INITIAL ALLOCATION OF ITQS IN THE ICELANDIC FISHERIES

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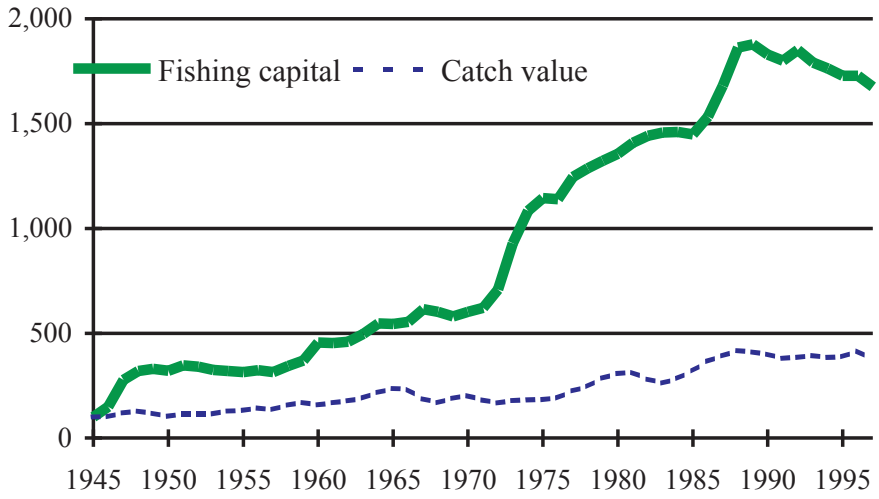
1. INTRODUCTION

1.1 Background

Until the extension of the fisheries jurisdiction to 200 miles in 1976, the Icelandic fisheries were, for all intents and purposes, international and open-access fisheries. Large foreign fishing fleets featured prominently on the fishing grounds, taking almost half of the demersal catch. The extension of the fisheries jurisdiction to 200 miles all but eliminated foreign participation in the Icelandic fisheries. However, the initial management measures taken in the demersal fisheries following the extension of the fisheries jurisdiction in 1976 were inadequate and therefore did not alter the common-property nature of these fisheries as far as domestic fishers were concerned. They were still forced to compete for shares in the catch. Therefore not surprisingly, the development of the Icelandic fisheries in the post-war era closely followed the path predicted for common-property fisheries: exhibiting increasingly excessive capital and fishing effort relative to reproductive capacity of the fish stocks.

The value of fishing capital employed in the Icelandic fisheries increased by over 1400% from 1945-1983. Real catch values, on the other hand, only increased by 300% during the same period. Thus, the growth in fishing capital exceeded the increase in catch values by a factor of more than four, and, in 1983, the output-to-capital ratio in the Icelandic fisheries was less than one-third of the output-to-capital ratio in 1945. The post-war development of fishing capital and catch values since 1945 is illustrated in Figure 1.

Figure 1
Fishing capital and catch values 1945-1997 (index 1945=100)



Source: National Economic Institute.

This long-term decline in the economic performance of the Icelandic fisheries did not go unnoticed. With the *de facto* recognition of the exclusive 200-mile zone in 1976, the situation dramatically changed. The Icelandic fisheries gradually came under increased management until, after 1990, a uniform system of individual transferable quotas was instituted in practically all fisheries.

1.2 The pelagic fisheries

Due to an alarming decline in the stocks of herring (*Clupea harengus*), an overall quota in the form of a total allowable catch was imposed on this fishery in 1969. But since this did not halt the decline in the stocks' biomasses, a complete moratorium on herring was introduced in 1972. In 1975, when fishing on the Icelandic herring stocks was partly resumed, it was obvious that the whole fleet could not participate, and the rule of open-access for all vessels had to be abandoned. Hence, an individual vessel quota system with limited eligibility (licensing) was introduced. All vessels with a history of catching herring in the late 1960s and still in operation,

Capelin *(Mallotus villosus)*

were eligible for licensing. During the first years, each eligible vessel only received quota every other year. Vessel quotas were small and issued for a single season at a time. The quotas were determined annually by dividing the TAC by the total number of eligible vessels. In effect, the TAC was divided into two parts, a purse-seine TAC and TAC for vessels using other gears. The purse-seine vessels received the major part of the TAC, which was then divided into individual vessel quotas. The smaller part of the TAC became a common quota for all vessels catching herring with gear other than purse-seine, *i.e.* primarily drift-nets.

