

# **A Regulatory History of New Zealand's Quota Management System: setting targets, defining and allocating quota.**

Authors: Gina Straker, Suzi Kerr and Jo Hendy (Motu Economic and Public Policy Research, New Zealand).

## **ABSTRACT**

In this paper we define the regulatory structure of the New Zealand Quota Management System (QMS) and document key changes in its operation over time. We document the relevant legislation that affected the quota market from the Fisheries Act 1983 forward. We describe how the QMS operates in New Zealand and how the regulations have evolved and changed to address specific issues as they come to light. We discuss the setting of aggregate targets and the definition of quota and summarise the process of allocating quota to fishers in New Zealand. This paper is part of a larger project that will also discuss market structure issues such as rules regulating quota trades, concentration of holdings, foreign ownership of quota, 'banking' provisions, and funding.

The paper either directly describes the legislation or, for more detail, provides references to key resources. This will provide researchers with a reference document on the New Zealand fisheries regulatory structure as a basis for future empirical work. The version of the paper presented here is an abridged version. A full version of the working paper is available at: [http://www.motu.org.nz/nz\\_fish.htm](http://www.motu.org.nz/nz_fish.htm). This project was funded by the New Zealand Ministry of Fisheries and Resources for the Future.

Keywords: fisheries legislation, quota management system, New Zealand.

## **Introduction**

The New Zealand quota management system (QMS) was created in 1986. New Zealand was not the first country to introduce an individual transferable quota (ITQ) system, but it was the first to use one on such a broad scale in a multi-species fishery. Most countries manage fisheries by controlling inputs, such as the number and size of boats and types of fishing equipment used. The main disadvantage with controlling inputs is that controls on one input can usually be avoided by substituting another input and overfishing is not necessarily prevented. Input controls also tend to impede the development of more efficient technology and thus make the fishing industry less competitive.

In this paper we briefly present the supporting theory for managing fisheries through use of an output control, quota. We document the New Zealand experience of quota management since its inception in 1983, explaining the process for decision making, and highlighting the procedural and legislative changes that occurred in response to management difficulties. We focus on issues that arose with the initial and subsequent allocations of the quota, and the setting of the total allowable catch for each stock. We also consider why the government shifted from allocating quota as tonnes to allocating it as a set percentage of the total allowable catch.

This is part of a larger project that aims to define the regulatory structure of QMS and to document key changes in its operation over time. The complexity of the systems and the frequent changes since their inception require clear understanding of the institutions involved before good empirical work can be done. This project will provide researchers with a reference document on the New Zealand fisheries regulatory structure as a basis for future empirical work.

## **THE BASIC THEORY BEHIND QUOTA MANAGEMENT SYSTEMS**

With absolutely no regulation, a fishery is an open access resource. If the group of people who can fish are limited to a discrete group, the resource becomes the common property of that group. In either case, with no further regulation or institutions each fisher has no reason to take account of the effect of his actions on other fishers or on the future state of the fishing stock. Others will feel the vast majority of future impacts. This problem can lead to the 'tragedy of the commons'. The risk is greatest for commercial species where the fish are valuable and the costs of extraction are reasonably low. Other species may be protected simply because they are economically unattractive to catch.

An ITQ system sets a total allowable catch (TAC) for each fish stock for each year. Regulators generally try to set TAC equal to the maximum sustainable yield (MSY) level. Some of this may be allocated to recreational and/or indigenous fishers so that the total allowable commercial catch (TACC) is somewhat lower. Once the TACC has been set, the total catch needs to be allocated among the potential commercial fishers. This is generally done by allocating TACC to existing licensed fishers based on historical catches. The 'quota' allocated can be 'in perpetuity' in which case these fishers receive the right to fish that quantity forever. Alternatively it could be on a year-to-year basis or for some finite period of time. In addition, the quota could be in the form of a fixed number of tonnes of fish or as a percentage share of the TACC. In the latter case the volume of fish the quota entitles its bearer to catch varies from year to year. They can then sell these quotas to other fishers or new entrants if they want. They could also buy more. These quotas are called individual transferable quotas (ITQs).

The advantages of a well functioning ITQ system are that the harvest level is sustainable, the harvest is allocated efficiently across vessels so resources are not wasted, and fishers have incentives to make good investment decisions (not to buy too many or the wrong sort of vessels). Fishers have an incentive to catch the fish at the times of year and in the form (e.g. top quality that can be sold fresh rather than poorer quality that is used for fishmeal) that is most efficient based on fishing costs and market prices. They are not in competition with other fishers because they know the other fishers' activities are limited so cannot affect them much.<sup>1</sup> They can choose where to catch their fish more effectively; they are not racing to get the fish quickly before the season closes. An ITQ system can in theory maximise the rent from the resource for society as a whole. The government can claim some of this and the rest can be left for the industry. Because of this rent, fishers have a vested interest in maintaining and enforcing the system. Although it is not self-enforcing, enforcement authorities will have the support of the fishers.

