

New Zealand has a relatively long history of using a property rights based management system to manage its fishery. It is a rather comprehensive ITQ system which relies on market transactions and private incentives to prevent overfishing and improve economic efficiency.

As with all fisheries, the New Zealand fisheries are a complex web of different fisheries and management actions. With regards to co-management, and with some simplification, we will focus on two distinct aspects of co-management in New Zealand. One is the inclusion of native Maori participation in the management of some fisheries. The other is the development of deepwater fisheries and the other industrial fisheries in New Zealand.

### *Maori*

Maori were provided with a substantial stake in commercial fishing. Under the Treaty of Waitangi, Maori were guaranteed undisturbed possession of their fisheries until they wished to dispose of them to the Crown. With the introduction of the QMS the government bought 10% of quota shares and gave to the Treaty of Waitangi Fisheries Commission for the benefit of Maori. In 1992 the government gave Maori a cash settlement that was used to buy half of the shares in New Zealand's biggest fishing

company. Furthermore the government gave Maori 20% of the commercial quota shares of any new species introduced into the QMS. Thereby, Maori have a considerable stake in the commercial fisheries.

With regards to co-management, the government in 2004 approved the distribution to Iwi of substantial fisheries assets.<sup>1</sup> This is implemented by a specific Maori Fisheries Trust<sup>2</sup> which works to advance Maori interest in the marine environment, including customary commercial fisheries, aquaculture and providing policy and fisheries management advice and recommendations to Iwi and the wider Maori community.

Customary fishing rights are provided for Maori to recognize local needs. The local people thereby develop management plans that guide harvesting decisions to ensure sustainable stocks and culturally acceptable harvesting practices. There is a specific permitting process for customary take that is managed by local Iwi.<sup>3</sup> Specific regulations exist considering customary fishing, guardians and special management areas.

Tools were created under the Fisheries Act of 1996 to develop policies to assist the management practices of Maori considering non-commercial fishing rights. These include:

- Special reserves (Mataitai reserves) where commercial fisheries are banned but recreational fisheries allowed.
- Taiapure is a local management tool used in an area that has customarily been of special significance as a source of food or for other reasons. All fishing can continue but locals become involved in the management of both commercial and non-commercial fishing in the specified area.

These are just examples of how Maori can influence the management of aquatic resources within the legal framework in New Zealand.<sup>4</sup>

To our knowledge there does not exist studies that measure in a quantifiable way the experience (success or failure) of such co-management measures.

#### *Co-management within the QMS system*

The QMS in New Zealand, based on property rights, uses market solutions to align the incentives of the industry with the objectives of economic efficiency and biological sustainability of the resources. The system encourages and calls for stakeholder participation in the fisheries management process and provides the flexibility to incorporate social concerns, such as Maori rights, as described above.

Stakeholder's participation in management manifests itself in many ways. Industry (being an important stakeholder) has clear incentives for improving fisheries management. Numerous examples exist of a successful delegation of management. Here we will highlight a few of these cases.

The Bluff oyster fishery is a good example of how property rights based systems and self-governance can work in a successful way.<sup>5</sup>

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<sup>1</sup> Iwi are 'nations' or tribes of Maori. These are the largest units in Maori culture.

<sup>2</sup> See <http://teohu.maori.nz/>

<sup>3</sup> See Bess (2001), Day (2004) and Bess and Rallaputi (2007).

<sup>4</sup> Further information is available at [www.fish.govt.nz/en-nz/default.htm](http://www.fish.govt.nz/en-nz/default.htm)

### *Example: The Bluff Oyster fishery*

Between 1986 and 1992, fishing of Bluff oyster in the Foveaux Strait was disrupted by an outbreak of *Bonamia* and the fishery was officially closed between 1993 and 1995 to allow the fishing grounds to recover. The fishery was conducted by commercial fishermen, traditional Maori fishers as well as for recreational purposes. The oyster fishery came under the QMS in 1998 which reduced the problem of over-capacity but with no clear amelioration in the stock level or management costs. The property rights system however provided stakeholders with incentives to govern the fishery themselves.

After various trials and tribulations the Blue Oyster Management Company (BOMC) drafted a management plan which was informally given to the Ministry of Fisheries for review. It should be noted that the participants of the BOMC are solely commercial stakeholders while other stakeholders were formally absent, although consulted on some issues. With changes in government policies, the BOMC revised their plan to incorporate the Ministry's considerations as well as incorporating other stakeholders in the planning process. Such a plan was finally approved by the Ministry.