It soon became apparent that there was an economic need for quota transferability. Although formally non-transferable, quotas were being transferred by various measures. Therefore, spokesmen for the industry proposed that fairly unrestricted transfers of herring quotas between vessels be allowed. This was agreed to by the Ministry of Fisheries in 1979. Vessels using gear other than purse-seines continued to receive a common share of the TAC until 1985 when individual quotas were issued for those vessels as well. In 1986 the vessel quota system in the herring fishery was changed, such that all herring vessels were now subject to the same ITQ system and the quotas became permanent. The *Fisheries Management Act* of 1990 made the quota system in the herring fishery part of the general ITQ system.

The fishery for capelin (*Mallotus villosus)*, which became a major fishery in the 1970s, was subjected to limited-entry and individual vessel quotas for licence holders in 1980, at a time when the stock was seriously threatened with overfishing. Again, a similar situation existed as for the herring fishery: too many vessels were catching capelin considering the TAC permitted for the stock. In the case of capelin the industry asked for the quota and licensing regulations. Owners of the bigger purse-seine vessels met in June 1980 and decided that they would ask the Ministry of Fisheries to limit entry into the capelin fishery and allot a quota to each licensed vessel. Only 52 vessels received a licence in 1980. The preceding year under open-access conditions there had been 68 vessels engaged in the capelin fishery. In 1986, capelin quotas became transferable. The capelin quota system became a part of the general ITQ system with the adoption of the *Fisheries Management Act* of 1990.

1.3 Demersal fisheries

In connection with the extension of Iceland's exclusive fishing zone to 200 miles in 1976, the major demersal fisheries were subjected to overall catch quotas. The quotas recommended by the marine biologists soon proved quite restrictive and difficult to uphold. As a result, individual effort restrictions, taking the form of a limitation on the number of fishing days allowed for each vessel, were introduced in 1977. However because new vessel entry into the fishery remained possible, the demersal fleet continued to grow and the allowable fishing days had to be reduced from year to year. In 1977, deep-sea trawlers had been permitted to fish for cod (*Gadus morhua*) 323 days a year but in 1981 they were only allowed 215 days a year, despite a record catch. It gradually became obvious to everyone concerned that this system was economically wasteful and access needed to be restricted.

In 1984, following a sharp drop in biomass and catch levels of the demersal stock, especially for cod, a system of individual vessel quotas was introduced. The Fisheries Association of Iceland, a wide forum of all fishing industry participants, held its annual meeting on December 2 and 3. At the end of that meeting, after some heated discussion, a proposal was carried to ask the Ministry of Fisheries to try IQs for the demersal fisheries for one year, in 1984. The annual meeting of the Association of Vessel Owners had previously agreed to a similar proposal. On December 22, 1983, the Parliament passed an amendment to the *Fisheries Act* of 1976 which basically gave the Minister of Fisheries discretionary power to restrict entry through licensing and put a vessel quota system in place. In the Upper Chamber of Parliament, the amendment received only the minimum majority necessary: 11 of 20 MPs in support.

Because of the generally favourable results of the system, it was extended for 1985 and 1986-1987. However, in order to ensure sufficient political support for the system, an important provision was added: vessels were allowed to opt for effort restrictions instead of catch quotas. On 8 January 1988, the Icelandic Parliament enacted general vessel quota legislation that applied to all Icelandic demersal fisheries and was effective between 1988 and 1990. This legislation retained the effort quota option but made it somewhat less attractive.

