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Fishing for justice

In the late 1960's, following a decade of ever increasing catches, the herring stocks around Iceland had been almost depleted. A few years later scientists warned that the cod stock faced a similar fate, unless catches were severely reduced. The serious condition of the stocks served as a reminder that unchecked utilisation of a natural resource could not continue indefinitely and that open access would sooner than later have to give way to some sort of management. In the ensuing years, a quota system was introduced. In 1990, a comprehensive quota system was initiated in almost all the Icelandic fisheries. This paper describes the main attributes of the management tools introduced in each fishery, as well as the current management system. Special attention is paid to the treatment of social justice questions that have popped up time and again during the implementation of the ITQ regime in Iceland.

1. Introduction

In the late 1960's, following a decade of ever increasing catches, the herring stocks around Iceland had been almost depleted. A few years later scientists warned that the cod stock faced a similar fate, unless catches were severely reduced. The serious condition of the stocks served as a reminder that free fishing would sooner than later have to give way to some sort of fishery-management. In the ensuing years, a quota system was first introduced into the herring fishery, and a combination of effort and volume restrictions used to manage the cod fishery. Finally, in 1990, a comprehensive quota system was initiated in almost all the Icelandic fisheries. This paper discusses the historic development of the Icelandic cod and herring fisheries, the development of fishery management in Iceland and subsequent over-capitalization of her fishing industry. Special attention is paid to the treatment of social justice questions that have popped up time and again during the implementation of the ITQ regime in Iceland.

2. Cod and herring fisheries

Icelanders and foreign fishermen have for centuries exploited the rich fishing grounds of the Icelandic coast, with cod as the dominant species in terms of both volume and value. At the dawn of the 20th century the Icelandic fishing fleet was modernised with trawlers replacing decked vessels and motorboats replacing rowing boats. The new vessels could both handle a larger payload and had a far

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greater operational range than the old ones. In addition, they were able to utilise gear such as bottom trawls that hitherto had only been operated in Icelandic waters by foreigners.

Reliable catch figures exist for the period since 1905 and these show that both Icelandic and foreign catches skyrocketed from less than 100 thousand tons in 1905 to more than 300 thousand tons in 1938. Catches declined dramatically during both world wars as foreigners that frequented the Icelandic fishing banks were forced to use manpower and equipment in the war effort. In the post-war era, catches picked up again from the growth trend of the thirties and reached an all time high of some 500 thousand tons in 1958. During the 1950s, Iceland twice extended her fishing zone, to four miles in 1952 and 12 in 1958. Both extensions met stiff resistance from above all England, but also other European governments. The battle for complete control of the fishing grounds on the Icelandic continental shelf was continued in the 1970s, with the extension to 200 miles in 1975 signalling the end of foreign fishing. Since the last English vessels left the Icelandic fishing zone in 1976, domestic harvesters have had the fisheries almost completely to themselves.

Icelanders invested heavily in the fishing industry in the 1970s, both in vessels such as stern-trawlers and in land-based processing plants. At first, increased effort yielded increasing catches, with landings rising from 266 thousand tons in 1975 to 460 thousand tons six years later. Since then, cod catches have declined, despite several attempts to turn the trend around. In the summer of 2007, the quota for the fishing year 2007-2008 was set at 130 thousand tons, the lowest catches since 1922. The recovery is slow, the quota for the fishing year 2008-2009 was set equal to that of the fishing year before. The quota was increased by 30 thousand tons as a response to the collapse of the Icelandic banks in October 2008 (see Proposition of the Icelandic Government 20/2009). The Marine Research Institutes proposal for 2009-2010 is 150 thousand tons.

