

## WHY IS IT DIFFICULT FOR GOVERNMENTS TO MOVE TOWARDS USING MARKET-BASED INSTRUMENTS IN FISHERIES?

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### **Abstract:**

It is generally recognised that market-based instruments have a strong role to play in improving the efficiency of fisheries management. However, the move towards using market-based instruments in fisheries is relatively slow in many OECD countries, despite the commitment towards using market-based instruments as an overarching goal for OECD countries. As a result, environmental, social and economic outcomes from the fishing industry often remain unsatisfactory. To examine this issue further, the OECD Committee for Fisheries decided to launch a study focussing on the use of market-like instruments/incentives as part of its current programme of work. Following a brief introduction recalling various international commitments towards using market-based instruments in fisheries, the paper first presents the current situation regarding the implementation of market-based management systems. The paper then explores the potential obstacles to policy reform in the fisheries sector. Based on these observations, the paper finally explores the reasons underlying the OECD Committee for Fisheries' decision to launch this new study. The methodology is outlined, as well as the expected outcomes.

Key words: Market instruments, fisheries management, policy reform, OECD.

### **Introduction:**

For many years now, it has been well known that market-based instruments potentially have a strong role to play in improving the efficiency of fisheries management (Cunningham et al., 1985). *Stricto sensu*, market-based instruments imply the creation of markets of rights or permits. These rights or permits are characterised by the following attributes: (i) the exclusive right to use, (ii) the right to profit and (iii) the right to sale. In fisheries, the most widely used type of market-based instruments is the Individual Transferable Quotas (ITQ). However, a range of market-based instruments exists, including, inter alia, Individual Transferable Licences<sup>2</sup>.

The central argument for using market-based instruments in fisheries management can be summarised as follows. By clarifying the use rights, these management instruments resolve the externalities at the heart of the fisheries management system (OECD, 1993). When fishers have an individual right to catch a certain amount of the common resource, they have an incentive to stop "racing for fish". In particular, they won't have to fear that the fishery will close before they have caught their share. This makes it possible for them to plan their fishing activities according to the cheapest way to fish and to market conditions. In doing so, individual behaviour is expected to lead to a social optimum, where the fishing activity maximises the resource rent (i.e. the Maximum Economic Yield). In addition, it is expected that owners will be more concerned about the future of the resources than users, because the condition of the resources in the future determine the value of their right. The fact that the fishing industry has a stake in the fishery could then help in the implementation of the management system and its enforcement (OECD, 1993). A further

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<sup>2</sup> Individual Transferable Licences Systems have been introduced in various OECD Member countries (incl. Australia, UK, etc...). However, due to the scarcity of the information available, the discussion focuses on ITQ systems.

positive aspect is that market-based instruments may also give fishers an incentive to provide fisheries managers with good quality information. A last argument for using market-based instruments in fisheries management relates to the potential of such a system to reduce the administrative costs (OECD, 1992).

Accordingly, many countries commit themselves to move towards using market-based instruments in fisheries management. Such a commitment was reaffirmed, for example, by OECD Governments at the 2001 OECD Ministerial Council Meeting (MCM). Paragraphs 14 and 15 of the MCM Declaration says, *inter alia* (OECD, 2001):

“14. [...] The report emphasises the need for sound analysis based on strong science that considers the full range of policy instruments and associated costs and benefits. We endorse the policy recommendations derived from it:

*Make markets work:* All OECD countries should make better use of market-based instruments and combine them effectively with regulation. [...]. The implementation of instruments such as tradable permit systems, environment-related taxes, and the phasing out of support programmes that are environmentally damaging in agriculture, fisheries, transport, energy, manufacturing and elsewhere, should be pursued, and applied according to national circumstances. [...]

*Manage natural resources:* The market prices of natural resources must reflect the full environmental and social costs and benefits of economic activity, to take better account of non-market values and long-term impacts. Progress requires improving the knowledge base through research on environmental thresholds and non-market values, making markets better serve conservation goals, and reducing the net costs of waste flows. [...]

“15. OECD will continue to assist governments by: [...] identifying how obstacles to policy reforms, in particular to the better use of market-based instruments, and to the reduction of environmentally harmful subsidies, can be overcome; and deepening its analytical work on these instruments; [...]