In 1990 legislation for comprehensive ITQ systems, the *Fisheries Management Act*, was passed by the Parliament. This legislation abolished the effort quota option and closed certain other loopholes in the previous legislation, especially as regards the operation of vessels under 10 GRT (vessels under 6 GRT continued to be

exempt from the ITQ system). This new legislation required licensing for all commercial fishing vessels and a moratorium on issuing new licences. It also extended the ITQ system indefinitely. Since then, however the system has continued to be modified, and this Act has been amended on several occasions since 1990.[1]

1.4 The shrimp, lobster and scallop fisheries

The fisheries for inshore shrimp (*Pandalus borealis*), lobster (*Nephrops norvegicus*), and scallop (*Chlamys islandica*) are relatively recent additions to the Icelandic fisheries. They were largely developed during the 1960s and 1970s and, from the outset, have been subject to extensive management, primarily limited local entry and overall quotas. An overall TAC was set for the lobster fishery in 1973 with restrictions on the size of vessels and, subsequently, licensing and vessel quotas in 1984. Legislation regulating the processing and fishing of inshore shrimp and scallop was passed in 1975, giving the Ministry authority to issue quotas for these fisheries to the processors. There are seven inshore shrimp areas, each having regulations specific to it. The Ministry would set a TAC for each area and then allocate shares to each shrimp-processing plant in an area. The Ministry would also decide on the total number of vessels that could catch the shrimp in the area and licence those vessels for the fishery. In deciding the total number of licences the Ministry would also decide on the maximum daily catch and maximum weekly catch for each vessel. In addition the Ministry decided on the allowable size of vessels and the appropriate gear. The processing plants would then allocate quotas to vessels that would catch their share of the shrimp quota. In 1988, the deep-sea shrimp fishery also became subject to vessel quotas. The management of shrimp and scallop fisheries became part of the general ITQ system with the *Fisheries Management Act* of 1990.

2. THE NATURE OF THE HARVESTING RIGHT

2.1 The current ITQ system

The management system is based on individual transferable quotas and is therefore appropriately referred to as an ITQ system. The essential features of the current ITQ system are as follows: all fisheries within the EEZ and some outside are subject to vessel catch quotas. The quotas represent shares in the total allowable catch. They are permanent, perfectly divisible and transferable and they are issued subject to a small annual charge to cover enforcement costs. The ITQ system is uniform across the various fisheries. However, slight differences between the fisheries exist, mostly for historical reasons. This system is based on the *Fisheries Management Act* of 1990 with subsequent modifications.[2] It applies to all fish stocks within the Icelandic EEZ for which a TAC is necessary. Since 1997 it also applies to fish stocks outside the Icelandic EEZ in which Iceland has national fishing rights. This includes the deep-sea redfish (*Sebastes spp*) just outside the Icelandic EEZ, the Atlanto-Scandian herring, the deep-sea shrimp on the Flemish cap, and cod in the Norwegian EEZ and the Russian EEZ.

It should be noted that the ITQ system was superimposed on an earlier management system designed mainly for the protection of juvenile fish. This system involving certain restrictions on gear, area and fish size is still largely in place. The ITQ system has not replaced these components of the earlier fisheries management system.

2.2 Total allowable catch (TAC)

The Ministry of Fisheries determines the TAC for each of the most important domestic stocks. This decision is made on the basis of recommendations from the Marine Research Institute (MRI), which has its own vessels that are used to study the state of the fish stocks. In addition, the MRI relies on information from the fishers. In recent years the Ministry of Fisheries has followed the recommendations of the Marine Research Institute quite closely. The cod fishery plays a substantial role in the Icelandic economy, and therefore not surprisingly, successive governments had been reluctant to curtail the TACs for cod in accordance with the recommendations of the MRI. Only in the 1990s has the Ministry followed this advice and even stood firm on that decision despite political

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[1] The *Fisheries Management Act* of 1990 has been amended almost every year since it came into effect (*i.e.* in 1992, 1994, 1995, 1996, 1997, 1998 and 1999).

[2] The Icelandic fisheries were also subject to restricted access. All commercial fishing vessels had to hold valid fishing licences, in addition to catch quotas. Fishing licences moreover, were issued only to vessels already in the fishery in 1990 and their replacements, provided they were deemed comparable in terms of fishing power. The fishing licences were only transferable with the vessels. In December 1998 the Supreme Court reached a decision on a case, concerning an application by an individual for a commercial fishing licence. The Ministry of Fisheries had declined the application and a lower court had decided the Ministry had grounds for the refusal on the basis of the *Fisheries Management Act* of 1990. Article 5 of this legislation stated that only vessels already in the fishery at the time of the legislation could receive licences. The Supreme Court found the article unconstitutional, on the grounds that it provided for unequal treatment of citizens. The Parliament passed legislation in January 1999 to rectify the *Fisheries Management Act*. All registered vessels may now apply for commercial fishing licences. Access is therefore not restricted anymore. Note, however, to fish TAC-controlled species also requires possession of a quota allotment.

pressure, even from within the government. In 1995 a TAC-rule, which sets the TAC for cod at 25% of the fishable stock, was established.