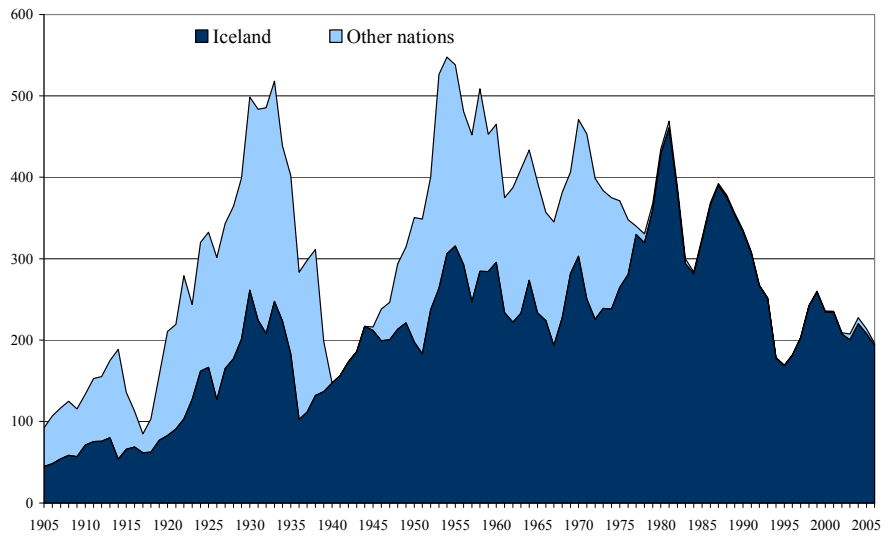


Figure 1 Cod catches in Icelandic waters 1905-2006. Thousand tons.
Source: Marine Research Institute 2008, Table 3.1.1.

The Icelandic herring fishery developed into a large-scale industry during the first half of the 20th century. Three main stocks were exploited; Icelandic spring spawning herring, Icelandic summer spawning herring, and the Atlanto-Scandic (Norwegian-Icelandic spring spawning) herring, with the last becoming the most important one in the 1960s. Icelandic catches ranged from 60 thousand to 220 thousand tons until 1961 when they escalated to a record figure of 370 thousand tons.² In 1966, catches reached an all time high of 770 thousand tons, which represented 47% of the value of maritime exports, constituting the bulk – over 90% – of exported goods. And then catches plummeted. First to 440 thousand tons in 1967, and then even further to 96 thousand tons in 1968 and a mere 24 thousand tons in 1969, 3% of the record figures of just a few years earlier. In short, the herring fisheries were in a state of collapse.

² These figures include all catches of Icelandic spring and summer spawning herring and Icelandic catches of Atlanto-Scandic herring.

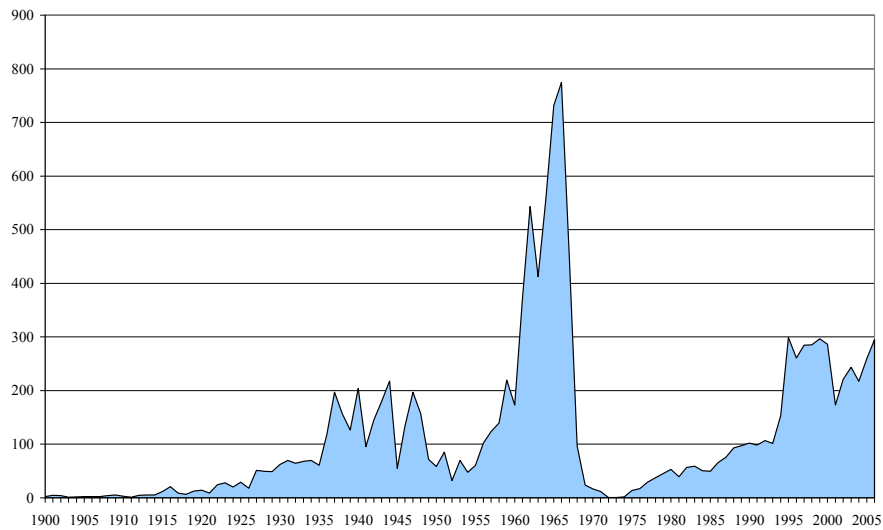


Figure 2 Herring catches in Icelandic waters 1900-2006. Thousand tons.
Source: Icelandic historical statistics, Table 5.8 and Marine Research Institute 2008, Tables 3.19.1 and 3.19.8.