Some OECD countries have been implementing market-based instruments for many years. A brief overview of the current situation is provided in part 1. Part 2 presents and discusses some of the potential obstacles to the move towards using market-based instruments. Based on the observations, part 3 explores reasons for the OECD Committee for Fisheries' decision to launch a new study, the methodology and expected outcomes.

## **1. A slow move towards the use of market-based instruments in OECD fisheries**

Among OECD, six Member countries are currently using Individual Transferable Quotas system to manage their fisheries (OECD, 2003)<sup>3</sup>. In **Australia**, the ITQ system dates back to 1984 when ITQs were introduced in the southern bluefin tuna fishery. Since then, ITQs have been introduced in several other fisheries, namely the Tasmanian and South Australian abalone fisheries, the Western Australian pearl shell fishery, the Western Australian pilchard fishery, the South East trawl fishery (20 species), the South East trawl fishery (16 species), the Torres Strait fisheries and, more recently, the Southern shark fishery (01/01/2001). In **Canada**, the ITQ system represents 50% of the landed value (OECD, 2003). Fisheries management in Canada is conducted through various means, including by giving specific percentages of the quota to individuals or businesses in the form of Individual Quotas (IQs), Individual Transferable Quotas (ITQs) or Enterprise Allocations (EAs). In most cases, transfers are allowed, although they are constrained to some degree. Canada's experience with IQ management dates back to 1972 with the introduction of IQs in the Lake Winnipeg fishery. By 1980, 4 more Canadian fisheries were under IQ management. During the 1980s, an additional 15 fisheries came under IQ management, and 3 more have been added since then bringing the total to 23 fisheries. In **Iceland**, the fisheries are covered by the ITQ system, although there are some exemptions from the ITQ system for the “very” small-scale fleet. The ITQ system was first introduced in 1979, in the herring fishery, under the form of transferable vessel quotas. In

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<sup>3</sup> Some OECD Member countries, including Portugal, Italy and the UK also use ITQ systems for very specific fisheries (e.g. under NAFO jurisdiction; OECD, 1993). Among non OECD countries, Chile also uses an ITQ system.

1984, a system of individual transferable vessel quota was introduced in the demersal fishery. In 1986, in conjunction with the increasing transferability of demersal vessel quotas, capelin vessel quotas became also partly transferable. In 1990, a complete, comprehensive ITQ system was implemented in all fisheries. In the **Netherlands**, 5 species are currently included in the ITQ system (sole and plaice; herring; mackerel; roundfish). The ITQ system dates back to 1975 when IQs were introduced. In 1994 the system was extended with ITQs for cod and whiting. In 1993, eight “Management groups” were established and a system of quota co-management was put in place. In **New Zealand**, the Fisheries Amendment Act passed in 1986, creating New Zealand’s ITQ system, named the Quota Management System (QMS). Modifying legislation has been passed several times since, but the basic structure of the system has remained intact (Kerr, 2003). In 2000 there were 45 species (290 separate fish stocks) managed under the QMS. Landings of QMS species accounted for 494 049 tonnes on a total of 536 200 tonnes (92% of the landed volume from EEZ). In the **United States**, 3 fisheries have been managed with ITQs since its introduction in 1990: the halibut / sablefish fishery; the South Atlantic wreckfish fishery and the Mid-Atlantic surf clam / ocean quahog fishery. In 1996, US Congress placed a moratorium on the establishment of new ITQ programs because of concerns with the impact of such programs on both fishers and the marine environment. Although the ban was lifted in 2002, no new ITQ program was introduced to date.

Following the introduction of ITQ systems in these OECD countries, some positive effects have been observed, especially concerning the economic and the biological aspects of fisheries<sup>4</sup>. A synthesis of the main outcomes can be found, inter alia, in two OECD documents.

→ *Property rights modifications in Fisheries* (OECD, 1992): This early survey of ITQ systems validated the theoretical predictions in most of the cases, i.e. that the problem of overcapacity – and attendant unprofitability – was solved or alleviated, catches improved in quality and were realised in a more sustainable manner.