Currently 19 species are subject to ITQs. They include: eleven demersal species: cod, haddock (*Melanogrammus aeglefinus*), saithe (*Pollachius virens*), redfish, Greenland halibut (*Reinhardtius hippoglossoides*), plaice (*Pleuronectes platessa*), wolffish (*Anarhichas lupus*), dab (*Limanda limanda*), long rough dab (*Hippoglossoides platessoides*), lemon sole (*Microstomus kitt*) and witch (*Glyptocephalus cynoglossus*); two pelagic species, the Icelandic herring and capelin; as well as deep-sea and inshore shrimp, lobster and scallops. Together these species account for over 90% of the landed value of the catch. In addition, Icelandic vessels in the deep-sea redfish fishery, the shrimp fishery on the Flemish Cap, and the Atlanto-Scandian herring fishery, are subject to ITQs. Several species on which fishing pressure is regarded as slight are not currently subject to TAC.[3] This means that the corresponding fisheries can be pursued freely by all licensed vessels, but they are, in most cases, commercially negligible. Iceland's TAC in shared stocks is annually decided in the appropriate international forum. Currently four major international fisheries are managed on this basis.

Each eligible vessel is issued a permanent share in the TAC for every species for which there is a TAC. These permanent quota shares may be referred to as TAC shares.

2.3 Annual catch entitlement

The size of each vessel's annual catch entitlement (ACE) in a specific fishery is a simple multiple of the TAC for that fishery and the vessel's TAC share. In some fisheries, such as those for capelin and inshore shrimp, the management periods are seasonal, rather than a whole year. The same rule nevertheless applies. While the TAC share is a percentage, annual catch entitlements are denominated in terms of volume (*i.e.* tonnes).

The Icelandic demersal fishery is a mixed-stock fishery and vessels are bound to catch of species other than the major one they wish to target. The ITQs (or TAC shares) are, therefore, also denominated in terms of cod-equivalents, as the cod-fishery is the most important fishery in Iceland.

2.4 Transferability

Both the TAC shares and the ACEs are fairly freely transferable and perfectly divisible. TAC shares are transferable without any restrictions whatsoever. Any fraction of a given quota may be transferred to another vessel subject only to registration by the Fisheries Directorate. The particulars of the exchange, including price, are not registered. Table 1 shows the development of TAC shares in the period 1991-1998.

Table 1
Transfer of TAC-shares 1991-1998. Percentage of TAC-shares in each year

	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99
Cod	10.6	13.0	6.7	18.1	18.7	11.8	31.3	12.8
Haddock	11.0	16.6	7.2	18.3	18.1	11.2	27.9	12.2
Saithe	10.3	14.2	9.2	12.8	17.9	10.0	28.8	11.5
Redfish	8.3	12.6	9.7	8.1	16.0	5.9	30.6	4.4
Greenland halibut	3.1	10.3	4.2	9.9	15.4	8.1	34.7	3.5
Plaice	10.7	18.1	10.3	17.1	11.6	11.5	24.8	14.1
Herring	12.0	16.6	12.0	25.0	43.2	16.7	28.8	17.7
Capelin	2.9	6.7	9.4	2.7	11.2	3.8	21.0	18.0
Lobster	22.1	14.1	7.5	30.7	17.2	20.9	19.2	12.1
Deep-sea shrimp	14.7	15.2	13.3	22.6	24.9	20.2	44.4	28.1

Source: Fisheries Directorate

The transfer of ACEs are subject to some restrictions. First, the Fisheries Directorate must agree to transfer of all ACE between geographical regions. The rationale for this stipulation is to stabilize local employment in the short run and prevent speculation in quotas. In practice, however, it appears that few inter-regional transfers are actually blocked. Transfer of ACEs became subject to further restrictions in 1992 and 1994 when the Parliament

[3] In addition Iceland receives a share in the TAC for cod in the Norwegian EEZ and the Russian EEZ. These were allocated to Icelandic vessels as ITQs in 1999.

amended the *Fisheries Management Act* of 1990. These amendments were designed to further discourage speculative quota holdings. The constraints were, however, relatively insignificant. Further restrictions came into effect in 1998: up to only 50% of all ACE is freely tradeable between vessels under different ownership in exchange for money. However, the offsetting of transfers of different species with equal value is not subject to any such restrictions. Further, as vessel owners are not allowed to include the crew share in the cost of quota purchases, all ACE transfers, as of 1998/99, have to take place at an official Quota Trade Exchange.