The ITQ system limits the total catch to a chosen level. This is an important component of ensuring sustainability of the stock. An ITQ system is not sufficient for optimal management however. It limits only total catch. Additional regulations may be needed to control the details of exactly where (not in breeding grounds), when (not during spawning), how (not using destructive techniques), and what (not too small) fish are caught. A quota management system combines ITQs with a series of other regulations.

Of course, in reality ITQ systems are more complex than this. Few fisheries involve one homogenous stock over an area. New Zealand fisheries mostly involve multiple species with complex interrelationships. It can be very difficult to estimate the optimal fishing level both because the stocks are unstable and because there is often very little data. In addition TACCs tend to be influenced by political and sectoral considerations. Finally, just because an ITQ system can lead to efficient harvesting in theory does not mean that it does in reality. Many complexities can arise in the economic interactions among fishers and between fishers and the rest of the industry. More sophisticated theoretical modelling needs to be backed up with empirical analysis to determine how effective ITQs really can be.

## **INTRODUCTION OF THE QUOTA MANAGEMENT SYSTEM**

The Fisheries Act 1983 initiated the quota management system for New Zealand's deepwater and inshore fisheries. To improve management, provide for a sustainable harvest, and promote stability and efficiency within the industry, the government proposed additional regulations in the Fisheries Amendment Act 1986. These included effort controls, competitive TACCs (allowing for a proportion of the TAC to be allocated to non-commercial users), and transferable ITQs for all the main commercial fisheries, both inshore and deepwater. The Act incorporated the successful existing deepwater trawl policy and ITQ regime into its overall fisheries management framework. The Amendment allowed the deepwater quota to be allocated in perpetuity and become fully transferable so that companies could achieve a suitable mix of fish for their processing and marketing needs; the less significant commercial species continued to be managed by input controls.<sup>2</sup>

Fishers supported the proposed QMS, hopeful that catch reductions would have long-term benefits and industry restructuring would provide them with sufficient returns from lower harvest levels.<sup>3</sup> The QMS was viewed as being effective and economically efficient; total catch could be regulated and fishers could choose the most efficient combinations of fishing gear, season, and effort to harvest the fish at least cost.<sup>4</sup>

---

<sup>1</sup> They will still compete for the best fishing grounds.

<sup>2</sup> Ackroyd et al. (1990), Nightingale (1992), Le Heron (1996), Clement (1997), Sharp (1997).

<sup>3</sup> Clement (1997).

<sup>4</sup> Cullen and Memon (1990).

## SETTING AGGREGATE TARGETS

The quota management system controls the total commercial catch from each fishstock within New Zealand's EEZ while allowing quota owners to buy, sell, and lease their catching rights and to choose the time of year they harvest their catches within these limits. It controls fisheries activity through output controls (by setting catch limits).<sup>5</sup>

The first conceptual step in a property-rights based fishery is to define the total level of allowable catch to be allocated. The total allowable catch is defined in the Fisheries Act 1983 (FA83 s2(1)) as “the amount of fish, aquatic life or seaweed that will produce from that fishery the maximum sustainable yield, as qualified by any relevant economic or environmental factors, fishing patterns, the interdependence of stocks of fish, and any generally recommended sub-regional or regional global standards”. It is the quantity of fish that can be taken for each fish stock by both commercial and non-commercial fishers (Maori, recreational, and other non-commercial parties) per fishing year. The total allowable commercial catch is the tonnage portion of the TAC set aside for commercial quota once non-commercial interests have been considered, and it must be set for each species or group of species in each defined area.<sup>6</sup>

In 1986, the Ministry of Agriculture and Fisheries undertook stock assessments (using research trawls) of all the 21 inshore and 8 deepwater commercial species that were to be managed under the QMS.<sup>7</sup> This was to enable identification of separate fishstocks based on the known biological distribution of each commercial species, as well as to determine the quota management areas and their TACs.<sup>8</sup> Previously there had only been limited stock assessment research that gathered basic biological and distribution data on commercially viable species.<sup>9</sup>

### Ministerial TACC Reviews & Stock Assessments

Every year the Minister sets the TACC for each fish stock based on recommendations from the Ministry of Fisheries (MFish) and a review of current stock status and sustainability. Annual reviews of fish stocks have been carried since 1986.