→ *Towards Sustainable Fisheries* (OECD, 1997): This more comprehensive survey proposes a comparative analysis of the effects of different management instruments. It also validated the theoretical predictions in most of the cases, i.e. that the introduction of ITQ system could lead to an improvement of the stocks, clearly reduces the “race for fish” behaviour, clearly improves the quality of the catches, and thus clearly improves the profitability of the fishery.

Despite these positive outcomes, the move towards the use of market-based instruments in fisheries management remains slow in OECD countries. Yet, according to various reports published in 2000/2001, most fisheries are considered to be overexploited from an economic point of view (OECD, 2003). The poor biological, social and economic fisheries situation was recalled at the World Summit on Sustainable Development, where governments reaffirmed the need to achieve sustainable fisheries (paragraph 30 of the Declaration), in particular by implementing the FAO Code of Conduct for Responsible Fisheries.

A legitimate question then arises: given both such an overall “unsatisfactory” situation and the potential interest of market-based instruments, why is it difficult for governments to move towards the use of market-based instruments in fisheries? The following section addresses this question, by reviewing some of the potential obstacles to a move towards the use of market-based instruments.

## **2. Identification of some potential obstacles**

### ***2.1. Technical / Practical issues***

2.1.1. One obstacle to the use of market-based instruments consists in the lack of ex-ante information that is necessary to define the Total Allowable Catch level, i.e. the cap within which individual allocation should be realised. This encompasses, inter alia, biological uncertainty and often poor cost data (OECD, 1993). For example, when ITQs were introduced in New Zealand in the orange roughy fisheries, productivity of the stocks was overestimated and CPUE declined markedly during the late 1980s.

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<sup>4</sup> Social aspects have generally been less discussed, with the exception of the effects on employment.

2.1.2. A second obstacle refers to the fact that most fisheries around the world are multispecies, i.e. characterised either by biological interaction (prey-predator relationships) or technical interaction (joint production). This obstacle relates to discarding, highgrading and bycatches issues, as under ITQs, fishers may have an interest to discard unwilling catches in order to maximise the value of the quota (see Copes, 1986; Squires and al., 1998, for an overview).

2.1.3. A third obstacle consists in the lack of ex-post information allowing for a global assessment of the use of market-based instruments. Many official documents and academic publications obviously report on ITQ experiences, but the information is often sparse and non comprehensive. Debates are thus still occurring on the efficiency of the use of market-based instruments in some fisheries, but based on partial evidence of positive outcomes.

2.1.4. A fourth obstacle refers to the cost of implementing and operating the management system. In this regard, transaction and surveillance costs may be dissuasive. Transaction costs are likely to be influenced by various factors, including institutional characteristics, size, liquidity of the market, etc. Surveillance costs are especially linked to compliance behaviour.

## **2.2. Distributional issues**

Various distributional issues have been identified as potential obstacles to move towards using market-based instruments in fisheries (see Guyader and Thébaud, 2001, for a recent overview). These obstacles refer mainly to equity and rent-seeking issues, as it can be perceived that the implementation of ITQ system is likely to modify the wealth distribution, including through advantaging some participants over others.

2.2.1. One issue relates to *the initial quota allocation* process. The problem is to select the “legitimate” users of the resource (or the “legitimate” stakeholders), while ensuring that all players perceive the allocation as “acceptable”. This potential obstacle can occur at different levels:

- At the harvesting sector level, this distributional issue not only concerns allocation among active vessels, but also allocation among vessel owners and crew members. In this regard, an additional problem may arise when many participants consider a major attraction of fishing rights to be the privileged access that status as fishers gives to social schemes such as unemployment insurance (e.g. in Canada, OECD, 1992).
- At the fishing industry level: it may happen that different groups co-exist within the fishing industry, e.g. the catching sector and the processing sector. If one group (e.g. the latter) feel to have a right to the fishery, it is likely to block the implementation process as long as it is not considered as a legitimate stakeholder of the fishery, with appropriate rights (e.g. see Matulich et al., 1996).
- At the economy level: in addition to the fishery sector, various groups may also feel to have entitlement to the fishery: recreational fishers, extracting industry, environmental groups, etc. Any of these groups can potentially block the move towards using market-based instruments, as long as it is not fully recognised as a legitimate stakeholder.

