The Challenge of Building Successful Stakeholder Groups:
New Zealand's Experience in Developing a Co-Management Regime

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Introduction

This paper examines the development of a co-management approach in New Zealand through the devolution of certain management responsibilities from the Ministry of Fisheries to fishery stakeholder groups. After reviewing a few concepts underpinning the co-management and property rights literatures, this paper examines the evolving characteristics of stakeholder groups in New Zealand. In 1999 and 2001, a mail survey was used to gather data on the characteristics of stakeholder groups, as well as the attitudes, and expectations of stakeholder group leaders. Results of these surveys are examined using Ostrom's (1990) design principles for long-lived natural resource management institutions. The results suggest that stakeholder groups are experiencing mixed success in developing institutions that will be resilient to long-term challenges. Successes are identified and recommendations for the further development of this management approach are offered.

Co-management has attracted considerable attention as a method to manage common pool resources such as fisheries. Theoretical work and some research suggests that co-management can reduce the high transaction costs associated with fisheries management (Scott, 1993; 1999) and provide the opportunity for fishers and local interests – such as recreation fishers, indigenous interests, and local communities – to participate in decision making (Pearse & Wilson, 1999; Singleton, 2000). However, co-management cannot be regarded as a panacea for natural resource management problems. Researchers have raised concerns over external and internal legitimacy (Jentoft, 2000), capture of the regulatory process (Singleton, 2000), and capture of management groups by community (or industry) elites (Davis & Bailey, 1996).

Within this setting of increasing interest in and debate about co-management, there are relatively few cases of co-management in practice in large industrial settings, and even fewer studies of newly developed stakeholder groups or national systems. Instead, research focuses on regional organizations (e.g., Baticados & Agbayani, 2000; Hauck & Sowman, 2001;) or co-management regimes that developed from existing community management regimes. (E.g., Ebbin, 2002; Jentoft, 1986; Pearse & Wilson, 1999)**.**

New Zealand, with a recently developed co-management regime[1] is an important case for developing our knowledge of co-management regimes. Not only is the management regime relatively new, but also it is national in scope, and primarily focuses on industrialized fisheries (e.g., orange roughy, snapper, hoki) in which traditional community management organizations have not existed. Thus, a key opportunity is present to examine the regime as it grows and develops. This provides the opportunity to better understand the institutional design issues surrounding co-management.

Defining Co-Management

What exactly is "co-management"? Researchers and practitioners within the co-management literature have diverse definitions. If one accepts Charles (1992) description of fisheries management regimes (illustrated in

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[1] Enabling legislation was passed in 1999

Figure 1) as three distinct approaches (bureaucracy-based, market-based, and community based), then co-management is most often described as a variety of institutional arrangements in which the fishery users and the government share management responsibilities. For example:

- Sen & Nielsen define co-management as "an arrangement where responsibility for resource management is shared between the government and user-groups" including a broad range of behavior ranging from government consultation with user-groups, to user-groups managing a resource with the assistance of a central government (Sen & Nielson, 1995: 406)
- Jentoft states "Co-management takes a middle course. It is a meeting point between overall government concerns for efficient resource utilization and protection, and local concern for equal opportunity, self-determination and self-control." (Jentoft, 1989: 144)
- McCay describes co-management as "one where almost all management functions are the shared responsibility of government agencies and fishermen. Fishers should be directly involved in decision-making (as opposed to the advisory role they more often have) and have authority to construct and implement regulations. (McCay, 1993:7)
- Noble argues, "Communities and fishers should have greater access to and control over decisions affecting local fishery resources. This access and control must be in cooperation with political, economic, and administrative functions. Co-management is the application off this principle to fisheries management." (Noble, 2000:76)

Thus, rather than seeing competing approaches, this literature sees co-management as incorporating a broad spectrum of management approaches and bundling of property rights, usually ranging from bureaucratic control to community management. This conception of co-management is illustrated in Figure 1 as the line down the right side of the triangle.

Figure 1: Approaches to Fisheries Management
(Adapted from Charles, 1992)
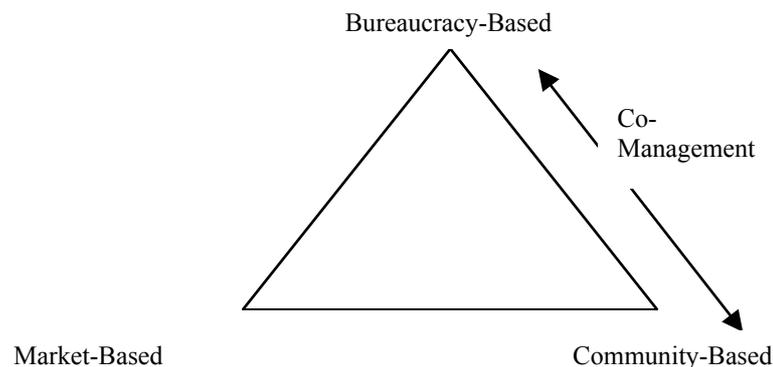
However, there is a growing group within the co-management literature arguing that co-management is not just a combination of bureaucratic and community management. Instead, the property rights distributed by market-based regulation (such and an Individual Tradable Quotas (or ITQ) management approach) can be key to the development and success of co-management regimes. If we turn to the property rights literature, Scott's 1993 and 1999 analyses raise the possibility of co-management also developing out of a convergence between the market-based and bureaucracy-based approach. This occurs because ITQs provide a means for resolving conflicts over the distribution of the resource (in this case the fish). Research into the development of co-management in New Zealand (Yandle 2001, 2002; Bess & Harte, 2000, Hughey et al, 2000) confirms the key role that the property rights developed from market-based regulation played in the development of co-management in New Zealand.

