Bureaucratic Management versus Private Property

ITQs in New Zealand after Ten Years

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The introduction in 1986 of the Quota Management System (QMS) to New Zealand's 29 main commercial fisheries illustrates the potential—unexplored up to that time—offered by private property and market forces to fisheries management.

> In line with its overall economic policy, it has been the government's declared intention to bring market forces to bear in the realm of fisheries management. The government initially had some difficulty in accepting that the introduction of property rights into the fishery constituted a market solution, but after acceptance the concept was grasped firmly and supported strongly; the goal was to adopt property rights in a comprehensive manner through the introduction of individual transferable quotas. (Clark, Major, and Mollett 1989: 118)

The adoption of a rights-based approach to fisheries management has a number of theoretical advantages. A key virtue of perpetual private property rights is that owners are confronted with the economic consequences of their behaviour. Even consequences of management decisions expected to appear only in the long term are reflected immediately in the market value of the

property right. Rights owners face incentives to maximize the present and future values of their harvesting rights. Given that fisheries are a renewable resource, the goals of economic efficiency and resource sustainability are therefore closely aligned. If these incentives can be effectively harnessed, the government can remove itself from traditional regulatory activity in favour of decentralized management by groups of rights holders.

In this chapter, I shall appraise some of the actual incentives faced by both bureaucrats and rights holders in New Zealand since 1986. In particular, I shall focus on factors that undermined the security of the ITQ property right and the theoretical incentives sometimes attributed to it. Some common arguments against ITQs also are reviewed.

The Quota Management System and its incentives

Four main factors undermined the theoretical incentives provided by secure private property rights when ITQs were first allocated in 1986: (1) the legislative context encompassing the QMS; (2) the initial specifications of the ITQ property right; (3) the uncertain relation between ITQ and other rights (particularly those of the Maori); and (4) practical impediments to collective action. While the introduction of the QMS is regarded by all sectors in New Zealand as a great step forward in fisheries management, it is possible with hindsight to see the weaknesses in the original regime with clarity. This is not to say that all of the factors above could have been eliminated through some clever initial design work. Issues such as the resolution of long-standing and major claims by the Maori to commercial fisheries have their own momentum and dynamics. More generally, major changes to property rights affect fundamental relationships between groups and individuals within society. The passions aroused by these changes can be strong, and, when expressed politically, can cause unpredictable policy alterations.

The legislative context of the QMS

Fisheries legislation in New Zealand to date has not included clear statements of purpose. The Fisheries Act 1983 consolidated the laws relating to fisheries management enacted since the Fisheries Act 1908. This, in turn, consolidated the fisheries legislation that commenced with the Oyster Fisheries Act 1866. A quotation from section 89, which is the heart of the current Fisheries Act, illustrates this point:

> 89. Regulations - (1) The Governor-General may from time to time, by Order in Council, make regulations for all or any of the following purposes:
>
> (a) Generally regulating fishing in New Zealand and New Zealand fisheries waters . . . (Fisheries Act 1983)

The Act goes on for over five pages listing the various types of protective or distributive activities that may be regulated. No clear boundaries constrain the use of regulations.

Hard working Governors General over the years have made some 4,000 regulations, which are still current. This centralized process was perceived as unresponsive to local needs or circumstances, and, to introduce public accountability and consultation into this process, the 1983 Act charged the Ministry of Fisheries with producing comprehensive regional fisheries management plans. Fisheries management plans did little to solve the information problems of the centralized command structure of traditional regulations as they had to be approved by central government. In addition, they were both slow in production and difficult to alter. Work on these plans continued for over five years after the introduction of the QMS in 1986, but none have been implemented although the Ministry is still charged with their completion.

The QMS and the allocation of individual transferable quotas (ITQs) did not supersede any of the existing legislative framework in New Zealand, but was regarded by bureaucrats as an additional management instrument. In particular, no legal provision was made for management by quota owners, and fisheries enhancement through re-seeding requires a special permit. Consequently, the advent of the QMS did not change the self-image of the many employees of the Ministry of Fisheries who considered themselves the nation's fisheries managers.