3. Search for manageable management system³

The fate of the herring stock showed Icelanders that although national control of the fishing grounds might be a necessary condition for sustainable management of the aquatic resource it was far from sufficient. In October 1975, the Icelandic Marine Research Institute (MRI) issued a “black report” on the state of the cod stock. The initial response was to reduce the total allowable catch (TAC) which was resolutely overfished, as no sanctions were induced to avert overfishing. Effort restrictions were next in line, with the Ministry of Fisheries stipulating measures in 1977 aimed at limiting cod catches. Each trawler was banned from fishing cod for 30 days a year, all other vessels had to accept a one week ban, and attempts were made to ban further increases of the fishing capacity of the fleet. The introduction of these measures coincided with the entrance of big year-classes into the fish-able stock. Hence, the cod-stock grew leaving politicians and the MRI free to worry about other things. Vessel owners soon learned how to expand fishing capacity of existing vessels without violating the capacity restrictions in effect. Thus, the capacity of the fishing fleet grew without much restraint effort on behalf of the fishery managers.

It soon became clear that despite the effort restrictions the cod fishery was being mismanaged. Catches usually far exceeded the TAC, while the restrictions also led to greater fishing of other demersal species, increasing the pressure on species such as haddock, saithe and redfish. The system was also economically wasteful. Environmental conditions in the ocean deteriorated in the early 1980s leaving the effort restrictions inadequate as measure of keeping the cod stock at a sustainable level. In addition, prices

³ For a more detailed account consult Matthiasson (2003).

on foreign markets had fallen, and most of the harvesting companies were experiencing severe operating losses. The processing industry was doing only slightly better.

As mentioned above, the herring fisheries had collapsed around 1970, and in 1972 all gear except driftnets were banned in the fisheries. Since purse seine had been the most widely used gear, while the use of driftnets had been very limited, the new restrictions really amounted to a moratorium on herring. In 1975 the ban on use of other gear, including purse seine, was lifted and each purse seiner allocated a quota. Vessels using driftnets were, however, not subject to a quota. In 1977 all vessels taking part in the herring fisheries were allocated quotas, and in 1979 the quotas became transferable. Transferability was introduced to reduce the cost of fishing, but in many cases the allotted quota was less than expected catch in one trip to the fishing ground. The management system remained relatively unchanged in the next decade, and was finally merged into the new comprehensive system in 1990 (see below).

In the autumn of 1983, a government advisory committee was formed to analyse the state of the fisheries, and to propose new methods to deal with the problems at hand. The general view was that the time had come to abandon effort restrictions and, instead, turn to a quota system. These ideas had gained considerable ground, both among fishermen and vessel operators, not least because of the success of the quota systems in the herring and capelin fisheries that had been put into place in the 1970s. These enhanced management methods were discussed at the meetings of the Fisheries Association of Iceland during 1983, with the meeting embracing these views.

Their proposals were later adapted by The Icelandic Parliament (*Alþingi*) and on December 22nd 1983, Parliament passed an amendment to the Fisheries Act of 1976, which gave the Minister of Finance discretionary powers to introduce an individual vessel quota system, as well as to restrict entry through licensing.⁴ Central to this Act and the associated Decree 44/1984 was that all vessels of 10 GRT or more were allocated quotas in the cod fishery and six other important demersal fisheries based on their overall catch record in the period from 1st November 1980 to 31st October 1983. Quotas were, though, only allocated to ships that had been active in the period from 1st November 1982 to 31st October 1983 and were still in operation. These vessels were issued with a fishing permit. Allowance was though made for vessels that had been out of operation due to repairs or other accepted reasons. Although the quota system was the dominant idea behind this new management regime, the effort restrictions were not abandoned altogether. Owners of new vessels or vessels that had been in operation for less than 12 months of the reference period could choose between obtaining an average quota for similarly sized ships and abiding by effort restrictions. Similar rules also applied to vessels that had changed hands, or in cases where a new captain had taken over the ship. Transfers of quotas were allowed to some extent. The system was intended as a preliminary measure for one year at a time.