Thus, co-management is not just a simple set of arrangements running along one leg of the triangle. Rather, co-management can be thought of as a spectrum of institutional arrangements in which management responsibilities are shared between the users (who may or may not be community-based) and government. (Illustrated by the central space in Figure 2.) The origins of co-management can come from a variety of regimes, but a key foundation characteristic being users having a strong bundle of property rights. These rights can be distributed to a long-lived social group (e.g., community management) or to individuals and companies (e.g., market-based regulation); but the foundation of a strong bundle of property rights is necessary for the development of a co-management regime.

Figure 2: Integrative Understanding of Co-Management Approach

Bureaucracy-Based

Co-Management

Market-Based   Community-Based
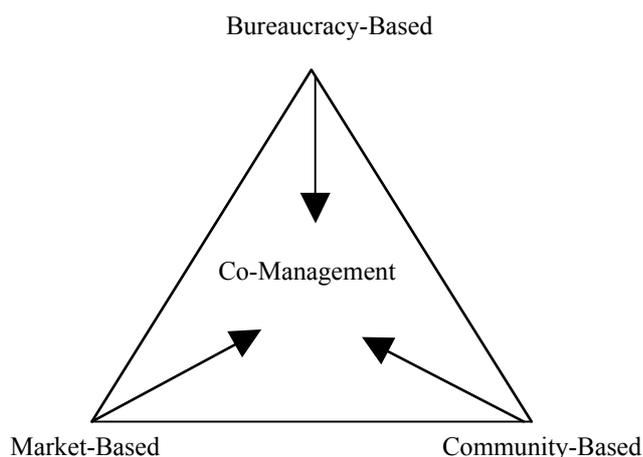
Examining the Success of Co-Management Regimes

This paper explores the characteristics of the stakeholder groups taking on co-management responsibilities, and examines how likely they are to succeed. In examining this question, Ostrom's (1990) design principles for long-lived institutions are used as a guide.[2] This theoretical lens is explained below.

Drawing upon many case studies Ostrom defines seven characteristics for successful, long-lived self-governance, which are described in Table 1.[3] They are: clearly defined boundaries; congruence between rules and local conditions; collective-choice arrangements; monitoring; graduated sanctions; conflict-resolution mechanisms; and minimal recognition of rights to organize. In addition, for institutions that are part of a larger system, nested enterprises enhance performance.

Table 1: Design Principles of Long-Lived Institutions (Ostrom, 1990:90)

Design Principle	Description
Clearly Defined Boundaries	Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.
Congruence	Rules that restrict time, place, technology, and/or quantities of harvest are related to local conditions and to provision rules.
Collective Choice	Most parties affected by the operational rules can participate in modifying the operational rules.
Monitoring	Monitors, who actively audit fishery conditions activities, are accountable to the appropriators or are appropriators themselves.
Graduated Sanctions	Fishers who violate rules are likely to be assessed graduated sanctions by fishers, officials accountable to the fishers, or both.
Conflict Resolution	Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials
Right to Organize	The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.
Nested Enterprises	Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

These design principles can be used to guide an assessment of the extent to which stakeholder groups management match the characteristics of long-lived institutions, and possibly offer insights into the probability of the stakeholder group approach being successful. A key point to note is that these principles serve as a guide

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[2] Pomeroy et al's (2001) fourteen conditions affecting the success of fisheries co-management could also be used to examine success of stakeholder groups. However, Pomeroy et al's criteria are more specifically focused on small-scale fisheries in Asian nations, and there is considerable overlap between Pomeroy et al and Ostrom's criteria. Thus, this analysis focuses on Ostrom's design principles, which are structured to be more universally applicable.
[3] In-depth description of these conditions can be found in both Ostrom 1990 and Ostrom 1995.

for understanding whether the incentives and social groundwork are developed enough to support the hard work necessary to maintain an institution managing a common pool resource. Furthermore, since this is a co-management system, in the case of New Zealand fisheries the roles of both New Zealand's Ministry of Fisheries (MFish) and the stakeholder groups must be considered.

Background Information: A Brief Review of New Zealand Fisheries Management

A broad overview of the New Zealand fisheries management system shows that the 200 Mile Economic Exclusion Zone (EEZ) covers an area of 1.2 million square nautical miles or approximately 15 times New Zealand's land mass. There are approximately 1000 species in the EEZ, of which 100 are considered commercially significant. (Statistics New Zealand, 1999) The annual catchable stocks totaled approximately 531,000 tons of quota-managed species, and 79,000 tons on species not under quota management (Clement & Associates, 1998). In 2000, the fishing industry was New Zealand's fourth largest export earner, with exports totaling NZ$1.43 billion (SeaFIC, 2002), with squid, orange roughy, hoki, and rock lobster \the largest revenue earners. (Statistics New Zealand, 1999). With the exception of lobster, these are all mid to deep-water species requiring large-scale fishing operations.

A few other characterizations of the fishing industry are particularly relevent. First, the structure of the fishing industry is very different from the one typified in the co-management literature. The industry is divided into two very different sectors: First, the deepwater industry (species such as orange roughy, dories, and hoki) is dominated by a small number of large vertically integrated trawling and processing companies. Second, the inshore industry (species such as snapper, flounder, crayfish, and gurnard) is fished by a mixture of relatively small-scale fishers (1-3 man operations) who primarily sell to the vertically integrated companies, and boats owned by the vertically integrated companies. The grounding of the fishing industry in local communities (with the exception of a few sector and species) is at this stage very limited.