Appreciation for the constraining impact that secure private property rights can have on the scope of central planning and regulation grew very slowly. This is illustrated by table 1, which shows the number of fisheries regulations passed each year before and after the introduction of the QMS in the Auckland Fisheries Management Area.

In reality, the reduced level of government intervention theoretically possible under a quota scheme has not appeared. While the existence of ITQs themselves is regarded as secure, the precise extent and value of the bundle of rights represented by ITQs still remains somewhat uncertain.

Table 1 Number of fisheries regulations passed before and after the introduction in 1986 of the QMS in the Auckland Fisheries Management Area[A]

	1976–1980	1981–1985	1986–1990	1990–1995
Finned Fish				
Area Closures	19	50	1	104
Method Restrictions	19	18	0	11
Miscellaneous	10	84	77	59
Quota	6	20	32	23
Reporting	0	14	70	34
Unfinned Fish				
Scallops	10	8	1	2
Rock Lobster	3	11	16	8

[A] Kim Walshe, Presentation to New Zealand Fishing Industry Association conference, 1996. Source: Ministry of Agriculture and Fisheries.

Initial specification of the ITQs

In addition to the threat of re-specification of harvesting rights through regulation, recreational closures, or the establishment of marine reserves, the incentives potentially available from secure ITQs were undermined in three ways by its initial specifications.

1 ITQs were originally defined as a fixed tonnage of fish per year rather than as a percentage of the total allowable commercial catch (TACC). If the TACC could be increased, the government was entitled to sell additional ITQs (approximately NZ$120 million worth of quotas for hoki (*Macruronus novaezelandiae*) and orange roughy (*Hoplostethus atlanticus*) was sold in 1987 and 1988). Conversely, if the government wished to reduce a TACC, it was required to buy back ITQs. At the time of its inception, many commercial fishers expressed a preference for the "certainty" of tonnage rights.

2 Owners of ITQs were charged resource rentals to be calculated by a complicated formula. These rentals were intended to remove "super-profits" from ITQ owners. Initially, the government carried the full burden of the risk associated with the

environmental state of the quota fisheries. Perhaps it was believed that the cost of underwriting this risk could be minimized through the judicious setting of resource rentals to suppress quota market prices. This was not to be, as the industry vigorously contested attempts to raise resource rentals, and the complexity of the resource rental setting formula provided fertile grounds for dispute.

3 Quotas for rock lobster (*Jasus edwardsii*) were allocated with a 25-year term in order to facilitate possible settlement of future claims by the Maori. The indication that future re-allocation of rights was a possibility promoted uncertainty in that fishery, which may have led to short-sighted behaviour towards the end of the quota term.

In 1990, the government faced large compensation payments in order to reduce the TACCs for orange roughy, hoki and rock lobster. The Fisheries Act was altered so that ITQs were defined as a proportion of a TACC, rather than a fixed tonnage, and approximately NZ$69 million in compensation was paid to affected quota owners over the following four years. This change transferred to the quota owners the risks associated with the resource, although ownership of ITQs did not include the right to manage or enhance fisheries.

Furthermore, some still doubted that quota owners could capture any significant benefits because of the resource rental mechanism (the government could also expropriate returns from industry investments through the same mechanism). Resource rentals were scrapped in 1994, at which time all 25-year ITQs were changed to perpetuity.

Maori claims to commercial fisheries

The existence of Maori Fishing Rights and attendant Maori claims to commercial fisheries also undermined the classical incentives associated with private property. Sir Tipene O'Regan (Maori fisheries negotiator and chairman of the Treaty of Waitangi Fisheries Commission) recently stated:

> When we had the commons out there, you went out and the fish belonged to no one until they were caught. The whole model of the commons, from our point of view, was a device, driven by the majority culture, for preventing particular

> Treaty property rights being given effect to. It was thus a great irony when this country moved towards a model of property rights in fisheries under a quota management system. Although it was a model driven by a whole lot of notions, principally sustainability, it was very much centred on notions of property as far as the fishers themselves were concerned. Even though the quota management system was not invented, developed and conceived to give effect to Treaty rights it provided, conceptually, the key to that historic resolution. In New Zealand history that may yet stand as its greatest triumph. (O'Regan 1996)

A rights-based approach to fisheries management has a ripple effect upon fisheries users. The clarification of the rights of one sector compels the examination of the rights and claims of other sectors. In New Zealand, the allocation of ITQ property rights provided an opportunity for Maori to mount a stronger legal challenge against the Crown for damage to Treaty rights. Previous government actions had the practical effect of alienating Maori from the ancient fishing rights secured to them by the 1840 Treaty of Waitangi.