Table 2 shows transfers of ACE in 1992-1998. Note that the reduction in ACE transfers in 1998/99 may reflect the impact of the new restrictions introduced in 1988 and the impact of the Quota Trade Exchange.

Table 2
Transfers of quota between vessels 1992-1998. As percentage of total ACE[1]

Transfer[2]	92/93	93/94	94/95	95/96	96/97	97/98	98/99
Type A	33.0	26.3	41.3	32.5	31.3	38.6	26.7
Type B	20.2	23.9	13.6	18.3	19.4	15.4	-
Type C	12.6	11.3	12.0	7.2	10.1	9.0	8.1
Type D	34.3	38.5	33.1	42.1	39.2	37.0	11.5
Total	66.2	63.7	78.1	71.2	68.1	69.3	46.3

[1] These quotas are measured in cod equivalents and represent temporary annual quota (gross) transfers only.
[2] Type A: Transfers between vessels with the same owner.
Type B: Transfers between vessels with different owners operated from the same port. Type B and D are grouped together as of 98/99
Type C: Offsetting transfers of different species with equal value between vessels with different owners.
Type D: Transfers between vessels with different owners operated from different ports.
Source: Fisheries Directorate.

2.5 Exemptions from the ITQ System

There is one minor exemption from the current ITQ system: in the demersal fisheries, hook-and-line fisheries by vessels under six GRT are exempted from quota restrictions, but are subject instead to limited fishing days and an overall TAC. Although this arrangement was to end in 1994, the exemption was extended though the number fishing days was reduced. Under the 1996 amendment to the *Fisheries Management Act* these vessels now choose between a cod-share quota system and a cod-effort restriction system (maximum number of allowable fishing days). As a group, they receive a 13.75% share of the general TAC for cod.

3. QUALITY OF THE ITQ PROPERTY RIGHT

Economic theory suggests that the efficiency of an ITQ system stems from its creation of private property in harvesting rights (*e.g.* Scott 1988, 1996; Arnason 1995b, 1999; Libecap 1989). This suggests that the higher the quality of this property right in terms of permanence, exclusivity, and transferability, the greater will be the resulting efficiency of the ITQ system (see Scott 1988, 1989 for more details). ITQs are, of course, imperfect property rights. An ITQ is a harvesting right and not property in the fish stock. They are, therefore, different from what is commonly referred as property rights on land. As pointed out by Hannesson (1994), ITQs are comparable to a right to extract a certain quantity of timber from a given forest or the right to harvest a certain number of deer from a given population. Although this may give the necessary incentives to cut the timer and catch the deer in efficient ways, it may not be suitable for the optimal husbandry of the forest or the population of deer.

Article 1 of the *Fisheries Management Act* of 1990 states that the fish stocks in Icelandic waters are the common property of the Icelandic people. It further states that the allocation of ITQs to individual firms and vessels does not give irrevocable property rights in these TAC shares. Alas, this Article has created uncertainty concerning the permanence and exclusivity of the ITQs and has undermined its economic effectiveness.

Legal scholars in Iceland have debated these issues and there seems to be a general consensus among them that Article 1 of the *Fisheries Management Act* of 1990 lacks grounding in other legislation. These scholars, it should be noted, do not consider the fishery the property of TAC shareholders, but rather that they have a property (an asset) in the harvesting rights. The Parliament could, in principle, revert to open-access without compensation to vessel owners, as long as access continued to be open for them.[4]

[4] The uncertainty and insecurity of the property rights in ITQs also created problems for tax authorities and the banks. The tax authorities were uncertain whether a vessel-quota should be regarded as an asset on the firm's books or if expenditures

As a result, the quality of the property rights of Icelandic ITQs is substantially reduced. Thus Arnason (1999) finds that on a scale of zero to one, the quality of the Icelandic ITQ property right is only about 0.7, considerably less than the quality of the New Zealand ITQ right.