Historical Developments

In addition, the history of the fishing industry in New Zealand is very different than in many nations. The deepwater industry is relatively young, dating back to 1983, when New Zealand declared its EEZ and began offering incentives for the (then nascent) domestic industry to replace the foreign fleets that had been fishing within the 200-mile limit. There is a longer (100+ year) history of fishing and governmental fishing regulation in the inshore industry, and some towns (e.g., Bluff, Timaru, and Tauranga) have their origins as ports and fishing towns. But the documentation of historically strong community-based regulation that is seen in other similar fisheries (e.g., Creed et al's (1994) work in Nova Scotia) is lacking. The main exception to this is the indigenous Maori, for whom fishing was an integral part of the traditional community and lifestyle (e.g., Bess, 2001; Orange, 1988; Hawkey, 1994). While there are some strong (primarily nationally-based) groups representing the fishing industry (e.g., Seafood Industry Council (SeaFIC), Federation of Commercial Fishermen), the strong local institutions that are usually associated with successful co-management are not apparent in the case of New Zealand.

In 1986, New Zealand became one of the first countries to adopt market-based regulation when it instituted its Quota Management System (QMS), with its emphasis on the use of individual tradable quotas (ITQs)[4], removal of subsidies and promotion of exports is viewed as a long-standing example of the market-based approach to fishery management. This approach is well described in the literature (e.g., Annala, 1996; Batstone & Sharp, 1999; Boyd & Dewees, 1992; Crothers, 1988; Mace, 1993).

Development of Co-Management

During the mid to late 1990s, what is referred to as a "devolution movement" within the New Zealand commercial fishing industry[5] first began to attract public attention. In September 1999, this movement was recognized when the 1999 Fisheries Amendment Act was passed, delegating certain management

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[4] In this paper, Quota Management System (QMS) refers to the broad regulatory system. Individual Tradable Quotas (ITQs) refers to the quota (and mechanism) used to represent the property right being managed by QMS.
[5] Pomeroy & Berkes would disagree with calling this process "devolution" – they define devolution as the permanent transfer of power from a central government to local government, while they would describe what is going on in New Zealand as "privatization" in which power is transferred from the government to a non-governmental organization. While their terminology is more accurate, I continue using the term "devolution" since it is used by the participants.

responsibilities to "stakeholder" groups[6]. Stakeholder groups are organizations, usually ITQ owners, who take on responsibility for managing the fishery in which they own ITQs. As envisioned in the enabling legislation (Fisheries Act 1996 Amendment Act 1999), stakeholder group management is not a replacement of QMS but rather a supplement to it; it is as another layer of institutions to which the Ministry of Fisheries' responsibly for "fisheries services"[7] can be transferred. Essentially, stakeholder groups are authorized to carry out routine management activities, including research, while the Ministry maintains the role of setting management standards, enforcement, and auditing stakeholder group activities.

While this move towards stakeholder management may appear to be a straightforward transition towards the type of co-management described in the literature; the structure of the fishing industry and the transition raises questions not fully addressed in the literature. Most notably, the structure of the fishing industry is very different from the one typified in the co-management literature because the industry is divided into two very different sectors. These are the deepwater industry, which is dominated by a small number of large vertically integrated trawling and processing companies; and the inshore industry, which is fished by a mixture of 1-3 man relatively small-scale operators (who primarily sell to the vertically integrated companies) and boats owned by the vertically integrated companies. This commercial environment has resulted in an industry that, at middle levels and leadership levels, has relatively limited grounding in the local communities in which the industry operates.[8] This structure means that the dominant participants are large-scale corporations, rather than the small-scale entrepreneurial harvesters who often characterize the co-management literature. Similarly, these industry participants are partnering with a national government, rather than the more localized state or regional governments.

Research Methods

Because it is an example of newly developed co-management regime, and because its stakeholder group approach is considerably different that what is describe in the traditional co-management literature, New Zealand represents an important opportunity to study the development of co-management regimes.

To take advantage of this opportunity, I conducted multiple surveys of the stakeholder groups in New Zealand. The first survey was conducted in 1999 (the year stakeholder group legislation was passed) and a second was conducted in 2001. It is anticipated that more surveys will be conducted at two-year intervals in the future. For both surveys, the New Zealand Seafood Industry Council (SeaFIC) provided an initial list of stakeholder groups. In 1999, all groups that were members of SeaFIC were surveyed, and while most of the groups were stakeholder groups formed to manage a specific fishery, a few more traditional fishing interests groups were also included. In 2001, selection was refined so that only groups that could be defined as stakeholder groups were included in the survey[9]. This change was made to conform with the more focused vision of what constituted a stakeholder group in 2001 compared to 1999. Stakeholder groups were contacted by mail and asked to complete a four-page survey on issues such as group characteristics, organization, management, interactions with other groups, and their vision of the future.

For the 1999 survey, thirty-two surveys were distributed and eighteen were returned, giving a response rate of 56%. For the 2001 survey, thirty-three surveys were distributed by mail, and nineteen were returned, giving a response rate of 58%. A brief comparison of responding and non-responding groups in both survey rounds be showed no significant difference between the two, so the survey may be considered representative. However, since the total number of responses is small, analysis here is restricted to simple descriptive statistics.