The original MSY predictions used for the TACs in 1986 were imprecise because abundance estimates were not available for most species (particularly inshore) due to insufficient data.<sup>10</sup> The lack of information made it difficult to determine if stocks would recover from over exploitation and move towards a sustainable population levels.<sup>11</sup> The commercial catch limits for the overexploited inshore species were set at levels from 25% to 75% of the pre-QMS levels depending on the biological status and management objectives for each fishstock.<sup>12</sup> Limits for the other species included in the QMS were set at levels equal to or greater than their pre-QMS levels. Natural variations in stock sizes and quota balancing problems (due to bycatch, mainly in the mixed inshore fishery) resulted in an imbalance in the catch mix relative to the available quota, causing catch over- and under-runs relative to the TACC.<sup>13</sup>

Fisheries Assessment Working Groups conduct preliminary reviews of the status of all major commercial fish species' stocks and sustainable yields, based on stock assessments from the previous years research and fisher returns' data. The working groups are made up of members from contracted research providers for the projects to be discussed, commercial fishers and processors, as well as industry research consultants, and representatives of recreational fishers, Maori, and environmental groups. They produce draft Working Group Reports that recommend which fishstocks need further reviewing, and specify research requirements and generic assessment issues for the following year to the Manager, Science Policy at the Ministry.<sup>14</sup>

---

<sup>5</sup> Input controls (restrictions of fishing methods, timing, areas) were still provided for in the Act as sustainability measures (allowed for in Fishery Management Plans in the FA83 *am.* 1986, and in the FA96 Part III).

<sup>6</sup> The definition of TACC was added by the Fisheries Amendment Act 1990 (FA83 *am.* 1990 s28D). Prior to this TAC was equivalent to the TACC, although non-commercial catch was to be taken into account when setting the TAC (FA83 *am.* 1986 s28C).

<sup>7</sup> The Ministry of Fisheries became stand-alone on 1 July 1995.

<sup>8</sup> Sissenwine and Mace (1992). For information on how initial fish stocks were determined, and references to related research, see Colman et al. (1985). Historic research data is maintained by the MFish Data Custodian (currently NIWA).

<sup>9</sup> Annala (1996).

<sup>10</sup> Annala (1996).

<sup>11</sup> Of the 149 commercial fishstocks, only 13 (8.7%) were estimated to be below the MSY: 2 orange roughy, 3 snapper and 8 rock lobster stocks. Thirteen (8.7%) were estimated to be above and 48 (32.2%) at or near the MSY (Major 1999).

<sup>12</sup> Affected fishers going to the Quota Appeal Authority could challenge these limits.

<sup>13</sup> Annala (1996).

<sup>14</sup> Ministry of Fisheries (2002a).

The Ministry then consults with stakeholders about the findings from the Plenary report. Anyone with an interest in fisheries can discuss the proposed management controls for the coming year. The Fisheries Amendment Act 1986 stated that before the TACC could be reduced the Minister must consult with the Fishing Industry Board (FA83 *am.*1986 s28B). The 1990 amendment broadened this to include consultation with such other persons or organisations as the Minister considers are representative of persons having an interest in that fishery, when setting or varying any TACC for any stock, and allow for their interests in that stock (FA83 *am.*1990 s28B(2)). The Ministry collates the reports with the concerns of stakeholders and make their total allowable catch and total allowable commercial catch recommendations to the Minister.<sup>15</sup>

If after the review and consultation the Minister is satisfied that the current catch level is appropriate, the TACC may remain the same as the previous year. If variation to the TACC is necessary, the Minister may increase or decrease the catch level accordingly, and/or make other decisions as deemed necessary to sustain the fisheries and aquatic environment. For most stocks, variations in TACCs come into force on 1 October (the first day of the fishing year).<sup>16</sup> The TACC is set in volume (tonnes) allowed to be caught each year.<sup>17</sup>

### Recreational and Customary Catch

Customary (non-commercial Maori) and recreational fishing are not directly governed by the QMS, but are regulated using input controls.<sup>18</sup> Both customary and recreational catch levels are estimated before setting the TACC for each quota species. The TACC is the remainder of the TAC after considerations are made for the predicted non-commercial catch (TACC=TAC-TANC).<sup>19</sup> Every year the Fishing Assessment Working Groups take into consideration customary and recreational catch information before making recommendations on which fishstocks TACs should be reviewed by the Plenary.<sup>20</sup>

Customary catch refers to the traditional Maori right to harvest and gather seafood.<sup>21</sup> Customary fishing regulations, introduced in the Fisheries Act 1996 (s186), govern non-commercial customary fishing only and the harvest cannot be traded.<sup>22</sup> Traditional customary fishing areas are those of special significance to *iwi* (tribe) or *hapu* (sub-tribe) as a source of food or for spiritual or cultural reasons. Provision for management of customary areas was first recognised by the Maori Fisheries Act (1989), then re-affirmed by the 1996 Fisheries Act. *Taiapure* (local coastal or estuarine fisheries) can be formally declared by lodging a proposal to the Crown.<sup>23</sup>