The opening up of the effort quota window paved the way for an increased role for such quotas each time the system was up for approval for an additional year.

⁴ Act nr. 82/1983.

Parliamentarians, vessel owners and other stakeholders understood that a hybrid output and effort quota system was not the right recipe for stability. Hence, in 1990 the parliament discussed and accepted Act 38/1990 which marked the introduction of a comprehensive quota system and made quotas permanent. At that time, it had also become self-evident that excluding a substantial part of the fleet from management was not a very wise move. Thus, the system was extended to cover all vessels bigger than 6 GRT. However, a loophole was opened for the smallest vessels, the rather large fleet of open boats.

4. Overview of the current Icelandic ITQ system

The current ITQ system in the Icelandic fisheries is based on the Fisheries Management Act of 1990 and subsequent amendments.⁵ At present the ITQ system applies to 25 different fisheries, which represent about 98% of landed value.

The Ministry of Fisheries and Agriculture determines the TAC for the next fishing year⁶ for each of the fisheries, after consultation with the Marine Research Institute, which puts forward its recommendation each year in a report describing and discussing the current status of the fish stocks. A valid fishing licence is needed to take part in the fisheries. There now exist two different types of licences; quota licences and hook-quota licences, with the latter only open to boats smaller than 15 GRT. The hook-quota licences derive their name from the fact that bottom longline and hand line are the only fishing gear allowed.

In the ITQ system a clear distinction is made between two types of quotas; TAC-shares and annual catch entitlements (ACE). The former is also sometimes called permanent quotas. Each vessel is allocated a percentage share in each of the fisheries the vessel is entitled to take part in. Once the TAC for each fishery has been set, the ACE of each vessel is simply calculated as the product of the TAC-share of the vessel and TAC. Thus, a vessel with a 1% share in a certain fishery will be allocated an ACE of 1.000 tons if the TAC is 100.000 tons, but only 500 tons if the TAC is 50.000 tons. All quotas are denominated in cod-equivalent terms, as the cod fishery is by far the most important fishery. Cod-equivalents for each quota-year are determined on the basis of the average unit value of the landings of each species the year before, and provide a measure of the relative value of individual species compared to cod.⁷

The initial allocation of the permanent quotas is discussed below, but the Act states that when a TAC is introduced into a fishery that has not been restricted before, TAC-shares will be allocated on the bases of each vessel's catch history in the previous three years. Quotas may only be allocated to vessels.

⁵ Act nr. 38/1990.

⁶ The quota-year runs from September 1st to August 31st.

⁷ The cod-equivalents are thus based on the ex-vessel price of a kilo of fish of a given species relative to the ex-vessel price of a kilo of cod. Thus, holding a given amount of cod-equivalents of cod, say, can give more value added than holding the same amount of cod equivalents of haddock or saith, say.

The TAC-shares are almost completely transferable, the only restrictions applying to cases when shares are transferred to a firm in a different community. Then the community where the seller is located has the right to buy at the negotiated price. This provision has though seldom been utilised as municipalities have not had funds or political willingness to intervene. The TAC-shares are completely divisible. By contrast, only half of the ACE of each vessel may be transferred in a single quota-year between vessels of different ownership. Offsetting transfers of different species with equal value are, however, not subject to any such restrictions. Thus vessel owners are forced to harvest at least half of their quota allocations measured in cod-equivalents each quota-year. If the utilisation is below 50% for two years running the vessels forfeit their TAC-shares. Allowance is though made for damages incurred or substantial repairs. Quotas – both TAC-shares and ACE – may be transferred from vessels in the quota system to vessels in the hook-quota system, but not the other way around, i.e. from smaller to larger vessels.

There is an upper limit or ceiling on the TAC-share holdings of each harvester and related firms or individuals. The limit varies from 12% for cod to 35% for redfish. In most cases though there is a 20% ceiling. In addition, the combined TAC-shares of each firm in all fisheries must not exceed 12% of the total value of the TAC, measured in cod-equivalents. The corresponding ceiling in the hook-quota system is 5%.

