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Transferable Fishing Concessions and EU Fisheries

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Abstract: In this paper, we provide a general background on the latest EU fisheries reform process and analyze the potential effects of rights based management systems on EU fisheries. In the latest reform process, the much debated topic was related to Transferable Fishing Concessions, TFCs. This type of rights based management system will be used in all EU fisheries by 2015. We concentrate on ITQs which are the most well-known rights based management system to be able to understand the potential effects of this policy change. Our analysis suggests that if the sufficient conditions for these mechanisms to be successful are satisfied, this policy change may align the interests of all players in the fishing sector, and hence both economically and biologically sustainable fisheries can be achieved.

Keywords: Common Fisheries Policy; TFCs; ITQs

1 Introduction

History of implementation of ITQ systems in fisheries management dates back to 1970s. Iceland implemented a completely developed ITQ system in herring fisheries in 1979 and started to implement ITQs in its all important demersal fisheries in 1984 (Arnason, 2007). New Zealand started to implement ITQs in its deep-sea fisheries in 1983 and adopted a uniform ITQ system in its all fisheries in 1986, which was the first such comprehensive ITQ system in the world (Arnason, 2007). Iceland and New Zealand were the leading countries for the implementation of ITQ systems. Following these advances in fisheries management, many papers has been written on the advantages and disadvantages of ITQ systems. Geen and Nayar (1988), Gauvin et al. (1994) and Buck (1995), analyzed ITQ systems in the late 1980s and 1990s. These studies promoted the efficiency of ITQ systems by showing the possibility of reductions in overcapacity and elimination of ‘race to fish’ under ITQ regimes. Furthermore, Grafton and McIlgorm (2009) performed cost-benefit analysis of ITQ systems for the Australian fisheries. Higashida and Takarada (2009) and Higashida and Managi (2010) discussed the efficiency of ITQ systems under different market conditions.

Besides the strong scientific arguments in support of ITQ systems, there is also a literature discussing inefficiencies of these systems focusing on high management costs and imperfect market conditions such as unstable quota prices or improperly functioning secondary markets for quotas. Anderson (1991) mentioned that the total cost would not be minimized under imperfectly competitive market conditions under ITQ systems. Newell et al. (2005) stated that ITQs can only be a solution for the long-run since unstable quota prices are observed in the short-run. Vestergaard (2005) pointed out that achieving efficiency for fishing fleets under an ITQ system would be delayed due to sunk costs. See also Chavez and Stranlund (2013) for a model of ITQ management system with management costs and their effects on the secondary quota markets.

The quota allocation mechanisms always lie at the heart of these discussions about ITQ systems. For real-life applications of these mechanisms in different fishing regions, the reader is referred to Shotton (2001) and Cox (2009). In order to clarify the economic and social impacts of the TFCs in more details, the advantages and disadvantages of the ITQs are explained in the next section.

2 The Advantages and Disadvantages of ITQ Systems

The purpose of implementing the ITQ management system is to increase market functionality by providing flexible conditions and at the same time to create a self-control mechanism in the fishing industry for sustainable fisheries. There are two key management decisions in traditional fisheries management. The first one is the target biomass and hence fishing effort (or harvest) for a given species. The second one is the decision on the instruments to achieve this target (Grafton and McIlgorm, 2009). Likewise, determining the TACs and quotas, issuing the rules on transfers of quotas and establishing the control systems are the building blocks of an ITQ management system. Thus, under an ITQ system and the policy of achieving MSY harvesting conditions, estimating the MSY level and appropriate TACs, creating an effective design for the initial quota allocation process and secondary markets for quotas become the most important steps of the implementation process of the management system.