Although it was not the intention of the promoters of the QMS within the industry and government, the Crown was catapulted into a major negotiation of treaty rights that continued from 1987 to 1989. The negotiations caused great anxiety among quota owners, who feared that the government might discharge whatever obligations it was found to have to the Maori at the expense of quota owners. This did not occur as, when the government offered 10 percent of all quotas to the Maori as part of an interim settlement, this 10 percent of the quotas were acquired from their owners through willing-seller-to-willing-buyer purchases.

The creation and allocation of ITQs made negotiation over Maori fisheries claims unavoidable, but it also provided a means of settlement. All commercial rights, whether held by Maori or non-Maori, were of the same currency. Though integration of Maori into the commercial rights framework provided by the QMS was troubling to the owners of ITQs, it now provides one of the primary sources of security. Extensive Maori ownership of ITQ was a crucial factor in the abandonment of the original resource rental mechanism.

An aside on generic commercial rights In the last few years, there has been intense debate among Maori tribes over how the ITQs delivered by the Crown to Maori should be divided among the approximately 70 tribes. It is widely accepted that tribes have a special interest in the fish off their coastlines. However, quotas can be taken anywhere within a quota management area (QMA), which is normally a far larger area than can be associated with a single tribe. Depending on the species, the New Zealand exclusive economic zone (EEZ) can be subdivided into one to ten QMAs. Consequently, the location and extent of a tribe's territory (*rohe*) will influence its ultimate claim on the amount and type of Maori quota it receives, but future harvesting activity will not be confined to that *rohe*. Maori customary (i.e., non-commercial) fish harvest will be confined to the tribal *rohe*, but commercial harvest can take place anywhere within the relevant QMA that maximizes returns.

The QMS provides to holders of ITQs other theoretical opportunities to alter traditional patterns of harvesting to general economic advantage. Once ITQs are allocated (in proportion to the historical catch of licence holders), the QMS does not provide special protection or rights to industry subsectors such as fishers using particular fishing methods. There are, however, some long-standing regulations that impede rationalizations of effort and eliminating such regulations would increase the value of quota. Fishers now protected from competition by these regulations stress or invent rationales based upon sustainability for their retention.

One of the striking features of salmon management within British Columbia is the plethora of site and method controls affecting industry and native Indian harvesters. To an outsider, this appears to have two consequences: it creates sub-groups of harvesters with hostile interests to each other, and it is economically inefficient because salmon are not harvested at times and by methods that maximize their commercial value.

If it is ultimately decided that an objective of salmon management is to maximize the value of the salmon fishery, it will be necessary to break these two patterns. New Zealand's experience shows that generic ITQs can be successfully allocated in multi-method fisheries, and that the commercial aspect of indigenous fishing rights can be accommodated within that generic framework. Because ITQs are property rights in fish and not in gear types, harvesting technology and other investment decisions can be made with few distortions.

Impediments to collective action

It is a common observation that we change our behaviour in response to incentives only when we perceive a practical and effective course of action that will improve our situation. Those with experience of the harsh realities of fishing are especially resistant to futile gestures. In New Zealand, we have been slow to appreciate that ITQs confront the individuals, not only with the consequences of their own actions on the fishery, but also with the consequences of the actions of all involved in the fishery. In this sense, ITQs remain common property rights. Effective management actions, whether it be re-seeding, area or seasonal closures, or other conservation measures, require collective action. The allocation of ITQs created notional communities of interest, not actual or functioning communities of interest. To understand why such functioning communities have been slow to emerge, we must retrace the evolution of the QMS and the opportunities available for management initiatives by rights holders.