Current Characteristics of Stakeholder Groups

Results from the 2001 survey show that stakeholder groups are overwhelmingly interested in a single-species (83%), and are evenly split between national and regional in scope. Stakeholder groups are a relatively recent

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[6] The term "stakeholder group" is used for these organizations because that is the term used in New Zealand. These groups do not fully meet the criteria for what many in public management would consider a stakeholder group. Specifically, all interests in the fishery do not participate in these groups. A more accurate term for many of these groups is "Quota Owner Associations."
[7] As described in the enabling legislation, "fisheries services" includes a wide variety of activities including: maintaining quota registries, management of resources, enforcement, and research related to stock assessment and the effect of fishing on the environment.
[8] There are a few exceptions to this for a few sector and species such as Stewart Island and Chatham Island Crayfish/Rock Lobster.
[9] For the purposes of this study, a stakeholder group is defined as "a group that focuses on promoting the interests of fishers or working on the management of a specific fishery or group of fisheries. These groups usually focus on single species or multiple species within a specific geographic area." Groups involved in aquaculture are included because the line between aquaculture and fishing is becoming increasingly blurred. Groups that focus of specific industry sectors (e.g., vessel owners, independent fishermen) are not considered stakeholder groups under this definition.

phenomenon. Only 11% were begun before 1990, 22% were started between 1992-1994, 50% were formed between 1996-1998, and 16% were formed between 1999-2000. These figures may require interpretation, however, because 22% of groups were formed when an existing group transformed into a stakeholder group, suggesting that some groups have longer histories than these results indicate. Stakeholder groups also tend to be small. While 12% have membership in the hundreds, 88% have less than 100 members and 53% have a membership of 50 or less. However, these groups see themselves as representative of their fishery: half report that they represent between 60% and 80% of commercial interests and 44% report that they represent between 90% and 100% of commercial interests[10].

Seventy-two percent of reporting stakeholder groups work with species under quota management. Of the stakeholder groups under quota management, 73% restrict voting to quota owners only, and many vote on a corporate (1 ton = 1 vote) basis, although many groups reported that decisions in fact are consensus based. There is reason to be concerned about this approach to voting and representation. In some inshore fisheries (such as flatfish or snapper) a large of the fishers who either do not own quota or own minimal quota are effectively unable to exert a voice in their stakeholder groups. This is because if a formal vote is necessary, the larger fishing and processing companies can effectively control the result of a tonnage-based vote.

The responsibilities that stakeholder groups are undertaking is also important because it reflect the priorities of stakeholder groups and the complexity of tasks they are willing to address. Survey results (presented in Table 2) show that stakeholder groups are actively involved in what might be described as "advocacy" or "interest group" activities such as providing a voice for members or enhancing communication among members. More than 60% of stakeholder groups reported current involvement in more complex management activities such as monitoring conditions or member activities. But groups are avoiding the most complex and contentious management activities such as imposing penalties on members for breaking group rules or fishing law. Indeed, 53% of groups reported that they have no plans to take on this last activity. This pattern of embracing some, but not all management activities is important because it provides insights into groups' interests and capacity. Issues of monitoring and imposing penalties are key because they are vital stakeholder group responsibilities if

Table 2: 2001 Summary of Responsibilities Undertaken by Stakeholder Groups

Activity	do this now	plan 1 year	plan 2-5 yrs	no plan	no response
Communication	100%	0	0	0	0
Voice for Members	89%	11%	0	0	0
Harvest Rules	53%	16%	10%	16%	5%
Enhancement	37%	16%	22%	21%	5%
Monitor Conditions	68%	21%	0	0	11%
Monitor Activity	63%	11%	5%	16%	5%
Penalties for Group Rules	21%	0	42%	26%	11%
Penalties for Law	11%	0	26%	53%	11%
Resolve Conflict	53%	16%	11%	11%	11%

co-management is to be successful. Thus, the low interest in penalties both now and in the future raises fundamental concerns about moving further in the direction of co-management, and why the groups do not see this as in their interests.

Another important characteristic of stakeholder groups is whom they include in the decision-making process. As previously discussed, stakeholder groups report that they only include members of the industry. Other interests in the fisheries (such as recreational fishers, customary Maori users, environmentalists, or fishing communities) are not members of stakeholder groups. Some stakeholder groups do, to varying degrees, interact with the other fishery interests. (See Table 3.) Stakeholder groups interact the most with Maori interests,

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[10] This is defined by most stakeholder groups as the percent of quota ownership represented, or the percent of permit holders represented. Thus, it is possible that a large number of individuals who own a small amount of quota are not represented in these groups.

Table 3: 2001 Summary of Interactions between
Stakeholder Groups and Other Fishery Interests

	Environmentalists	Recreational Fishers	Maori
None	64%	53%	26%
Consulted	21%	26%	26%
Part of group	0	0	11%
More in future	5%	11%	11%
Other	11%	5%	5%
Quota owners	0	0	16%
No answer	0	5%	5%
Total	100%	100%	100%

but over half the stakeholder groups report no interaction with environmental or recreational interests. Of those reporting interaction, the predominant form of interaction is consultation – in which the groups seek out the advice of other interests, but are under no obligation to follow the advice received. The largest numbers of stakeholder groups consult with recreational interests, followed by customary Maori and environmentalists. This pattern of interaction raises significant concern. The stakeholder groups are seeking management responsibility for the entire fishery, but only professional fishing interests can be voting members of a stakeholder group. Furthermore, interaction between the stakeholder groups is limited, indicating that stakeholder groups (in current form) probably will not be able to govern on behalf of the entire fishery.