Larger areas important to customary food gathering (*mahinga maitaitai*) can be established (through the Crown) by *iwi* or trust groups, and commercial fishing is generally excluded.<sup>24</sup> The *maitaitai* is managed by a Tangata Kiaki/Kaitiaki (in the South Island), a Tangata Kaitiaki/Tiaki (in the North Island): *iwi* representatives nominated by the *tangata whenua* (local Maori) and appointed by the Minister. They authorise customary and/or commercial fishing within their *maitaitai*, but are under no obligation to do so if the proposal is inconsistent with the *tikanga* (protocol and practices) of that area. The Kaitiaki has the responsibility of reporting customary catch information to MFish quarterly and commercial catches within 5 days. This information includes: species harvested, quantities authorised and actually harvested and the location of harvesting, and is used to help predict future catch levels.<sup>25</sup>

Fish and Game New Zealand conducts four-yearly surveys of recreational fishers, although the government would like to see improvements in the gathering and analysis of the information.<sup>26</sup> The survey data, along with information on population trends, is used to estimate the future recreational catch.<sup>27</sup> When recent catch data is

---

<sup>15</sup> Clement (1997).

<sup>16</sup> See FA83 *am.* 1990 s28OB-OC

<sup>17</sup> Clement (1998).

<sup>18</sup> The input controls used are daily bag limits (restricting the number of fish recreational fishers may catch), size limits (under-sized fish must be returned to the sea), closed areas, gear restrictions, prohibited-take species (such as *toheroa*) and closed seasons.

<sup>19</sup> Batstone & Sharp (1999a). TANC = Total Allowable Non-commercial Catch.

<sup>20</sup> Ministry of Fisheries (2002a).

<sup>21</sup> See Treaty of Waitangi Act (1975) and Treaty of Waitangi (Fisheries Claims) Settlement Act (1992).

<sup>22</sup> Ministry of Fisheries (1999).

<sup>23</sup> FA96 Part IX (s174 -186)

<sup>24</sup> To date only two *maitaitai* have been established: Koukourarata, in December 2000 (for management of Banks Peninsula cockle beds); and Rapaki Maitaitai, in December 1998 (Lyttelton Harbour). These *maitaitai* were established under the Fisheries (South Island Customary Fishing) Regulations, 1999 (Ministry of Fisheries (2001d).

<sup>25</sup> Ministry of Fisheries (2002b).

<sup>26</sup> Ministry of Fisheries (2000).

<sup>27</sup> Sarah Morton, MFish Communication Officer, pers. comm. (2001).

not available the estimates are based on the “best available” information (e.g. catch data for that species in another QMA).<sup>28</sup>

## DEFINITION OF QUOTA

### Quota as Tonnes of Fish

When the QMS was introduced in 1986, quota was issued to fishers as a fixed tonnage portion of the annual TACC, based on their recent catch history. In cases where the total historical catch for a species or QMA exceeded the estimated maximum sustainable yield, the government bought back fishers potential allocation rights to quota (i.e. the government asked fishers to forgo their ITQ right (based on historic catch) in exchange for a generous cash payment). Initially the government funded buybacks for fish stocks that were deemed to be overfished and paid out NZ\$47 million for this purpose. It was anticipated that the return in terms of productivity of stocks would more than generate the recovery of the \$47m in the future.<sup>29</sup> Sissenwine and Mace (1992) note that fishers’ catch histories were much larger than the actual catch just prior to the introduction of the QMS, possibly implying that catches were declining. Alternatively, catch histories may have been over inflated; the government may have bought back quota that would have never been caught.

Originally it was intended that the government would adjust the TACCs by buying and selling quota by tender.<sup>30</sup> With this system, the government would bear the risk for the commercial fishery. However, when the ITQ system was set up with the Fisheries Amendment Act 1986, there were provisions for proportionate reduction of all ITQ, with compensation for the quota holders for the “fair market value of the ITQ”.<sup>31</sup> This meant that government could cut TACCs substantially without bidding up the quota price, reducing some of the risk.<sup>32</sup> Thus, reduction of the TACC could be achieved by either reducing ITQ on a proportionate basis, with compensation, or the Director-General of the Ministry could purchase or lease quota.<sup>33</sup>

Government believed it could make a profit by selling the shortfall of stocks recovered (in 1986). Legislation allowed for a revolving fund to be created (FA83 *am.*1986 s107H) which would be funded by a rental set on the industry. This rental could increase at a maximum of 20% per annum. A range of charges for fishing permits and the returns and sale of quota from the future increases in TACC (from stock recovery) would fund the administration of the QMS and the purchase of quota if a reduction for conservation reasons was necessary.