It is revealing to pose the question, "who managed New Zealand's fisheries at various times over the last decade?" Prior to 1986, the answer was unambiguously "the government." This answer did not change with the introduction of the QMS and government officials perceived the QMS and ITQs as additions to their fisheries-management tool kit. In turn, many owners of ITQs (not unreasonably) viewed ITQs as a harvesting right subject to considerable government constraint or re-definition.

The move to proportionality in 1990 and the subsequent difficulties in introducing the regional fishery-management plans produced by the ministry of Fisheries after extensive public consultation, changed perceptions. Ministry employees became conscious of the constraints that ITQs placed upon their management powers, though these constraints did not greatly alter their role. The settlement of Maori claims in 1992, and the elimination of resource rents in 1994, provided to owners of ITQs incentives to determine management strategies for their fisheries. These incentives were strengthened by the introduction of full-cost recovery for government fisheries-management services in 1995.

The late 1990s are characterized by a curious limbo. On one hand, bureaucrats are still equipped with a full range of fisheries regulatory mechanisms but (with the exception of setting TACCs) are increasingly loath to employ them without the support of a consensus from rights holders. On the other hand, quota owners

face increasingly strong incentives to manage their own affairs but lack mechanisms to make rules, collect funds, or purchase management services except on a totally voluntary basis.

Although they do not currently enjoy the legal right to manage or enhance their fisheries, quota owners have begun to organize themselves into management companies. Depending on the fishery involved, these companies have a number of purposes. At this stage, they appear to have four primary functions. First, they facilitate the collection of funds to finance fisheries-management activities such as research or re-seeding and manage the delivery of such services. Second, they make fisheries-management rules designed to achieve effort spreading or seasonal closures and to impose sanctions for non-compliance on company shareholders. Third, they represent the interests of shareholders in the government processes that determine the fisheries-management services required by government and set the TACCs. Finally, they defend against erosion of harvesting rights and promote the expansion and development of management rights.

The introduction of cost recovery (NZ$37 million in 1995/96) stimulated the establishment of companies of quota owners, who believed that considerable efficiencies were possible if they could purchase directly in a contestable market the fisheries-management services specified by government. At the moment, quota owners are forced to purchase most fisheries management service from government monopolies; this is a market of a kind but not yet a contestable market.

The establishment and operation of companies of quota owners requires that several difficult issues be addressed. Groups of ITQ owners, when in the process of forming a company, must decide who to include—e.g., they may decide to include one species within a quota management area or several species within a quota management area. They also need to decide funding mechanisms, possible sanctions against shareholders, and voting rules, including those that protect minority interests. At present, the companies tend to operate by consensus and many quota owners, because of the rigidity of regulatory alternatives, adopt a pragmatic attitude towards voluntary rules and the compromises required to reach consensus. However, there are strong incentives to take a "free ride" and much debate is directed at the question of the appropriate powers of coercion (if any) that companies should be able to exert over members to ensure compliance with

management rules. The most successful management company has statutory powers to collect funds for purposes outlined in special legislation.

Analysis of community impacts

I am not aware of any studies of the impact upon communities made before or after the establishment of the QMS. This is not an oversight but rather the result of the youth of the New Zealand fishing industry and the absence of long-established communities solely dependent on fishing. In 1981, the export value of New Zealand fisheries was NZ$100 million; it is now approximately NZ$1.3 billion.

Even in fishing communities such as the Chatham Islands, few distributional issues were anticipated as ITQs gave harvesting rights that were allocated to those with a current commercial fishing permit on the basis of their historical catch, commitment to, and dependence upon the fishery. In other words, the pattern of allocation of ITQs had been set through the pattern of allocation of commercial fishing permits and subsequent harvesting activity under those permits. Moreover, although the fish stocks on which the Chatham Islands depended—particularly rock lobster—had been depleted, Islanders were still capable of earning satisfactory incomes. Finally, it was generally recognized that a reduction in harvesting effort was needed in many inshore fisheries and that allocation of ITQs provided compensation for those individuals who chose to exit the industry.