When, in the New Zealand case, non-commercial interest are not included in stakeholder groups, it is important to understand the quality of stakeholder groups' relationships with other fishery interests. Thus, stakeholder groups were asked to rate their relationships with other fishery interests on a scale from "very positive" to "very negative." The results of this question are presented in Table 4.

Table 4: 2001 Summary of Stakeholder Groups' Relationships
With other Fishery Interests

	MFish	SeaFIC	Recreational Fishers	Environmental Groups	Maori
Very positive	16%	26%	11%	5%	32%
Positive	53%	32%	37%	5%	26%
Neutral	16%	26%	32%	32%	26%
Negative	5%	11%	5%	37%	5%
Very negative	5%	0	5%	5%	0
Not applicable	0	0	5%	5%	5%
no answer	5%	5%	5%	5%	5%
total	100%	100%	100%	100%	100%

Stakeholder groups reported the most positive relationships with Maori interests (32% very positive) and the most negative relationships with environmental interests. (37% negative, 5% very negative). Finally, it is interesting to note the differences that that stakeholder groups reported in relationships with the Ministry of Fisheries (16% very positive; 53% positive) and with SeaFIC (26% very positive; 32% positive).

**Comparison of 1999 and 2001 Survey Results**

By comparing the results of the 1999 and 2001 surveys, one can gain insights into the development of stakeholder groups during the previous two years. These results show that during the two-year period between surveys, stakeholder groups made significant progress in building their capacity and interest in taking on management responsibilities and increasing their interactions with other fishery interests.

Regarding management responsibilities, Stakeholder groups express much more interest in monitoring fishing activities of group members. In 1999, only 47% were undertaking this responsibility. By 2001, the number rose to 63%, with 11% more planning on implementing programs in the next year. Groups are also taking more

interest in issues surrounding enforcement of their own rules. As is discussed before, interest in this activity is still low, but it is increasing compared with 1999. Specifically, while few (21%) are penalizing group members for breaking group rules now, the 2001 data shows that 42% plan to do so in the next 2-5 years. In 1999, 61% were not considering this activity at all. This evolution is important because it shows stakeholder groups' increasing willingness to take on difficult management tasks. However, the lack of interest in enforcing fishery laws (as opposed to group rules) remains a concern. Finally, the only activity that showed a major drop in activity between 1999 and 2001 was fishery enhancement activity. This may be due to more responses coming from stakeholder groups in which enhancement activities are not appropriate (for example deepwater fisheries, or species where enhancement is not technologically feasible).

Comparison of 1999 and 2001 reported interactions between stakeholder groups and other fishery interests also show increased communication. In broad terms, the percentage of groups reporting no interactions with other interests has rapidly decreased; and the percent of groups that report distant or "arm's length" interactions (e.g., consulting) or close interactions (e.g., such as inviting other interests to stakeholder group meetings) are increasing. However, stakeholder groups continue to rely more on distant interactions than close interactions. This dynamic is illustrated in Figures 3-5.
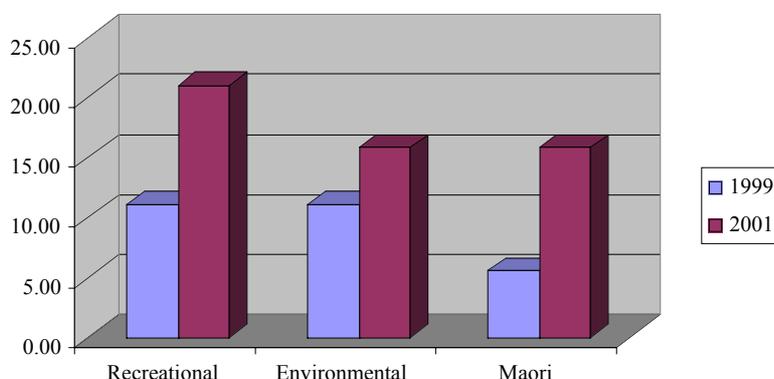
Figures 3-5: Degree of Interactions between Stakeholder Groups
And Other Fishery Interests -- 1999 versus 2001
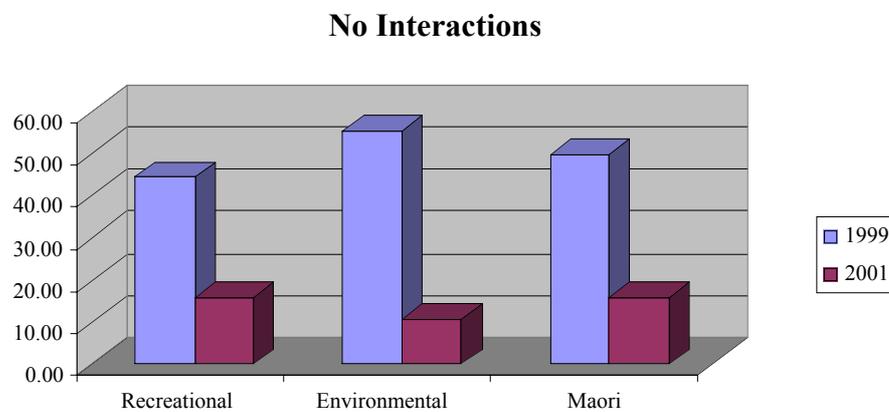
No Interactions