The BOMC represents all quota holders in the fishery and mandates almost every aspect of the commercial fishery, including stock and effort management, collection and assessment of data, compliance as well as consultation with industry stakeholders. The Ministry sets the TAC but the company may modify the catch limit through mutually agreed in-season adjustments.<sup>6</sup>

Although it is difficult to compare the outcome of this management arrangement with what would have happened under another arrangement, Yang et. al. (2010) conclude that it has been successful as stocks size has recovered faster from *Bonamia* outbreaks than before. It is more difficult to assess the economic benefits. The fact that BOMC has taken over many aspects of the management arrangements implies that at least they believe that their commercial interests are not worse than under more traditional top-down management types.

### *Other examples of co-management*

There are numerous other cases of devolutionary management practices in the New Zealand fisheries where industry takes an active part. Examples include the Orange Roughy deepwater fishery (Clement et. al., 2008), Deep-sea crabs (Soboil and Craig, 2008) and Scallop (Mincher, 2008). The experience is generally positive, from an economic viewpoint, although specific challenges remain in each and every fishery.

One aspect of devolutionary fisheries management is the possibility of cost savings to governments. Economic theory stipulates that governments should mainly provide public goods. Fisheries management often has a public good component but at the same time those mostly affected (in a positive or negative way) are only the stakeholders of each and every fishery. If the effects of fisheries management are mainly private, rather than public, the question of costs of management and who pays it becomes important.

### *Cost saving from co-management*

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<sup>5</sup> Here we only discuss the fishery in a very general way. For a more detailed analysis see Yang et. al. (2010).

<sup>6</sup> See Yang et. al. (2010), 265-266 and Brent Hall et al. (2009).

New Zealand provides interesting examples of cost savings due to devolutionary management practices.

FishServe is a company owned by the New Zealand Seafood Council Ltd which again is owned by the industry. FishServe has a contract with the Ministry of Fisheries to provide certain services, both on a statutory basis and non-statutory basis.

With a Statutory basis, FishServe manages the issuance of fishing permits, vessel registrations, transfers of annual catch entitlements, permits, transfers of quota shares, reports on fishing effort returns, allocation of species into the QMS. It holds a register of the information above and disseminates extracts from the database.

Another company, owned by FishServe, provides financial services through banks and operates New Zealand seafood industry training organization. The revenue thus generated is used to offset the cost of the statutory services mentioned above. This company is also funded partly by the Ministry of Fisheries and partly by fees and charges.

Previously these services were provided by the New Zealand government. As the industry believed that they could be provided at a lower cost the government decided to transfer the staff and funds to FishServe. In 1999 the cost to government was \$8.65 million with a staff of 82. Seven years later the cost had been reduced by around 40% and the staff by around 30%.<sup>7</sup>

#### *Limitations to co-management*

Despite numerous cases of successful devolutionary practices in New Zealand the progress was only limited to specific fisheries but has not become a general rule. The reasons are many. Townsend (2010) postulates that this is due to transaction costs being proportionally higher than the benefits of greater self-governance. New Zealand had already reduced costs of management which made additional cost-cutting less important than otherwise would have been the case. Townsend (2010) provides four explanations for high transactions costs of self-management; one being the requirement for unanimous agreement among stakeholders, second limited tools for private enforcement, third, unrealistic expectations that self-governance would solve third-party externalities such as related to environmental concerns and fourth the difficulty in specification of standards of accountability.

### **3. Co-management in Australia**

In Australia fisheries co-management is defined as an arrangement in which responsibilities and obligations for sustainable fisheries management are negotiated, shared and delegated between government, fishers, and other interest groups and stakeholders.<sup>8</sup>

For the last decade, Australia's fisheries management has been gradually moving towards more co-management. In 2006 a special working group on fisheries co-management initiative, produced a report which provides guidelines on how to implement co-management in Australian fisheries.<sup>9</sup> One of the drivers towards more co-management of Australian fisheries was the willingness to lower the

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<sup>7</sup> See Fisheries Research and Development Corporation (2006).

<sup>8</sup> Fisheries Research and Development Corporation (2006).

<sup>9</sup> Ibid.

administration costs. Participation of indigenous people in management has also played an important role in the willingness to further devolution.<sup>10</sup>

Australian fisheries are numerous and cover a wide variety of geographical, ecological, economic and social situations. It is therefore difficult to generalize. We will henceforth focus on co-management in South Australia which is well documented and provides insights to the practices used.<sup>11</sup>

### *Co-management in South Australia*

In South Australia, most fisheries are managed through arrangements where the industry and/or other stakeholders are at least involved in consultative arrangements.<sup>12</sup>

The process of moving from centralized management to more co-management involves certain steps. First there is an exploratory stage where information is gathered and the feasibility of devolution assessed. Then there is a development stage where consultative arrangements with key stakeholders are made.