4. METHOD OF ALLOCATION

The initial allocation of TAC shares to individual vessels varies somewhat between fisheries. The general policy behind issuing quotas has always been to distribute the quotas in a "fair" way, when it was recognized that a TAC had to be set and entry in the fishery had to be limited.

Eligibility and the method for deciding on allocations have always been done in close cooperation with the parties concerned, *i.e.* the government, the vessel owners and the fishermen. In the demersal fisheries, for example, after the Parliament had changed the necessary legislation in December 1983 (a change that was based on the proposals of the Fisheries Association and the Association of Vessel Owners) a committee was formed to develop specific regulations for the quota system. The committee was comprised of representatives of government, vessel owners and fishermen. The committee was assisted in its task by the staff at the Ministry of Fisheries and the Fisheries Association. In January 1984 the committee published its proposals and the Ministry, with only minor changes in the proposals, issued regulations in February for the demersal fishery for 1984. Included in the regulations was the formation of an appeals committee comprising three members, one each from the Ministry, the Association of Vessel Owners, and the Association of Fishermen.

The general rule for eligibility to receive quota in a given fishery has been that a vessel had to demonstrate a catch history in that fishery. In the demersal fisheries the initial allocation was equal to the vessel's average share in the total catch during the three years prior to the introduction of the ITQ system in 1984. However there were noteworthy exceptions to this rule: if for instance, the vessel in question was not operating normally during the period from 1981 to 1983 (for instance because of major repairs, or had entered the fleet after 1981) the calculated share was adjusted upwards. Several vessel-owners, based on these issues complained about their initial quota shares in 1984, and the appeals committee made several changes. During the years 1985-1987 it was possible to modify the TAC shares by temporarily opting for effort restrictions instead of vessel quotas, and by demonstrating high catches during this period.

In the lobster and deep-sea shrimp fisheries the shares of the TACs are also normally based on the vessel's historical catch recorded during certain base years. In the herring and inshore shrimp fisheries the initial TAC shares were equal for all eligible vessels. The same held for the capelin fishery, except that a third of the TAC shares were initially allocated on the basis of vessel hold-capacity. The general rule now, is to issue TAC shares in new fisheries to vessels on the basis of the catch record of the three previous years.

5. EVALUATION OF THE INITIAL ALLOCATION PROCESS

5.1 Success in achieving initial policy objectives

As discussed earlier, the allocation of quota rights in Iceland took place at different times in different fisheries. As new fisheries have been brought under the ITQ regime, new quota allocations have taken place. Moreover, even in established ITQ fisheries, quota allocations have been subject to modifications. In the demersal fisheries, for instance, the allocation of quota rights was not a once-and-for-all affair but an extended process, due to the impact of the effort option between 1985 and 1990, and the gradual inclusion of segments of the small artisanal fleet into the ITQ system during 1991-1998. Thus, the allocation of quota rights in the Icelandic fisheries is a process that, though begun in 1975, is still going on. This prolonged period of quota allocations immediately suggests a certain difficulty in identifying and even discussing policy objectives of initial allocations in a useful way.

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on quotas should be regarded as outlays that are deductible from taxable income. When the tax authorities and the Ministry of Finance could not agree on the rules it was left for the courts to decide the matter. The courts decided that transfer of ACEs would be treated as taxable outlay while transfers of TAC shares would be treated as assets and depreciated over 5 years. Allocated quotas, whether annual or shares, were not subject to these tax rules and were treated as non-taxable. In 1997 the Parliament passed legislation whereby depreciation of TAC was abolished gradually through the year 2000. The banks had been unsure whether a vessel's quota should be regarded as part of the vessel's equity (value) when a vessel is put up as collateral for a bank loan. Both the Parliament and the courts agreed that quotas were not to be regarded as the property of a vessel owner, and were, therefore, not a legitimate collateral for loans. The Parliament passed legislation in 1997 that clarified this issue. Vessel owners and banks have, however, figured out ways to circumvent this: for example, a bank may make a loan on the condition that it must approve of any transfers of TAC shares.