Distant Interactions
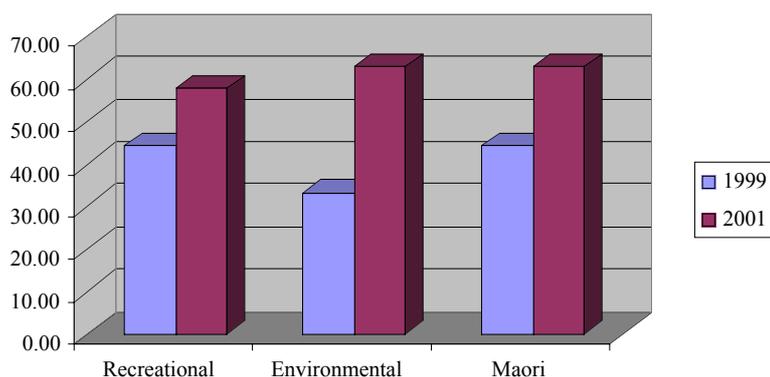
Close Interactions

More specifically, stakeholder groups report that in 1999, 44% did not negotiate with recreational groups, 56% did not negotiate with environmental groups, and 50% did not negotiate with Maori interests. By 2001, 16% of groups did not interact with recreational groups, 11% did not interact with environmental groups and 16% did not interact with Maori interests. The greatest increase in interactions was between stakeholder groups and Maori interests. 50% of stakeholder groups reported interactions in 1999, compared to 79% in 2001. However, stakeholder groups continue to have the most interactions with recreational fishing interests, followed by Maori interests, and environmentalists. These trends suggest an increased interest in, and efforts towards, interacting with some (but not all) fishery interests, but a continued reluctance to engage in close relationships.

Additional insights are gained by examining how the stakeholder groups' perceptions of challenges they face changed from 1999 to 2001. Results of this analysis are presented in Table 5. This shows considerable change in stakeholder groups' perceptions of challenges

Table 5: Changing Perceptions of Challenges Facing Stakeholder Groups: 1999 versus 2001

	Government Relations	Stakeholder Group Development	Conflict (excluding environmental)	Fishery Management	Other	Environmental Conflict / Pressure
1999	13.25%	32.43%	10.82%	35.13%	8.11%	0.00%
2001	5.56%	0.00%	13.90%	27.78%	33.33%	19.44%

over time. The most striking difference is that stakeholder group development was mentioned as a challenge by 32% of stakeholder groups in 1999, but no stakeholder groups mentioned this in 2001. Conversely, 19% of stakeholder groups mentioned environmental conflict or pressures in 2001, but no groups mentioned this concern in the 1999 survey. The rather surprising increase in the "other" category was due to an increase in the number of fishery-specific issues mentioned by stakeholder groups. This may also explain the rather surprising

small decrease in fishery management as a challenge, since many of these issues could be more generically described as fishery management issues. Finally, it should be noted that the percent expressing concern over government relations has dropped from 13% to 5%.

Analysis of Stakeholder Group Management Based on Ostrom's Design Principles[11]

Although New Zealand's stakeholder group approach is considerably different from that described in the traditional co-management literature, it is still possible to make some qualified predictions about the approach's potential for success. In developing these predictions, Ostrom's work is particularly helpful because it offers insight into successful governing institutions by drawing upon the successes and failures of both traditional and non-traditional institutions. Also, as is stated earlier, these design principles serve as a guide for understanding whether the incentives and social groundwork are sufficiently developed to support an institution managing a common pool resource, such as a fishery. Furthermore, since a co-management system is being examined, the roles of both the Ministry of Fisheries (MFish) and the stakeholder groups must be considered. Examining just the stakeholder groups would result in an incomplete analysis of stakeholder groups as a self-governing organization.

An analysis of the stakeholder group approach, using Ostrom's design principles, is presented in Table 6.[12] Overall, it presents a mixed impression of the stakeholder group approach. As presently organized, it is difficult to come up with a single assessment for each design principle. Assessment is also difficult because some stakeholder groups clearly have all or nearly all, design principles present, while others are missing many.

Table 6: Ministry and Stakeholder Group Performance Related to Design Principles

Design Principle	Ministry	Stakeholder Groups
Clearly Defined Boundaries	ITQs define commercial withdrawal rights. Recreational and Maori rights less well defined. Ministry sets & enforces geographic boundaries through QMAs, but they are often inappropriately large.	Stakeholder groups are presently organized to only represent commercial withdrawal rights. Recreational and Maori withdrawal rights are not included. Groups have potential to set more appropriate geographic boundaries, some are already undertaking this responsibility.
Congruence	Traditionally MFish made few input restrictions, and limited these to national or regional scope, resulting in limited congruence between rules and local conditions.	Over half of stakeholder groups make harvest rules, More than 25% plan to in the future. Rules vary from national to extremely localized.
Collective Choice	Ministry may be default provider of voice for non-commercial interests. Historically, they are not very successful in this role.	Voting rules appropriate for homogeneous deep-water fisheries. Tonnage rules deny voice to smaller fishers in heterogeneous fisheries. No voice for non-commercial interests.
Monitoring	Traditionally MFish was the sole or primary monitor of conditions and activities. Mixed success was experienced for both activities. Future role in this activity is uncertain.	About 2/3 of groups are actively interested in monitoring conditions, with slightly less interested in monitoring activities of members. Logbook programs are popular.
Graduated Sanctions	Ministry traditionally has sanctioning responsibility. However, graduated sanctions were not used.	Few groups are interested in sanctioning. Those that do use civil contracts. Private prosecutions are not allowed under current legislation.
Conflict Resolution	Ministry provides a conflict resolution mechanism to all interested parties. Some in industry have expressed concern over impartiality.	Groups actively interested in resolving conflicts between members, but less interested in resolving inter-group conflicts.
Right to Organize	Under 1999 legislation, government recognizes right of stakeholder groups to organize, if appropriate procedure is followed.	Right to organize is recognized.