There exist two minimum conditions for the government to engage with industry or stakeholder organizations in consultative co-management. First is that there is a representative, incorporated and financially secure industry/stakeholder organization with a sound governance structure, and secondly that there is active leadership with capacity to engage with government authority in a constructive way.<sup>13</sup>

Moving from collaborative to more delegated co-management calls for further preconditions, including an audit process, refinement of existing management plans, development of standards and criteria for conducting scientific assessments, to name but few.

Although many management function can be considered for delegation other stay with the government, including policy development, setting of TACs, investigation, enforcement and prosecution, regional development, etc.

### *Example: The Spencer Gulf Prawn Fishery*

The Spencer Gulf Prawn Fishery in South Australia has been well documented and provides an example of how a co-management system was introduced and has been implemented.<sup>14</sup>

The Spencer Gulf Prawn Fishery is an economically important fishery, both with regards to catch values and economic activities in the region. The first attempt at commercially trawling for prawns in the gulf was in 1968 but was unsuccessful. Some later trials occurred with limited success until late 1967 when fishing grounds were found and soon fishermen joined the new fishery. In 1968 the authorities restricted entry through the issuance of permits to prevent overfishing and over capitalization. Soon stakeholders united in an Association. Soon the industry, through the Association, requested for permanent closures as they believed it would create long-term benefits. At first the government did not support the closures but nevertheless they were managed by the fishermen themselves. In 1983/1984 scientist started collaborating with fishers in many ways, e.g. through the

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<sup>10</sup> See Carter and Hill (2007).

<sup>11</sup> For discussion on co-management in other Australian regions and fisheries see. Thwaites and Andersen (2008) and Kangas et. al. (2008).

<sup>12</sup> PIRSA (2013).

<sup>13</sup> Ibid.

<sup>14</sup> This description borrows mainly from Hollamby et al. (2010) and Zacharin et al. (2008).

use of example surveys conducted by commercial vessels. In 1997 Fisheries Management Committees were established and in 1995 the Fisheries (Management Committees) Regulations outlined the co-management principles. An active consultation approach was taken to develop management plans, develop and review harvest strategies and identify other issues of importance for the management of the fishery. In 2002 the Association developed a 10 year plan with the goal of managing the fishery with minimal government involvement. With the Fisheries Management Act in 2007 the Association became further involved with the governmental agencies for management and scientific research. The new act facilitated co-management by providing scope for further delegation of functions.

In the co-management of the fishery, the Association, plays a role, with government institutions, in all the different processes of harvest strategies, sport surveys, research, observer program, other research, legislation/policy, licensing, communication, enforcement, industry development and human capital development. The Association acts either as a managing authority, delegated authority or through providing different inputs.<sup>15</sup>

Evaluating the success or failure of the Spencer Gulf Prawn Fishery is difficult due to the lack of a benchmark for comparison. Biologically, the fishery is deemed sustainable and there is willingness among the public authorities and the Association to keep on managing the fishery in a co-operative way as reflected in the newest management plan.<sup>16</sup>

#### **4. Conclusions**

Co-management of varying degrees and types has become more the rule than exceptions in the fisheries of New Zealand and Australia. The depth and level of co-management varies between fisheries within each country reflecting the fact that co-management is not a panacea for fisheries management and that there is no one-size-fits-all co-management type.

Comparing New Zealand and Australia provides valuable insights. In both countries co-management has evolved from increased willingness of industry and stakeholders to participate in the management process. Generally speaking, the driver behind this increased willingness does not seem to be the same.

In the more market-oriented fisheries management system of New Zealand, industry has taken the lead through the founding of corporations and firms which see the possibility of increasing their long-term benefits from taking over parts of the management. The government has responded by allowing for this development to happen.

In Australia, the public authorities have initiated co-management policies in order to better manage their fisheries and to help the policy reach the goal of ecologically, economically and culturally sustainable fisheries. Australia has also, in the design of the co-management policy, carved out the roles and functions that can be handed over from the government to different stakeholders and these functions that cannot.

Even in a very market focused fisheries management system as the one in New Zealand, there is a limit to the development of co- or self-management of fisheries. These limits depend not only on fisheries specificities, but also on other factors, such as risk and transaction costs.

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<sup>15</sup> For details see table 5, page 14 in Hollamby et al. (2010).

<sup>16</sup> PIRSA (2014).

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