New Zealand fishers did not feel themselves part of a community in the sense that they were subject to meaningful obligations and responsibilities that derived from their attachment to a particular port. New Zealand villages and settlements did not have a well-developed proprietary feeling towards particular fisheries that extended to the development and imposition of local rules by the community itself. The companies of quota owners now being established are a vehicle for such activity, but in countries where functioning fishing communities are an historic fact, their existence could be recognized in the allocation of ITQs, and the role that the community has in regulating the activities of rights holders could be retained.

Industry consolidation

In 1986, the effects of the QMS upon the distribution of wealth were underestimated by bureaucrats because of they believed

that resource rents could tax away "super profits" and that quotas would trade for low prices. The tradable nature of ITQs allowed licence holders to capitalize the projected net income to which a non-tradable licence had entitled them. When quota owners sold out, fishing companies that were vertically integrated (i.e., those involved in fishing, processing and marketing), frequently offered the best price and, consequently, there was some consolidation of quota ownership.

Consolidation has taken place for two reasons. First, vertically integrated companies have better access to capital markets than owner-operators. Banks have been reluctant to lend against quotas because it may be forfeited following conviction for many offenses. Further, banks and other lenders cannot register interests against quota since, unlike registered land titles in New Zealand, the quota registry does not provide for the registration of security interests indicating that the quota has been used as collateral against a loan. Second, ITQs act to some extent as repositories for value created anywhere within the fish production and marketing chain that is unable to be captured by its creator.

The trend towards consolidation has been less dramatic than is usually assumed; the share of quota owned by the top 10 companies increased only slightly during the period from 1986 to 1996. It is also easy to overstate the trend towards consolidation if the impact of the expansion of orange roughy, hoki, squid (*Notodarus gouldi*) and other deep water fisheries is not appreciated. The number of smaller vessels in the full time domestic fleet has been surprisingly constant over the past decade, and the total number of vessels, full time employees and quota owners have all shown increases during that time. (See table 2.)

Small fishers and the QMS

Contrary to popular opinion, the experience in New Zealand proves that ITQs are not detrimental to the interests of small fishers. The evidence cited to support the popular opinion is the removal of part-time fishers from the commercial fishery during the 1983/84 season. By 1981, the government realized that its subsidy programs designed to expand domestic harvesting capacity in the 1970s had led to overfishing of prime inshore species and overcapitalisation within the inshore harvesting sector. A moratorium was placed on the issue of new licences in 1982 and, as a further step in halting and reversing the expansion of effort, the 1983 Fisheries Act allowed for the cancellation of unused licences

Table 2 Some Changes in New Zealand Fishing Industry, 1986 to 1995

	1986/87	1994/95
Fishing industry employment	7900	9838
Number of quota owners nationally	1356	1733
Number of quota owners, Auckland region	902	855
Holdings of top three quota owners	28%	44%
Holdings of top ten quota owners	67%	68%
Number of fishing vessels	2331	2768
Seafood exports (1986 dollars)	NZ$657 million	NZ$896 million
Resource rentals/cost recovery (current $)	NZ$25 million	NZ$37 million

From Dewees, C.M. (in press), *Ecological Applications 1997*. Used by permission.

and licences held by part-time fishers. As a consequence, 2,260 licences were cancelled.

It is a mistake to view this action as a planned or necessary precursor to the introduction of ITQs three years later. ITQs were not under consideration at that time and analysis focused on the possible application of boat buy-back schemes, though some feared that buying vessels from part-timer fishers would prove expensive and remove little effort. And, while it is probably true that the administration of fisheries rights and catch data is easier if there are fewer fishers, this is true for all administrative systems and not only for those dealing with quota fisheries. The administrative costs of accommodating those part-timer fishers with catch history in the allocation of ITQs and the subsequent operation of the QMS was not a significant barrier to its introduction.