Reducing TACCs became expensive for the government and the revolving fund for buying up quota was never established.<sup>34</sup> In a report to MAFFish, Akroyd et al. (1990) also highlighted the conflict associated with, and political implications of, the Ministry’s active involvement in the quota market while at the same time administering catch level changes.<sup>35</sup>

In 1989, major cuts in TACCs (mainly for orange roughy and hoki) were needed, amounting to 13% of the aggregate TACC for the entire NZ EEZ.<sup>36</sup> This situation was a result of initial TACCs being set too high for newly discovered deepwater fisheries whose populations were insufficiently researched to provide accurate gauges for MSY.<sup>37</sup> Sissenwine and Mace (1992) state that the ITQ system was initially profitable for the government. Revenue from sales or leases of quota was \$84.2m; exceeding the cost of the quota buy-back (\$42m) as well as research, management, and enforcement (\$30m per year). They state however, that if the government had entered the marketplace and purchased quota in 1989 to reduce the TACC to recommended levels, the cost would have far exceeded the revenue generated from the ITQ system.<sup>38</sup>

---

<sup>28</sup> Ministry of Fisheries (2001b). The most recent recreational allowances were gazetted to take effect from 1 October 2001, and were set for 10 stocks.

<sup>29</sup> Major (1999).

<sup>30</sup> Ministry of Agriculture and Fisheries (1984).

<sup>31</sup> FA83 *am.*1986 s28D(4)(a).

<sup>32</sup> Ackroyd et al. (1990).

<sup>33</sup> Meister and Sharp (1993).

<sup>34</sup> Ackroyd et al. (1990).

<sup>35</sup> The government would either make or lose money through the adjustments.

<sup>36</sup> Bevin et al. (1990).

<sup>37</sup> Dewees (1996:339).

<sup>38</sup> Sissenwine and Mace (1992).

As a result, the Fisheries Amendment Act (1990) redefined quota rights from tonnage proportions to percentages of the TACC.<sup>39</sup> The government could now annually adjust the TACC without having to buy back (or sell) quota. Under the new system, fishers own a percentage share of the TACC rather than a specific quantity of fish. Each TACC (defined in tonnes) is allocated among quota owners as a proportion of their quota holding.<sup>40</sup> If someone holds quota for 6% of the TACC for a particular species in an area, they hold the right to harvest 6% of that area's TACC; the tonnage amount harvested may change each year, although the percentage of TACC remains constant (unless additional quota is acquired). Quota holders can no longer be sure of the amount of fish they can legally catch in the future.<sup>41</sup> This affords greater protection to the fish stock, but increases the financial risk to the fishers, shifting it away from the government.<sup>42</sup> The policy changes were officially implemented on 1 April 1990.<sup>43</sup>

### **Annual Catch Entitlement (ACE): Fisheries Act 1996**

The purpose of the Fisheries Act (1996) was to simplify the operation of the QMS by separating ownership rights (ITQ) and the harvesting rights (ACE), and to consolidate the amendments to the 1983 Act.<sup>44</sup> The primary change that the 1996 Act introduced was ACE (annual catch entitlement), which became operational on 1 October 2001. The annual catch entitlement generates a right to harvest a quantity of a fish species in an area for one year.<sup>45</sup> For commercial fishers targeting quota species, the annual catch entitlement specifies how many tonnes of fish the holder can take in a particular year.<sup>46</sup> Under the 1996 Act, quota is still allocated in perpetuity and can be traded or used as security. At the beginning of each fishing year, quota owners receive ACE equal to their share of the TACC. Once allocated, the use of ACE is solely at the discretion of the fisher concerned – they can fish it, sell it, or hold it – in a similar way as the owner may use any other property right.<sup>47</sup> Trading ACE is theoretically equivalent to leasing quota for a year. The advantage of the QMS post 1996 is that the administrative requirements associated with quota are simplified. This reduction in transactions costs should increase the liquidity of the quota market.