There is considerable flexibility in the two quota systems. Thus, catches may exceed ACE in some of the demersal fisheries, provided quotas are larger than catches in others. This does, however, not apply to the cod fishery. Up to 20% of quota holdings in most fisheries can be transferred between fishing years. Finally, should catches exceed quotas in any fishing year, the quota allocation of the subsequent year is simply reduced correspondingly. The over-fishing may range between 3 and 5%, depending on the fishery involved.

Problems with “grandfathering” and transferability

Quotas for demersal fisheries were allotted in 1983 as a part of a temporary solution to the overfishing problem. The allotment was based on catches during the previous three years with exceptions in case of irregularities regarding ship or captain as already alluded to. Allotment of quotas in pelagic fisheries and in shrimp fisheries did not necessarily follow the same rules. Quotas for herring were initially distributed equally between eligible vessels. Half or more of the capelin quota was distributed equally between vessels, while the rest was distributed according to the cargo capacity of each vessel.

The methods used to allot quotas were assumed to be temporary. A rudimentary market for temporary as well as permanent quotas soon developed. With increase in trade in quotas, some people became worried that the development was getting out of hand and started voicing their discontent. Other critics pointed out the lack of social justice, as vessel owners in small communities were handed valuable quotas for free and could rent or sell the quota out of the community. In the process, the quota owners collected substantial fees, while those previously engaged in the

harvesting and processing industry – fishermen and workers – collected unemployment insurance. Many also feared that the free transfer of quotas would put concentration in the industry on a fast track, transforming recruitment and family traditions.

In order to meet this criticism, a new sentence was added to the opening paragraph of the Fishery Management Act in 1988. This sentence states that “[T]he fish stocks around Iceland are the property of the Icelandic people”. This declaration has been kept in all subsequent revisions of the Fishery Management Act. Further, the first article of the current Act states that the fish stocks in Icelandic waters are the common property of the Icelandic people, and that allocation of ITQs to individual harvesters does not represent irrevocable property right in these TAC shares.

The catch fee

According to an amendment to the Fishery Management Act passed by Icelandic Parliament (Althing) in 2002, the vessel owner holding a quota right is required to pay a catch fee (*veiðigjald*). The institution of the catch fee can be explained as an effort aimed at reducing the tension caused by free allotment of quotas. A detailed account of the political process leading up to the introduction of the catch fee is given in Matthiasson (2008). The catch fee is levied yearly as a given amount per cod-equivalence kilo. The amount is to reach 9.5% of estimated resource rent. The resource rent is estimated according to a formula given by the act of law. The formula can be motivated with references to economic theory. As the catch fee was instituted a number of other levies accruing to the public purse were discontinued. Hence, the income from the catch fee did not constitute totally fresh money for the public coffers. Three important observations can be made: First, the catch fee has so far been in the range of 0.6–1.6% of rental price of quotas. The rental price is by many seen as a proxy for the resource rent. Second, the catch fee has not reduced tension caused by free allotment of quotas. But, third, the catch fee is a pioneering exercise both in the Icelandic and the international context. The institution of the catch fee forebodes a road possibly taken when other publicly owned resources are handed to private users in Iceland in the future.

5. Securitization of the Icelandic fishing industry

Using allotted quota as collateral against loans was not allowed until 1997. The provision is circumventational: Act 75/1997 states that a lender must be notified if quota allotted to a vessel is to be departed from the vessel permanently and the vessel is used as collateral against the loan. The requirement that lenders are notified when quota is moved permanently from a vessel was put in place to guard lenders financing acquisition of quota against losses. The majority in Althingi was thus reacting to reluctance on behalf of financial institutions to provide funds to finance quota acquisitions in wake of incidences where permanent quota had been moved from a vessel used as collateral without the consent or knowledge of the lender.

Using quotas as collateral opened up the possibility for new firms to finance their acquisition of permanent quotas. It also opened up the possibility for older firms to expand their balance sheets and diversify into other sectors.