Costs of operation

Common charges levelled against the QMS are that it is costly to operate, that the catch reporting systems are expensive, that research costs to support the setting of the TACCs are high, and that fisheries enforcement must be upgraded. Quota options are rejected on cost-benefit grounds, although it is not self-evident that regulatory regimes have a lower demand for information or research than rights-based alternatives. A regulatory regime is

not a substitute for knowledge; nor is it a guarantee that regulations are complied with.

It is the net benefits of alternative management systems that should be compared rather than their costs. Net benefits are difficult to assess, but New Zealand's QMS gives some indirect indications of satisfactory performance. The New Zealand fishing industry sells 90 percent of its products to export markets, receives no government subsidies, and pays the full cost of government fisheries-management services. On that basis, the net value of the New Zealand fishing industry is positive and the NZ$2 billion of quota value represents real economic worth rather than capitalized subsidies. Accordingly, there are strong incentives to ensure that the Quota Management System is cost effective, and a growing appreciation that sound administrative systems, targeted research, and effective compliance are investments rather than taxes.

Conclusions

The main conclusion that British Columbia can draw from New Zealand's Quota Management System is that it works and enjoys widespread support. It is possible to say that a number of major mistakes were made during its conception and introduction, and there have been sporadic legislative amendments to address problems arising from those mistakes.

The last decade has been a period of continuous challenge and change for New Zealand's fishing industry, which is currently grappling with the introduction of a completely rewritten Fisheries Act plus comprehensive cost recovery for fisheries management services. Yet this period of flux and uncertainty has been accompanied by profitability, unparalleled levels of investment and generally improving availability of fish. The inshore fish stocks about which there was concern in 1986 are now regarded as being in sustainable and, frequently, in improving condition. The underlying mood today is one of confidence in the future and there is agreement that more species should be managed under the Quota Management System (QMS).

The main reason for this confidence is that ITQs have emerged stronger and better specified from every major crisis since the introduction of the QMS. Although rights to use the fisheries for recreation, customary Maori fishing, and aquaculture have yet to be integrated properly with the QMS, there is growing general recognition that this should be done. It has taken most of the last

decade for ITQs to outgrow their experimental and tentative status but they are now viewed as irreversible and secure.

In 1986, Parzival Copes commented:

> The advocates of individual property probably have made too much of the property rights aspects of the scheme. The rights to the fish stock bestowed by the individual quota—even in the form of ITQ—are still far from fully specified property rights. (Copes 1986, p. 288)

As described in this paper, that was certainly the case in New Zealand where ITQs were initially a feeble property right. Copes concluded:

> Experience so far suggests that we should be non-dogmatic in our choice of management technique and that we should select from the array of available fisheries management devices, the combination that is most beneficial and least deficient in any particular set of circumstances. Above all, we must reconcile ourselves to the fact that the best *possible* solutions will still be flawed. (Copes 1986, p. 290)

We do occupy an imperfect world, but the experience in New Zealand during the last ten years has shown that ITQs are not just another regulatory option. If the positive incentives of ITQs are to be fully manifest, property rights must be secure and specified in such a way that rights holders can make meaningful management decisions. Rights-based and regulation-based approaches to fisheries management are antithetical to each other; they cannot be pursued simultaneously.

Half-hearted attempts to establish property rights will not change into fish farmers most of those harvesters who are now exploiters of resources in the short term. Results are not seen overnight because fishers remain mistrustful of the government while a record of government support and protection for the new property rights is accumulated. For this reason, the hedge-your-bets approach advocated above predestines failure because it suggests that what is done can be undone.

Finally, a comment on the British Columbia salmon fishery. The QMS was established in New Zealand in response to a crisis of overfishing and overcapitalization in some fisheries. Major in-

stitutional reforms often come about only through the impetus of a crisis. However, in any crisis, there is a temptation to address symptoms or pressing problems. Whether a fishery is in good or poor condition, the same general issues apply to its management. Who should manage the fishery? What incentives should they face? What powers should they have? To the extent that such fundamental questions were not fully analyzed prior to 1986, we in New Zealand have since had cause to ponder them. The principles underlying the QMS have stood up to that examination, and that is why there is widespread agreement in New Zealand that all commercial fisheries—including presently undeveloped fisheries—should be managed under the QMS.

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