Broadly speaking, the initial allocation, of quotas have taken place at the time quota systems in the various fisheries were introduced. It is also broadly true that on those occasions the policy objectives for the particular allocation selected, if they existed at all, were not stated. On reviewing the discussion at the times the most significant steps in the allocation of ITQ rights occurred (*i.e.* 1975, 1979/80, 1984 and 1990) it emerged that the overriding concern in all cases was to improve the operating conditions and economic efficiency of the fleets in question. Concluding in each case that the way to go was IQs and ITQs, the question of quota allocation was simply settled by whatever the main interested parties, primarily the vessel owners, fishermen and regional representatives, could agree on.

This suggests that policy objectives in the sense of well defined goals were not a part of this procedure. It was more like a balancing of the various (largely similar) interests. In most cases the agreement was to allocate quotas on the basis of retaining historical catch shares, thus suggesting that the overall consensus may have been to (a) respect historical rights and (b) avoid rapid, radical changes in the distribution of catch across regions and vessels.

In retrospect it is very clear that the main objective of increased economic efficiency has been achieved. Moreover, historical rights have been largely respected and the reallocation of catch via quota trades across regions and vessels has been a fairly slow moving, smooth process. Thus the two allocation objectives have also been achieved.

5.2 Satisfaction of rights-holders with the process

First, it is important to realize that there is no hard data available on the views of rights-holders (or others) about the ‘process’. There are no reliable studies on this issue. Therefore what follows merely represents our impression.

It is useful here to distinguish between two groups of fishermen: vessel-owners on the one hand, and fishing labour on the other. As the quotas are associated with vessels, fishing labour are not rights-holders. Both parties were reasonably happy with the allocation at the outset of each ITQ system. Today, vessel-owners, broadly speaking, continue to be happy with the process. This is to be expected: they were the recipients of considerable asset appreciation in the form of quota price increases. There is only a certain amount of dissatisfaction among those who sold their quotas prematurely, *i.e.* before they reached the current value. The only identifiable group of vessel-owners that seems to be partly critical of the quota allocation process are the small vessel-owners, especially those who entered the system later and do not hold quotas. These, however, represent a small part of the overall fishery.

Today, a subset of fishing labour appears critical of the quota allocations, especially those fishermen whose vessels have reduced their quota holdings, and those fishermen who are in the position of having to participate in the cost of quota purchases at the insistence of the owner of their vessel.

5.3 Views of other community groups

The caveat regarding lack of reliable data (in Section 5.2) applies even more to this section. Community groups outside the fishing industry were not involved in the initial allocation of quota rights in the various fisheries and did not seem interested in the process. During the past few years, more precisely in the 1990s, the sharing of the quota rents has become a significant topic in Icelandic political debate. While this debate is mostly concerned about reallocating quota rents by the means of taxes and does not necessarily question the appropriateness of the initial allocation, this unavoidably enters into the discussion. Therefore, it does not seem far from the truth to say that the various community groups, or more appropriately, the large part of the general public, now questions the fairness of the initial allocation of the quotas. However, perhaps it is not so much the fairness of the allocation itself - most people seem to realize that the vessel owners should be the ones to actually operate the fishery - but the allocation of the quotas without any provision for quota fees.

One particular class of community groups should be singled out in this respect: the inhabitants of fishing villages and towns from which quotas have been transferred. These are typically critical of the initial allocation of quotas and often suggest that their community should receive (or have received) its own local quota.

5.4 Hind-sight assessment

Should rights have been allocated differently, given hind-sight? In general the answer would be no. No other course was really feasible at the time. It has to be remembered that, at the time IQs and ITQs were introduced in the various fisheries, the fisheries were usually in crisis and there had to be substantial cutbacks in TACs.

In retrospect it seems that perhaps it might have been useful, at the time, to have undertaken two other actions:

i. Drawn attention to, and provided more information on, the long-term financial implications of the initial quota allocation.
ii. Defined the quota asset (right) in such a way that later concerns about equity and fair distribution could be more easily dealt with.

Assuming that the efficiency aspects of the ITQ system must not be compromised, this, of course, implies two diametrically opposite approaches: (a) provisions for a later taxation of the quota right and (b), unqualified property right protection for the quotas.

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