2.2.2. A second issue, albeit linked to the first one, relates to the *rent allocation*. In theory, the implementation of a market-based system could be a way for a state to collect the resource rent. As fishers are used to free access, the imposition of such a new cost can meet a strong resistance from the catching sector, and in doing so can represent an obstacle. One solution to this obstacle can be to allocate the right freely to the active participants. However, such a solution may be itself a cause of resistance for other stakeholders, including recreational fishers, extracting industry, environmental groups, as well as citizens.

2.2.3. A third issue relates to the “*rent monopolisation*” tendency, i.e. the ownership concentration that could take place following the initial allocation, as a result of market forces. While such dynamics can be

expected efficiency reasons this issue remains sensitive in fisheries<sup>5</sup>. The central argument, constituting a potential obstacle, is that indigenous, traditional and small-scale fishers can be pushed out of the industry by larger fishing enterprises, squeezing them out of their livelihood and employing them as hired hands. An additional argument is of geographical nature, as a “*wealth displacement*” may accompany the concentration process (i.e. the “multiplied wealth” generated by the fisheries sector is likely to leave the community).

### **2.3. Governance issues**

2.3.1. One governance issue relates to the fact that the primary objective of fisheries management is not necessarily always economic efficiency. The multi-purpose nature of fishing activity has been identified for many years now (Crutchfield, 1973), and some authors showed that priority was often given to social / employment considerations (see for example Hannesson, 1985, for the Norwegian case; Boude et al, 2001, for the European Community case). In such cases, i.e. when the primary management objective is employment, ITQ systems can seem inappropriate. However, it should be noted that in some circumstance, e.g. when stock is at a very low level, the move towards market-based instruments could lead to a win-win situation, as the rebuilding of stock would also allow sustainable fisheries exploitation, and thus sustainable employment.

2.3.2. A second issue relates to the fact that in some countries, either for historical, cultural or political reasons, the introduction of a “pure” market of fishing rights /permits is not allowed by law<sup>6</sup>. This feature may be primarily explained by the specific status of fish resources, which are considered in some country to belong to the society as a whole<sup>7</sup>. In particular, the privatisation of living marine resources may face strong ideological opposition in some countries. The role of the State may thus be perceived differently in the fisheries sector, especially when foreign investments are at stake (OECD, 2002).

2.3.3. A third issue relates to the public choice paradigm (Buchanan and Tollison, 1972). This theoretical body states that when pursuing the aim of being re-elected, governments often try to minimise the financial and social cost of their decision. In fisheries, this fact can be exacerbated by the almost inevitable temporal gap between the immediate costs of introducing a new policy and the future benefits of the reform process (Mardle and Pascoe, 1999; OECD, 2000). In this regards, some governments may wish to avoid social unrest that could accompany reform (e.g. the strike of Icelandic fishermen in 1994 and 1995, Guyader and Thébaud, op.cit.). An incentive to keep the *status quo* can also be reinforced by the pressure exerted by some stakeholders, as a result of rent-seeking behaviour.

2.3.4. A fourth issue relates to the fact that in some cases, the decision not to introduce ITQs is that some alternative system is preferred, even if it doesn't provide “optimal” outcomes. Norway, for instance, has a large experience in operating IQs but introducing transferability into the system has proven a very sensitive issue. This “satisficing” behaviour (according to Simon's concept of bounded rationality Simon, 1972) can be explained by the fact that setting up a new regime calls for considerable investment in time and energy. Not only did public managers find it necessary to refine and adapt the regime constantly as it was being introduced, but they also have to provide explanations and discuss with all the stakeholders on an on-going basis. In turn, it may be stated that a “crisis” constitutes an essential ingredient for the successful introduction of ITQ (OECD, 1992).

Thus, despite their theoretical interest, the introduction of market-based instruments in the fisheries sector is confronted with various obstacles. The OECD Committee for Fisheries has therefore decided to launch a new Study gleaning evidence from ITQ systems over the last 30 years in a transparent and comprehensive manner. The details of the Study are provided in the next section.

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<sup>5</sup> The need for concentration is in general well recognised in other economic sectors at least up to a given point

<sup>6</sup> For example, tradability of fishing licences is not permitted by the French law

<sup>7</sup> Even if the *de jure* status of the marine resource is *res nullius* in the positive law.