Table 1: Aggregated assets of the Fishery Sector in Iceland, billions of ISK, current prices.

	2007	2009
Current assets	78	100
Fixed assets		
Investments and long term claims	100	0-100
Property, plants and equipments	90	150
Booked quota	150	150
Other assets	16	0
Total booked assets	434	400-500
Non-booked quotas	450	150
Total assets, booked and non-booked	884	550-650
Current liabilities	80	150
Long term liabilities	245	500
Booked equity	110	-250 to -150
Booked liabilities=booked assets	435	400-500
Non-booked equity	449	150
Total liabilities (with non-booked equity)	884	550-650
Memo: Booked and non-booked equity	559	-100 to 0

Source: Statistics Iceland and authors own calculations

Table 1 illustrates some of the consequences of grandfathering of quotas on the structure of the balance sheets of the Icelandic fishing firms. First consider the aggregate balance sheet for 2007. It is important to note that the Icelandic tax code forbids fishing firms to book the value of quotas in their command on the asset side of the balance sheet unless paid for. Bought quota is booked at historical prices even if other entries on the balance sheet are entered on book-to-value basis. Hence value of quota on the books of fishing firms is a far cry from the real value of quotas at the market for permanent quotas. The non-booked quota under the command of a fishing firm is an economic reality for the firm in question, none-the-less. The value of quotas that is not accounted for in the books of the fishing firms is taken into account in table 1 with the entry: "Non-booked quota". It is the difference between the value of quotas using current price of permanent quotas as opposed to the historical price of quotas that have been subject to trade in the quota market. In 2007 the value of booked quotas was 150 billions of Icelandic krónur while the value of non-booked quotas was 450 billions of Icelandic krónur. The total value of quotas was 600 billions of Icelandic krónur or approximately 40% of GDP in Iceland at that time. The balance sheet shows that the value of current assets and plants and equipment was approximately ISK 168 billions in 2007. Total assets were more than twice that amount with room for an expansion of hundreds of billions of

krónur, depending on how high debt to collateral value the lenders would be willing to accept.

The estimate for 2009 serves two purposes: First of all to show how the collapse of the Icelandic financial and economic sector has affected the asset side of Icelandic fisheries and secondly to show the pitfalls introduced into fisheries by grandfathering quotas for free. Note that the balance sheet contracts by 200 to 300 billions of kronur between 2007 and 2009 due to lower quota prices. The contraction of equity is more dramatic. The reason for that is that the value of long-term liabilities doubles over those two years in krónur due to the depreciation of that currency.

The lessons are numerous. Firstly, grandfathering quotas for free expanded the balance sheets of the fishing firms far beyond what would be needed for the fishing operation through securitization of the grandfathered quotas. Secondly, the boosted balance sheets make the fishing firms exposed to changes in the climate in the financial sector. Thirdly, if no governmental action is taken most of the resource rent in the fishery in Iceland will by certainty accrue to the owners of fishery firm debt for the foreseeable future. Fourthly, grandfathering ITQs introduces the problem of securitization into the fishery. Fifthly, some form of rent capture would have alleviated the securitization problem.

6. The ruling of the UN Human Rights Committee

The institution of the ITQ system has been challenged in Icelandic courts on several occasions. In 1998 the Supreme Court of Iceland ruled it unconstitutional to restrict the right to fish to those holding a title to a vessel during a specific period of time (the so-called Valdimar case, named after the person who raised the case). A second ruling of the Supreme Court stated that the Ministry of Fisheries could, however, allocate ITQs to a restricted group of people (the Vatneyri case, after the name of the vessel used to challenge the Fishery Management Act). There may be a thin red line of legal reasoning connecting the two rulings, but most people did see them as contradictory. In the aftermath of the Vatneyri-case, two fishers, who by coincidence were not eligible for quota-allotment at the outset of the quota exercise, deliberately disobeyed the law after having been denied quota based on equal treatment arguments. Icelandic courts did not accept their equality arguments and rejected the reasoning of the two fishers. Hence, the two fishers brought their case for the UN Human Rights Committee. The Committee ruled in October 2007 that the initial allotment of quotas had been a violation of the equality principle embedded in the International Covenant on Civil and Political Rights. The Committee furthermore ruled that the two fishermen should be compensated for their losses and that the rules of the Fishery Management Act should be brought into line with the spirit of the Covenant on Civil and Political Rights. The government of Iceland, which was given 180 days to prepare its actions, announced that compensation would not be paid but that the government would be willing to consider a long term plan for