### **ALLOCATION OF COMMERCIAL FISHING QUOTA**

In general terms, when quota is allocated it gives commercial fishers the right to harvest a given amount of a fishstock. Ownership of quota equates to owning harvest rights to fish, as opposed to ownership of the fisheries resource (i.e. conveys imperfect property rights); fish are “owned” by the fisher only after they have been legally caught.<sup>48</sup>

One of the initial problems the ITQ system encountered was the issue of who owned the rights to New Zealand's fisheries resource; the establishment of tradable property rights created tension over the allocation of the resource, most notably with Maori and non-commercial users. It also created conflict between the demand for secure commercial harvest rights and the need to manage the resource sustainably.<sup>49</sup>

In a quota system the distribution of the value of the resource depends heavily on how the quota was initially allocated. The options for initial allocation are for government to auction quota and appropriate all the rent. The alternative is for the government to allocate quota to the fishers, for example, allocate quota proportional to fishers' historic catch and then allow trade until market equilibrium of quota distribution is reached. The value of the resource is retained by the initial generation of fishers and new entrants into the industry then purchase quota from existing fishers. Competition between potential purchasers would drive up the market price of ITQs until it reflected the market value of future rents, appropriately discounted. This occurs because the maximum bid any potential entrant would make is the value to be derived from owning that permit – and is equal to the

---

<sup>39</sup> The Fisheries Act 1996(s42) further refines the definition of ITQ in New Zealand, stating that quota represents “shares” in the TACC for that fishery, “Quota for any stock shall be expressed as shares that are whole numbers, and a) The sum of that quota shall be 100,000,000 shares for each stock; and b) The value of 1 share is equal to one hundred millionth of the TACC for each stock”.

<sup>40</sup> Clement (1997).

<sup>41</sup> Ackroyd et al. (1990).

<sup>42</sup> Ackroyd et al. (1990), Tietenberg (1996).

<sup>43</sup> Annala (1996).

<sup>44</sup> Ministry of Fisheries (2001c).

<sup>45</sup> FA96 s80.

<sup>46</sup> Ministry of Fisheries (2001a).

<sup>47</sup> FA96 s133.

<sup>48</sup> Kirkley et al. (1994:10).

<sup>49</sup> Ackroyd et al. (1990:85).

present value of future rents, i.e. the difference between the sale price and marginal cost for each unit of fish sold.

### **Initial Allocation of Quota**

The Fisheries Amendment Act (1986 s28O) legislated tradable quota rights, allocating them to those fishers holding permits as at 15 May 1985; these permits had been allocated to commercial fishers under the Fisheries Act (1983).<sup>50</sup> To obtain their permits under the QMS, each fisher (or company or partnership) had to show that they were wholly or substantially reliant on fishing for their income in the 1982/83 fishing year.<sup>51</sup> As at 1 October 1983, 46% (2260) of licence holders did not meet the stated criteria and were labelled “part-time” fishers. Part-timers did not have their permits renewed therefore were excluded from the commercial fisheries, partly for administrative convenience but mainly because they had the greatest potential to increase their fishing effort.<sup>52</sup>

### **Provisional Quota Allocation**

In 1986, fishing vessel owners were allocated provisional maximum quota (PMITQ) for each species based on their historic catch.<sup>53</sup> Their provision was based on their average catch history for their best 2 fishing years out of 1982, 1983 and 1984.<sup>54</sup> At this point the Ministry had not finalised TACC for any stock, although approximate catch targets had been set.<sup>55</sup> After the reviews were completed in mid 1986, the PMITQ were allocated to fishers.

For 20 of the 29 original QMS species, the amount of provisional quota exceeded the TACCs; the “historical catch” PMITQ was determined to be unsustainable, indicating a mismatch in fleet capacity to available catch.<sup>56</sup> In order to reduce the PMITQ to the TACC level, the Ministry announced in 1984 that a provisional quota buy-back scheme would be implemented.<sup>57</sup>

Permit holders were invited to competitively tender (by October 1986) all or part of their PMITQ (for as many species as they wished, except the 8 species that had been managed under the deep-water policy) to government.<sup>58</sup> This gave fishers the opportunity to voluntarily exit the industry by selling part or all of their future quota rights.

The quota buy-back was an integral part of the successful transition to a property rights based system of fisheries management.<sup>59</sup> It was an efficient and effective way for the government to deal with the economic and biological legacy of their earlier property rights and fisheries development incentives.

### **Addition of New Species under the 1996 Act**

Part IV (s17-62) of the Fisheries Act (1996) details the rules under which new species are added to the QMS. The Minister is at liberty to “declare any stock to be subject to the quota management system”.<sup>60</sup> However, most stocks introduced to the QMS since 1986 were species that already had catch restrictions in place such as catch limits, individual catch entitlements (ICE) or other controls, and fishers were required to have a controlled fishery license or permit to harvest them. All new introductions to the QMS are commercially important species that have trends of increasing catch levels or that have had stock research that identified sustainability concerns.<sup>61</sup>

---

<sup>50</sup> FA83 s28O. Sharp (1996).

<sup>51</sup> The criteria was that fishing provided a minimum 80% of their gross income, or \$10 000 p/a, whichever was less. Ackroyd et al. (1990), Sharp (1996).

<sup>52</sup> Ackroyd et al. (1990), Sharp (1996).

<sup>53</sup> Sharp (1996), MFish web (2001).