### **3. The OECD Study on market-based instruments**

As part as its 2003-2005 Programme of Work, the OECD Committee for Fisheries decided to undertake a study aiming at:

- Discussing how reform towards the shared objective of sustainable and responsible fisheries of fisheries management can be constructed using market-like instruments/incentives.
- Exploring the different ways Member countries have used such instruments
- Exploring the different ways Member countries are dealing, or have dealt, with the inevitable tradeoffs between competing interests of stakeholders in the fishery during the reform process.
- Understanding obstacles and incentives to use market-like instruments/incentives, including how different fishing/non-fishing interests are treated in the process.

#### **3.1 Scope of the Study**

By referring to the concept of *market-like instruments/incentives*, the OECD Committee for Fisheries decided to enlarge the analysis to any management instrument the introduction of which led to some of the positive outcomes which might be expected when using “pure” market-based instruments, rather than focusing only on “pure” market-based instruments themselves. In doing so, the Study is expected to cover, *inter alia*, instruments able to modify the “race for fish” behaviour, and in particular those characterized by some (but not all) property rights attributes, such as individual quotas, community-based rights, territorial use rights (TURFs), etc. In other terms, the Study will analyse how some management instruments may act as a market-based instrument in achieving the objective of sustainable and responsible fisheries<sup>8</sup>.

#### **3.2 Detailed objectives**

**Objective 1:** To investigate the observed effects of the implementation of market-like instruments/incentives, with respect to the three pillars of sustainable development:

- **Environment:** relative efficiency of the different instruments with respect to preservation of fish stocks and ecosystems impacts (e.g. the effects on by-catch, the marine benthos, marine pollution, gear use effects, fuel use, etc.),
- **Economic:** relative efficiency of the different instruments with respect to wealth generation, firm profitability, market operation and management cost (including transaction costs),
- **Social:** relative efficiency of the different instruments with respect to employment, wealth distribution, wages, labour conditions.

The Study will provide policy-makers with a picture of the situation as comprehensive as possible. This will in particular help reducing the lack of ex-post information needed (see above). In addition, policy-makers would also get information about the trade-offs faced by other governments than have introduced (or plan to introduce) similar schemes. Such information can be of great interest, even if economic, biological, social and institutional conditions can differ broadly among OECD Member countries.

**Objective 2:** To analyse the way market-like instruments/incentives were implemented, i.e. the reform process. The analysis could address, *inter alia*, the following issues:

- How was the reform decided (top-down decision; co-decision)?

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<sup>8</sup> In this regard, BJORNDAL and MUNRO (1998) stated that “*well working community based fisheries management schemes and well working ITQ schemes share a common attribute. They will both give the fishermen an incentive to view the fishery resources as long term assets, the conservation of which is in their self-interest*”

- Who were the stakeholders involved (fishing industry; other CSO)?
- What was (were) the objective (s) followed?
- What were the main obstacles to the reform?
- How were the obstacles overcome?

One particular aspect of this objective would consist in bringing forth the nature and extent of obstacles that Member countries face when contemplating a move to sustainable and responsible fisheries. The existence of such information may thus help ease the fear of those interest groups that seek to put obstacles in place for a successful transition to responsible and sustainable fisheries.

### **3.3 Methodology**

The Study will be based mainly on case studies submitted by Member countries with experience in using market-like instruments. Updating work or new analysis will be required. In both cases, there will thus be a particular need for economic expertise. In addition to the case studies, the Study will also build on academic works already published, some of which were realised by European economists.

### **3.4 Expected outcomes**

The OECD Committee for Fisheries expects the Study could be used to identify fisheries settings in which a particular market-like instrument/incentive is likely to provide given expected outcomes. In particular, the Committee expects to identify the most appropriate way to allocate fishing rights, with respect to the social, institutional and economic conditions.

### **Conclusion comments**

Despite their theoretical interest, the introduction of market-based instruments remains slow in OECD countries. The paper identified some key obstacles to this policy reform. However, further work is needed to better understand these issues. The current OECD Committee for Fisheries' Study, based on more comprehensive, up to date information, aims at providing policy makers with new elements that can ease the use of market-based instruments in fisheries management.

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