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[11] A similar analysis was based on the 1999 survey data was also presented in Yandle, 2002.
[12] For a detailed explanation of this analysis, see Yandle, 2001.

THEME H: Future Paths for Rights Based Fisheries Management
The Challenge of Building Successful Stakeholder Groups: New Zealand's Experience in Developing a Co-Management Regime

PAGE 10

Nested Enterprises	Stakeholder groups represent a nesting of Ministry's national responsibilities.	While a few groups have nested enterprises, most are subject-based rather than based on regions or localities

In order to develop an assessment of the regime's performance for each design principle, both the Ministry's and the stakeholder groups' activities must be considered. Co-management performance can be summarized as follows:

♦ Clearly Defined Boundaries: Geographic boundaries based on Ministry definitions are too large, but a combination of Ministry and Groups definitions has potential to perform this task well. Non-commercial withdrawal rights (e.g., recreation and customary Maori) are not well defined

♦ Congruence: Ministry performance is lacking. Overall performance is mixed, depending on success of stakeholder groups.

♦ Collective Choice: Except for deepwater industry, collective choice arrangements do not adequately include all parties. Small or non-quota owning commercial fishers, recreational fishers, and customary Maori interests lack voice. This area needs improvement.

♦ Monitoring: Combination of Ministry and stakeholder groups has potential to perform conditions monitoring very well. But monitoring activities may continue to be a problem.

♦ Graduated Sanctions: Sanctioning exists primarily in the Ministry's domain, rather than in the co-management context. Sanctioning is not graduated. Stakeholder groups are reluctant to take on this responsibility

♦ Conflict Resolution: Performance is mixed – strong within stakeholder groups but needing further development at broader levels such as between groups or between groups and other interests (e.g., recreational fishers, customary Maori interests).

♦ Right to Organize: Right to organize is fully recognized under the 1999 Fisheries Amendment Act

♦ Nested Enterprises: While some degree of nested enterprises exists, it is not developed or localized to the point necessary for a successful national management regime.

This analysis suggests the right to organize is the strongest of the design principles, with the 1999 legislation clearly enacting into law the stakeholder groups' rights. Remaining principles are much more difficult to assess, and their performance is best described as mixed. For example, the basis the Ministry provides for congruence is weak, but some stakeholder groups successfully supplement this, while many others have no interest. Similar situations exist for monitoring and conflict resolution, as well as defining geographic boundaries. These are all areas that are presently weak, but could quickly be strengthened in a co-management regime with active stakeholder groups.

Several other areas raise more fundamental concerns. For example, customary Maori and recreational fishers withdrawal rights are not well defined. This raises collective choice problems for these interests. Collective choice interests are also raised by the voting rules that effectively reduce or deny the voice of small fishers or those fishing on leased quota. Another issue is graduated sanctioning for breaking group rules and fisheries law. The legal sanctioning regime exists for fisheries law, but it is not graduated; and the stakeholder groups (who would be most likely to introduce graduated sanctioning) are leery of taking on this responsibility – particularly for fisheries law. Finally, although the existence of stakeholder groups shows that a degree of nesting exists, nesting below this level often either does not exist, or is based around specific national problems, rather than more detailed regional or local management.

Weaknesses in areas such as these are of particular concern because they represent the fundamental character of the co-management regime, and are the most difficult to reach an appropriate arrangement. The danger is that if the issues of rulemaking, sanctioning, and responsibility are not successfully resolved, it will be more difficult for the institution to survive the many challenges it will face in the long term. Thus, while it will take time, it is important to make sure these arrangements are fair and robust.

When this assessment of the stakeholder group approach is compared to the Ostrom's assessments and outcomes, it suggests that as presently designed and implemented, stakeholder group management is presently best described as fragile. This should not be surprising, since these design principles are for long-lived self-governing organizations, and the New Zealand fisheries stakeholder groups are still in their formation stages. However, this assessment does suggest that the fundamental design issues need to be addressed early on to enhance the chances of building robust institutions. The stakeholder group approach, with the described weaknesses, is vulnerable to threats both internal to, and external from, this institutional arrangement. Internal threats include:

- Stakeholder groups' legitimacy as representative institution: This could occur if stakeholder groups are perceived as representing solely the interests of the largest quota holders in a fishery rather than the full range of diverse interests present in some fisheries.
- Stakeholder groups as cartels: When a stakeholder group or groups are composed of a few large quota owners, there is a danger that they will either act as cartels -- rather than simply performing a more limited set of legitimate stakeholder responsibilities.
- Stakeholder groups' institutional capacity: Many stakeholder groups plan to take on extensive management responsibilities. But they may not have characteristics in place (such as nesting, graduated sanctioning, or collective choice arrangements) that would help them successfully absorb the challenges involved in these activities.

The stakeholder group management approach also faces external challenges:

- Stakeholder groups' legitimacy as representative institutions: stakeholder groups are criticized for not including all parties interested in fisheries management (e.g., recreational, customary Maori, and environmental interests). Without including a voice for "non-industry" parties the existing stakeholder groups (and even the entire approach) could lose legitimacy as it comes to be seen as "industry capture" rather than "co-management."
- Change in government support: Presently, the stakeholder group management approach enjoys strong support from the government. While this approach is new, and groups are gaining recognition, this approach will be susceptible to changes in government support.
- Threat from environmental change: Environmental changes, such as a sudden stock collapse or the endangerment of a by-catch species could force this new regime to face a crisis before they have fully developed their management abilities and trust – between each other and within groups. This could call the whole management approach into question.