directing the Icelandic Fishery Management System into the course given by the Ruling of the UN Human Rights Committee. The Government also proposes a communication process with the Committee regarding the adequacy of the actions taken, see Ministry of Fisheries and Agriculture (2008).

Many critics of the grandfathering rule used to meter out the initial rights to fish in Iceland have pointed to various measures that could be taken to meet the requirements of the Human Rights Committee. The most extreme would be to auction permanent or temporary rights. This would be similar to Ronald Reagan's auctioning of oil-drilling rights in US coastal waters in 1982 (see Wenar, 2008, p. 10-11). Less extreme would be some form of yearly recall of quotas. Recalled quota would then be auctioned or rented. Lastly, the catch fee could be increased. This last method is alluded to in the reply of the Government of Iceland to the Human Rights Committee.

The center-right government in power in Iceland in October 2008 collapsed in the wake of the bankruptcy of the Icelandic banking system in January 2008. After elections in April 2009 a center-left government was formed. One of the points on that government's to-do list is to amortise grandfathered quota in linear fashion over a period of 20 years. The vessel owners have protested aggressively.

7. Conclusions

As an exercise in implementing ITQs, the introduction and development of the Icelandic fisheries management system has been a success in some respects, but left proponents disappointed regarding other aspects.

One of the major successes of the system is how comprehensive and all-inclusive it has become. It did not take a long time to develop an exhaustive quota system for the pelagic species, herring and capelin, but establishing a comprehensive quota system without loopholes in the more valuable demersal fisheries did prove a harder nut to crack. While Icelandic fisheries authorities did manage to keep catches within the allocated quotas in the quota part of the system, management by effort restrictions has clearly been proven inadequate. Hence, it may be concluded that the Icelandic experiment proves that ITQs are superior if the aim is to control catches in a predictable manner. The Icelandic experiment also shows how difficult it can prove to ease all stakeholders in a fishery into acceptance of the system when the fleet in question is very segmented. The Icelandic fleet included ships as varied as small open boats registering a few tons to vast freezer trawlers that could stay at sea for weeks. The ITQ system has also delivered on the promise of reducing average harvesting costs.

When the quota system was introduced it was believed that the most valuable stocks, primarily cod, could be rebuilt and that stronger stocks would lead to higher catches. This has not materialised. Indeed, cod catches are now only half of what they were in the early 1980s. Although the quota system, as such, can not be blamed

for this disappointing development, opponents of the ITQs system have frequently cited this as one of the prime reasons for abandoning the quota system and reverting to different management methods.

Grandfathering of quotas has proven to open up for massive securitization of the Icelandic fishing industry. In the wake of the current economic crises in Iceland it is obvious that securitization will present the fishing industry with hard-to-solve problems for years to come. The Icelandic experience could serve as important lesson for countries that are yet to restructure their fishery management systems: Introduction of some form of rent capture to restrict securitization of the quotas may be a necessary part of any ITQ based reform.

Lastly, the strong sentiment towards grandfathering quotas came as a surprise to the advocates of the ITQ system. The quota system has been the theme of discussion in several general election cycles and a whole political party was founded on the agenda to change the system in fundamental ways. The longevity of the loopholes for small vessels can be seen as an attempt to defuse political threats against the idea of using transferable quotas as a management device.

So far Icelanders have not experienced stakeholder conflicts based on environmental interests (leaving food for birds or whales) or recreational interests (the tourist industry). Those interests will inevitably gain momentum in years to come. It will be interesting to see if the Icelandic system is flexible enough to accommodate those without fundamentally compromising its essence.

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