<sup>54</sup> Dewees (1996).

<sup>55</sup> Shallard, pers. comm.

<sup>56</sup> Clark and Major (1988).

<sup>57</sup> Ackroyd et al. (1990:24), Sharp (1996). Quota buybacks were in July/August 1986.

<sup>58</sup> Sharp (1996). See FA83 s28L.

<sup>59</sup> Sharp (1996).

<sup>60</sup> Fisheries Act, 1996 (s18).

<sup>61</sup> Shallard, pers. comm.

Prior to a species being introduced to the QMS, its MSY is estimated and translated into tonnage TAC. An allowance for recreational and traditional (Maori) catch is made and the remainder is retained for commercial fishers (as TACC). Under the 1996 Act, a quota weight equivalent (QWE), the weight tonnage of a share, is determined by dividing the TACC (expressed in tonnes) into one hundred million quota shares. Eighty million shares are divided among eligible commercial fishers, proportional to their catch history;<sup>62</sup> twenty million shares are allocated to Maori.<sup>63</sup> If the sum of all eligible fishers' PCHs is greater than 80% of the TACC (the QWE of 80,000,000 shares), then the fishers can sell their quota back to the government through competitive tender. If, after the tender round, the sum of provisional quota still exceeds 80% of the TACC then fishers have their respective PCHs reduced pro-rata. Each eligible fisher retains the same number of shares, but the weight value of each share (their QWE) is reduced (shares x QWE = ACE).<sup>64</sup>

Alternatively, if the fishery can support a TACC greater than the histories returned (plus 20% for Maori), fishers provisional catch histories are not increased pro-rata. Rather, the Crown holds the remainder of the unallocated quota. The Crown can auction the unencumbered excess quota by competitive or closed tender; encumbered quota must be retained for subsequent allocations as may be determined by the appeal process.

## Conclusion

This is an abridged version of chapters 1-4 of our Regulatory History paper. We are currently working on further chapters which will detail limits on ownership and trading of quota, funding, and monitoring and enforcement. We welcome comments and suggestions from other researchers.

## Acknowledgements

This paper was funded by the New Zealand Ministry of Fisheries and Resources for the Future. All opinions expressed are those of the authors. We would like to thank Nick Wyatt, Bruce Shallard, Sarah Morton, Mark Edwards, Rebecca Perrott, Kim Duckworth, Jim Sanchirico, and Richard Newell for assistance with queries and for comments. All errors and omissions that remain are our responsibility.

## BIBLIOGRAPHY

- Ackroyd, P., R. P. Hide, B. M. H. Sharp. (1990). *New Zealand's ITQ System: Prospects for the Evolution of Sole Ownership Corporations*. Report to MAFFish, Wellington.
- Annala, J. H., (1996). New Zealand's ITQ system: have the first eight years been a success or a failure? *Reviews in Fish Biology and Fisheries* 6:43-62.
- Batstone, C. J. and B. M. H. Sharp (1999a). New Zealand's quota management system: the first ten years. *Marine Policy* 23(2): 177-190.
- Bevin, G., P. Maloney, P. Roberts and N. Redzwan (1990). *Economic review of the New Zealand fishing industry 1987-88*. New Zealand Fishing Industry Board, Wellington.
- Clark, I. N. and P. J. Major (1988). *Development and Implementation of New Zealand's ITQ Management System*. Draft paper prepared for an Advanced Research Workshop on the Scientific Foundations for Rights Based Fishing, Reykjavik, Iceland.

---

<sup>62</sup> To be eligible to receive provisional quota when new species are introduced into the QMS:

- fishers must hold a permit for that species when the introduction announcement is made and during the qualifying period;
- fishers must submit a catch history to the Ministry for their best catch over 12 consecutive months over a qualifying period as determined by the Ministry (for species listed in Schedule 4, this is 1990-1992);
- fishers must not have any outstanding levies or DV payments owing to the Crown (quota can be withheld until all dues are paid);
- quota aggregation and foreign ownership constraints still apply. Mark Edwards, pers. comm.

Sections 33-35 of the 1996 Act became fully functional on Oct 1, 2001; prior to this date, the regulations under FA83 applied.

<sup>63</sup> 20% of the shares (20,000,000) are allocated to Maori (through the Maori Fisheries Commission / *Te Ohu Kai Moana*) as legislated by the Deed of Settlement (1992) in relation to the Crown's obligations under the Treaty of Waitangi. This is discussed further in a later section.

<sup>64</sup> If a fishers catch entitlement is reduced they are entitled to receive compensation from the Crown, at the specified rate per quota share only for the species in Schedule 4A of the 1996 Act.