There is room for optimism, however, because the industry and government has indicated a commitment to making stakeholder management work. Furthermore, as the stakeholder group approach develops a track record and increases in institutional strengths, its susceptibilities to threats will reduce considerably.

Another source for some optimism is the changes documented between the 1999 and the 2001 stakeholder group surveys. These show that groups are becoming more interested in addressing the complex management tasks (such as addressing compliance issues) and are engaging in more interactions with non-commercial fishery interests. This steady change offers additional reason for optimism about the stakeholder groups ability to both grow into roles of increased responsibility, and to more constructively interact with other interests. Over time, this may help reduce legitimacy concerns, and help the development of a true co-management regime.

While the approach is fragile, this fragility is largely due to its newness. The supportive environment should help it grow into a more robust approach, provided the areas for action identified in this paper are addressed in the near term. The degree to which this support is present, and the willingness of stakeholder groups and the Ministry to take on some of the more challenging aspects of co-management may well determine the success of this new institutional structure.

Conclusions

This paper examined the development of fisheries co-management using the case of stakeholder group management in New Zealand's fisheries. Results from 1999 and 2001 mail surveys of stakeholder groups were used to gather insights into the continuing institutional development of both stakeholder groups and the co-management regime. This case has important policy and theoretical implications for the use of co-management as an approach to fisheries management.

Policy Implications

In the last few years, stakeholder group management in New Zealand has made remarkable strides. Stakeholder groups appear to be making the transition from advocacy organizations to management organizations. This transition is best illustrated by increasing interest in the "more difficult" management activities like monitoring and enforcement. However, much work remains. There is a lack of congruence between the literature's vision of a successful co-management approach and the realities in New Zealand. Nonetheless, given the constraints of the 1999 legislation, the literature offers ways of increasing the robustness of stakeholder groups:

♦ Creating a more inclusive voting structure to increase the internal legitimacy of stakeholder groups within the entire commercial fishing industry. Some groups (such and Northern Inshore Fish Management Company) are already addressing this issue. This could take various forms, including: switching voting structure from one ton = one vote to one member = one vote, or one boat = one vote, or splitting votes between harvesters and quota owners. However, This is not a consequence-free change. Switching the voting structure away from a tonnage basis would have other important and potentially detrimental effects. As Townsend (1995) argues, cooperative organizations create a shorter time horizon for members as costs are distributed immediately, but distribution of benefits will depend on a later (uncertain) vote. Thus, a large number of smaller risk-averse members can shift the entire organizations' interest to a shorter time horizon. Townsend applies this to fishery stakeholder groups by noting "In as much as many fisheries face the task of investing in stocks through deferred harvest, cooperative governance seems especially unsuited to the task at hand. … [T]he difference in time horizons of corporate owners versus cooperative voters is likely to be clearest." (43)

♦ Increase the role of non-quota owning fishing interests – by including them in the stakeholder groups, or by creating a formal relationship and consultation process. Such actions would increase external legitimacy by providing a voice for non-commercial interests. Or, as an alternative, more management powers could be shared with the Ministry, and the Ministry could provide a more formalized process for including non-commercial interests in the decision-making process.

♦ For in-shore fisheries where spatial context is important, nesting issues need to be addressed. One way to do this would be to use sub-groups to build local port relationships and address local issues, rather than subject-specific concerns. (Jones, 1998: 24)

♦ Stakeholder groups need to continue building institutional capacity, and slowly taking on management responsibilities as their capacity grows. The Ministry can help this process by carefully assessing how much management responsibilities individual groups are capable of taking on, and not rushing the delegation of powers.

♦ It must be remembered that (as presently structured under law) this is a co-management regime rather than a self-management regime. Both stakeholder groups and the Ministry must carefully consider which management tasks are best maintained by the Ministry, and work to ensure that the Ministry's institutional capacity is not eroded away to the point of becoming ineffective.

Such steps would strengthen ties within the whole fishing community, and increase the resilience of stakeholder group's management as a co-management institution.

The analysis based on the design criteria for long-lived institutions shows that important characteristics (such as collective choice arrangements, monitoring, graduated sanctions, and nested enterprise) are not fully developed. Thus, stakeholder group management at this stage of development is fragile, and needs support if this approach is to take on the responsibilities envisioned for it. Key issues that will need to be addressed include: relations with and participation of outside interests (customary Maori, recreational fishers, and environmental interests); collective choice arrangements that provide a voice for all on-the water fishers; and increased monitoring and sanctioning activities. With continued evolution of stakeholder groups over the next decade, continued monitoring and analysis of this institutional system should be an important priority for the natural resource management and institutional analysis communities.

Theoretical Implications

As was described in the theoretical overview, co-management in New Zealand is an important departure from the descriptions of co-management usually seen in the literature. The differences between the literature and the stakeholder group approach have important theoretical implications. The literature has focused on co-management as a variety of arrangements that combine degrees of community and bureaucracy-based management. In this case, co-management has developed out of a market-based approach. Co-management is a broad array of institutional arrangements, in which management responsibilities are shared between government and users. Thus, New Zealand's adoption of stakeholder group management represents a shift from co-management literature predictions. Future study of the continuing evolution of stakeholder group management in New Zealand is important not only for increased policy development but also for increasing our theoretical understanding of the nature and development of co-management regimes.

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THEME H: Future Paths for Rights Based Fisheries Management

The Challenge of Building Successful Stakeholder Groups: New Zealand's Experience in Developing a Co-Management Regime

PAGE 14

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