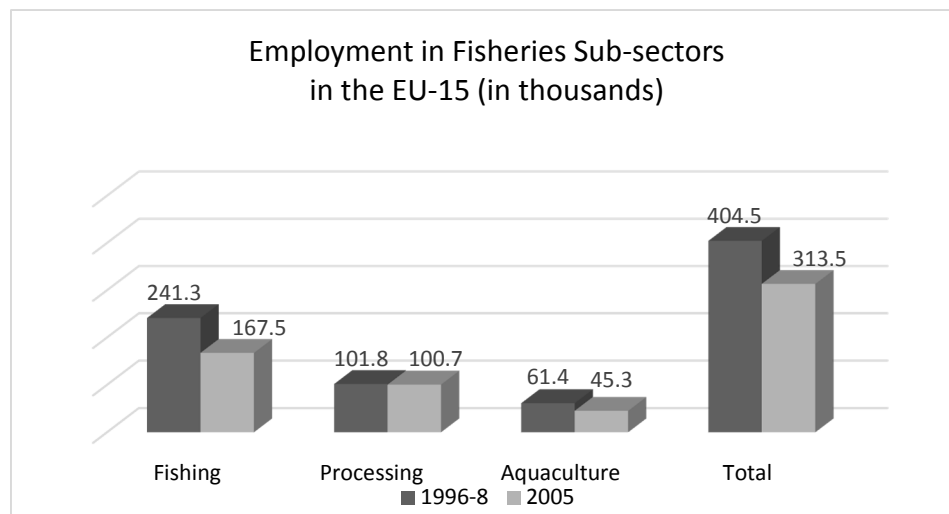
There are several reasons why ITQs became one of the most popular management systems in fisheries, and why ITQs are widely accepted worldwide. First of all, ITQ programs are intended to reduce overcapitalization, positively impact the conservation of stocks, improve the market conditions and promote safety in fishing fleets (Buck, 1995). Moreover, ITQs guarantee a catch share and this property of ITQs slows or eliminates the 'race to fish' and allows fishermen to be flexible about their timing and fishing rate decisions (Buck, 1995). As one of the key parameters used for measuring the economic efficiency, resource rents can also be used to evaluate the efficiency of the management system. Resource rents are increased returns per unit effort, and they occur when management systems such as ITQs reduce the level of fishing effort, which is resulted in the exit of less efficient operators and increase in catch per unit of effort (Geen and Nayar, 1988). Geen and Nayar also show that resource rents under ITQ systems would be 25% higher than the resource rents under alternative management systems for the same total catch. The resource rents in the European fisheries will also be affected by protective regulations of the European Commission. By these regulations, total resource rents may decrease as a result of the relevant principles stated in the CFP reform proposals. On the other hand, these new policies may increase equity in the distribution process of resource rents.

It is illustrated in the Commission Staff Working Document that ITQ systems significantly reduced the total fleet capacity in the United States surf clam and ocean quahog fisheries, the Australian bluefin tuna fishery and Iceland's purse seine fishing (EC, 2007). On the other hand, Geen and Nayar (1988) state that the average catches per boat in Western Australia and South Australia under the ITQ system to be respectively 67% and 28 % higher than the average catches which might have been under aggregate quota or limited entry system, and also 90% higher in Western Australian system if they have maintained to implement previous aggregate quota system. However, elimination of high cost vessels is not a solution when the total social welfare is considered since another aspect of transferable quota systems is the reduction in total employment. Under ITQ systems, total employment decreases due to the exits of fishing vessels from the

industry. For example, there has been %86 decrease in the number of fishing vessels in Iceland herring fishery after implementation of the transferable quota system (Edwards, 2000). Employment in the fish catching sector is highly affected from decreasing number of vessels rather than employment in processing and aquaculture sectors.

Employment in sub-sectors of fisheries in 1996-8 and 2005 is given in Figure 1. It shows the changing employment levels in sub-sectors of fisheries (23% decrease in the total employment in the EU-15). Note that the decline in employment level was experienced intensely in the fish catching sector (31%), whereas the decline in the processing sector employment was around 1%.

Figure 1. Employment in fisheries sub-sectors in the EU



Source: EC, 2006.

In the last decade, traditional fishing techniques has been affected from new technologies used in fish catching. The technological developments may be one of the main reasons for decreasing employment in the fish catching sector. Another reason for decreasing employment in the fish catching sector is the elimination of small-scale fishermen under new market conditions. Therefore, the number of employees may decrease in the fish catching sector due to the reduction in the number of vessels unless protective regulations are issued.

Many studies on ITQs emphasize that ITQs create positive net returns for the fishing industry if these programs are managed effectively. Principally, there are some pre-conditions to be satisfied for successful implementation of ITQ programs. These pre-conditions are defined as adequate monitoring and control, well defined and binding TACs and flexibility in reconciliation of quotas (Grafton and McIlgorm, 2009). According to Kompas and Che (2005), there are two necessary conditions at least to render ITQs efficient in management of fisheries. Firstly, there should be a well-organized market to implement transfer of quota effectively. See also Squires et al (1995) and Ledyard (2009) for more on this first point. Secondly, quota holders should participate in the quota market in order to transfer quotas from high to low marginal cost producers, and also there should be an ex post transfer to compensate catches which are different from planned quota holdings (Kompas and Che, 2005).