- Clement & Associates (1997). *New Zealand commercial fisheries: the guide to the Quota Management System*. Clement & Associates, Tauranga.
- Clement & Associates. (1998). *New Zealand commercial fisheries: the atlas of area codes and TACCs 1998/99*. Clement & Associates, Tauranga.
- Colman, J.A., J.L. McKoy and G.G. Baird. (1985). *Background papers for the 1985 Total Allowable Catch recommendations*. Fisheries Research Division, NZ Ministry of Agriculture and Fisheries. 259p (Unpublished Report, held in Fisheries Research Division Library, Wellington).
- Cullen, R. and P.A. Memon, (1990). Impact of the Exclusive Economic Zone on the management and utilisation of the New Zealand fishery resources. *Pacific Viewpoint* 31(1):44-62.
- Deweese, C. M. (1996). Industry and Government Negotiation: Communication and Change in New Zealand's Individual Transferable Quota System. Pages 333-341 in Meyer, R. M., Zhang, C., Windsor, M. L., McKay, B. J., Hushak, L. J., Muth, R. M. and Wolotira, R. J. (eds), *Fisheries resources utilization and policy. Proceedings of the World Fisheries Congress, Theme 2*. Oxford & IBH, New Delhi.
- Fisheries Act, (1908).
- Fisheries Act, (1983).
- Fisheries Act, (1996).
- Fisheries Amendment Act, (1986).
- Fisheries Amendment Act, (1990).
- Kirkley, J., W. DuPaul and M.Oesterling (1994). *Regulating the Blue Crab, Callinectes Sapidus, Fishery in Virginia: Biological and Economic Concerns*. Virginia Sea Grant's Marine Advisory Program Publications, VA.
- Le Heron, R. (1996). Farms, fisheries and forests. In: Le Heron, R. and Pawson, E. (eds) *Changing Places: New Zealand in the Nineties*. Longman Paul, Auckland. pp 154 –160.
- Maori Fisheries Act, (1989).
- Major, P. (1999). The evolution of ITQs in the New Zealand fisheries. In Arnason, R. and Gissurason, H. H. (eds) *Individual Transferable Quotas in theory and practice*. University of Iceland Press, Reykjavik. Pp 81-102.
- Meister, A and B. Sharp (1993). *Current and potential uses of economic approaches to environmental management*. Discussion paper in natural resource economics, 17. Massey University, Palmerston North.
- Ministry of Agriculture and Fisheries (NZ). (1984). *Inshore Finfish Fisheries: Proposed Policy for Future Management 11*.
- Ministry of Fisheries. (1999). *Kaimoana Customary Fishing Regulations*. Ministry of Fisheries, Wellington.
- Ministry of Fisheries. (2000). *Soundings*. Ministry of Fisheries, Wellington.
- Ministry of Fisheries. (2001a). New catch balancing regime explained. *Seafood New Zealand* 9:4. The NZ Seafood Industry Magazine Ltd, Wellington.
- Ministry of Fisheries. (2001b). *Review of Sustainability Measures and Other Management Controls for the 2001-02 Fishing Year*. Final Advice Paper, Ministry of Fisheries, Wellington.
- Ministry of Fisheries. (2001c). *Ringing in the Changes – Fisheries Act 1996*. Ministry of Fisheries, Wellington.
- Ministry of Fisheries. (2001d). *Hi Ika – current views on customary fishing*. Newsletter. Ministry of Fisheries, Wellington. Issue 9.

- Ministry of Fisheries. (2002a). *Fisheries Assessment Working Groups*. Web: [www.fish.govt.nz/sustainability/research/assessment/groups.htm](http://www.fish.govt.nz/sustainability/research/assessment/groups.htm)
- Ministry of Fisheries. (2002b). Customary Fishing. Web, <http://www.fish.govt.nz/customary/index.html>.
- Nightingale, T. (1992). *White collars and gumboots: a history of the Ministry of Agriculture and Fisheries 1892-1992*. The Dunmore Press, Palmerston North. Pp212-229.
- Sharp, B. (1996). *Introducing Transferable Rights*. Draft Chapter 3 (unpublished).
- Sharp, B. (1997). From Regulated Access to Transferable Harvesting Rights: Policy Insights From New Zealand. *Marine Policy*, 21:501-517.
- Sissenwine, M. P. and P. M. Mace. (1992). ITQs in New Zealand: the era of fixed quota in perpetuity. *Fishery Bulletin* 90(1): 147-160.
- Tietenberg, T. (1996). Renewable Common-property resources: fisheries and other species. *In: Environmental and natural resource economics*. (4<sup>th</sup> Ed.) HarperCollins, New York. Pp271-298.
- Treaty of Waitangi Act, (1975).
- Treaty of Waitangi (Fisheries Claims) Settlement Act, (1992).