Despite its effective outcomes such as reducing race to fish and overcapacity, ITQ systems may cause some negative results such as increasing discards and high grading. These consequences of ITQs lead to questions about the net benefits of ITQ systems. ITQs can create incentives to discard lower valued fish since returns from catches will increase if fishermen fill their quotas by catching higher valued fish rather than lower valued ones (Geen and Nayar, 1988). The other much-debated issue about ITQ systems is the increasing management and production costs under ITQs. Fixed costs, information costs and costs of control are the main cost titles in ITQ management systems. Information costs are higher under ITQ management and other TAC-based systems compared to the systems which simply regulate fishing effort (Yandle and Dewees, 2008). Implementation of ITQs may also increase the fixed costs of production because of the 'user pays' principle for government services. This principle prescribes payments by fishermen to cover a portion of management costs in fisheries. Hence, the management levy paid by each fisherman is also high under ITQs (Geen and Nayar, 1988). On the other hand, total government financial transfers are much higher under input control systems than output control systems. Grafton et al. (2006) state that the total government transfers were on average 20% of the total landings value in OECD countries in 1999 while it reduced to 4% in New Zealand and Iceland under individual transferable quota systems. Hence, besides the increasing costs of control, ITQ systems may reduce the financial burden on governments by decreasing the government transfers.

To sum up, decreasing employment level in the fish catching sector, increasing high grading and discards, and higher costs under some implementations are the pronounced problems of ITQ systems. The recent CFP reform aims to overcome these problems by putting some restrictions on the transferability of quotas, increasing output controls and determining TACs according to MSY approach, which make the latest CFP reform a corner stone for European fisheries.

3. Reform of the CFP: Implementation of TFCs

The EU represents about 4.60% of global fisheries and aquaculture production, which makes the EU the 4th largest fish and fish products producer after China (32.80%), India (5.20%) and Peru (5.20%) (EC, 2010a). Furthermore, catches in the EU constitute the 3rd largest catch volume (5.70%) after China (16.30%) and Peru (8%) (EC, 2010a). Nevertheless, as a result of high demand for fish, European countries import fish and fish products in spite of high levels of fish production in Europe. Besides, the fishing industry is important not only for supplying food to consumers or fish products to different industries but also for creating employment opportunities and generating primary sources of income in some coastal areas, such as Galicia in Spain, Algarve in Portugal and Voreio Aigaio in Greece (EC, 2010b).

The general belief is that the latest reform package may increase the efficiency in the fishing sector by implementation of TFCs. Furthermore, the latest CFP reform also focuses on providing sustainable fisheries by implementing MSY harvesting conditions while preserving social welfare and employment opportunities in the fishing industry under a well-designed TFC system. Transferable fishing concessions will be introduced by all Member States (MS). Moreover, TFCs will be implemented by MS under some major principles determined by the European Commission. These major principles are described by the European Commission as follows (EC, 2013):

- “Determining a maximum percentage of total national quotas that can be given to any vessels,
- Reserving a part of national quotas to small-scale fishermen and allocating the rest of the quotas as TFCs,
- Reserving a minimum quota level for only new entries,
- Putting restrictions on selling, leasing or swapping of TFCs that only the owners of licensed and active vessels can buy TFCs in order to use them for licensed and active vessels,
- Showing respect to the principle of relative stability,
- Withdrawing the TFCs of a vessel owner by the state in case of a serious infringement by the vessel owner.”

The principles above are important steps for increasing total economic profitability and employment in the fish catching sector. Another primary concern of the CFP reform is achieving MSY harvesting conditions by 2015 for all European fisheries. The MSY is the optimal catch level while protecting the fish capacity to sustain regeneration for the future. MSY harvesting conditions at the population equilibrium provides the highest level of total biomass growth and hence the highest level of yield. Kanik and Küçükşenel (2014) show that these principles are important to guarantee well-functioning of TFCs. See also Wakefield (2012) for the CFP reform process and Frost and Andersen (2006) for more details about the EU fisheries policy

4. Conclusion

We provide background information about the reform process of the CFP and give a review of papers related to the potential effects of rights based management systems on EU fisheries. All agents in the fishing sector currently agree that a well-designed rights based management system is needed to align the interests of all players in the fishing industry to achieve sustainable European fisheries. In the latest reform discussions, implementation of TFCs come to forefront as a policy change in the CFP. This type of a rights based management system in theory can be used to achieve both economically and biologically sustainable fisheries. Kanik and Küçükşenel (2014) show that if biological limitations due to structure of fish populations and composition of fisheries or different catch technologies taken into consideration in determination of maximum catch limits (or property rights) then TFCs can achieve the target of sustainable fisheries. Moreover, they show that ITQs can be used to achieve the management goals of the European Commission. In conclusion, the potential effects of TFCs depend on its design and implementation process.

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