

ITQS, Common Fisheries Policy, and stakeholders' perceptions

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**ITQs, Common Fisheries Policy, and stakeholders' perceptions.** Rights Based Management (RBM) schemes have already been experimented with in specific fisheries and locations. The lessons given by these experiences are fundamental to explore the feasibility of such tools and their social, economic, and environmental impacts. In this paper we analyze the possibility of introducing a more focused approach on RBM, in the form of Individual Transferable Quotas (ITQs) in the Common Fisheries Policy. Using Stakeholders Analysis, we analyze and report the different perceptions of the Portuguese stakeholders facing this situation. We conclude that the introduction of ITQs tends to increase market concentration in the sector, triggering serious social problems for locals.

**KEYWORDS:** Common Fisheries Policy, individual transferable quotas, stakeholders' perceptions, social and economic impacts.

**ITQ, Política Comum de Pescas e as percepções dos *stakeholders*.** O uso de instrumentos de mercado baseados na gestão de direitos de propriedade tem tido alguma expressão no sector das pescas. A avaliação dos impactos ambientais, económicos e sociais deste tipo de instrumentos revela-se essencial para avaliar a viabilidade da generalização destes métodos na Política Comum de Pescas (PCP) da União Europeia, sob a forma de Quotas Individuais Transferíveis (ITQ). A análise das percepções dos *stakeholders* portugueses, permite concluir que a provável monopolização do sector e as dificuldades acrescidas de ordem social nas zonas costeiras muito dependentes da pesca constituem, na ótica portuguesa, o principal óbice à generalização das ITQ.

**PALAVRAS-CHAVE:** Política Comum de Pescas; Quotas Individuais Transferíveis; percepção dos *stakeholders*; impactos económicos e sociais.

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## **ITQs, Common Fisheries Policy, and stakeholders' perceptions**

### **INTRODUCTION<sup>1</sup>**

The privatization of natural resources emerges as an habitual response to the problem of their overexploitation resulting from the inexistence or insufficient delimitation of property rights. The widespread implementation of rights-based management methods in fisheries, such as ITQs (Individual Transferable Quotas), has increased the opportunity for private sector groups to influence fisheries management. This development has given rise to a debate over the extent to which this private influence should be encouraged (Coelho, 2018). In this debate, some “liberal oriented policies” are put into question. Clark et al. (2010) defended that there are limits to the privatization of fisheries and there are situations in which the communities should not put the defense of the common interest into private hands. In the European Association of Fisheries Economists (EAFE) Conference 2017, Professor Daniel Bromley argued against the indefinite-time transferability of rights for private agents standing for the possibility of the states to recover those rights, attributed to private individuals, when desired.

Despite obtaining some interesting results, the Common Fisheries Policy (CFP) of the European Union has not delivered the sustainable use of fish

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resources. Since the previous discussion of the 2012/2013 reform of the CFP, the European Commission has launched an ongoing wide consultation with the national administrations and other stakeholders with the aim of discussing the problems of the CFP and exploring the ways to advance the reform of fisheries policy.

In recent years much attention has focused on ITQs and other Rights Based Management regimes as an approach that will encourage more efficient use in fisheries through the allocation of private property rights. One possibility for European fisheries policy reform that is in permanent discussion is precisely the introduction of ITQs and other similar schemes as a form of obviating the limitations of the actual management regime raised on Total Authorized Catches (TAC), non-transferable quotas, and technical conservation measures.

Our paper is a contribution to this debate and investigates the feasibility of introducing these new management regimes in the CFP. Our fundamental issues are if and how we can deal with the problems of conflicting objectives in the fisheries policy and what will be the impacts of such a policy in terms of European cohesion. The issue of introducing a more liberal property rights trade system will have to confront the distributional effects of such a *Coasian* proposal. As a complement to this theoretical analysis, we have contacted some Portuguese actors more deeply related with the fisheries sector, to understand their perceptions on the issue at stake. Based on stakeholder analysis we interviewed four of the most representative, in both functional and participatory terms. We concluded that their general perception in relation to ITQs is unfavorable, as it strengthens the concentration of fishing rights in large companies and large financial consortia while not considering fishing communities and local economies.

The paper is structured as follows: In the first section we introduce our work, in section 2 we develop the analysis of the current situation of CFP and the philosophy of regulation that informs the management and conservation regime of European fisheries. In section 3 we introduce the conceptual framework of Individual Transferable Quotas focused on both theoretical and empirical perspectives of its implementation. We also point out the most important limitations of ITQs. In section 4 we discuss the introduction of ITQs in European fisheries. In section 5 we provide a brief characterization of the fisheries sector in Portugal and point out the importance of the fisheries operating program to overcome difficulties of the sector. In section 6 we report the different perceptions of the Portuguese stakeholders about ITQs, including fishermen, vessel owners, consumers, and non-governmental organizations (NGOs), in the context of CFP reform. Finally, in section 7 we conclude.

### SOME HIGHLIGHTS ON THE COMMON FISHERIES POLICY: THE CURRENT SITUATION AND PHILOSOPHY OF REGULATION

Since 1983, when “Blue Europe” was settled, almost four decades have passed and now the Common Fisheries Policy of the European Union is confronted with a major challenge. Several studies made under REFIT (European Commission’s Regulatory Fitness and Performance Program)<sup>2</sup> found that Member states failed to reduce fleet capacity, thus exerting fishing pressure on stocks. The policy key-objective, which was to bring the fishing capacity of the European fleet into line with the available biological resources, was not respected. Overcapacity and overcapitalization of the sector were identified as the principal failures of the CFP.

This situation is not specific to the Community. Worldwide concern about over-fishing and overcapacity in the fisheries sector is well documented. The economic fragility of the sector, reflected in poor profitability and declining employment, is the result of a special coincidence of over-investment, rising costs, and diminishing resource stocks (Coelho, 2018). The critical problem is that the fleet profitability is jeopardized by the underutilization of investments. The excess of capacity and a more-or-less constant value of landings to be shared between large numbers of actors, reduces the capacity of each vessel to earn an adequate income. In this context the subsidy policy, artificially reducing the costs and risks of investment, in an already over-capitalized industry, promoted over-supply of capital.

Despite these drawbacks, CFP had some positive results. It has contained conflicts at sea, provided some degree of stocks stability, avoided the total collapse of stocks in areas with higher fishing pressure, and assured the availability of supplies to the Europeans.

At the political level, the difficulties associated with the design and implementation of this regulatory system are substantial. Among others, the lack of involvement of the stakeholders in the management policy and the social constraints in its definition and execution play a fundamental role. To better understand the current difficulties, it is necessary to reflect on the earlier philosophy of intervention underlined in the options of 1983.

The management and conservation regime of fisheries in the European Union is to a high degree the result of an historic process with multiple compromises among national devices and political interests. Since the beginning, two basic alternatives for the formulation of a fisheries policy were to be con-

2 REFIT aims to ensure that EU legislation delivers results for citizens and businesses effectively, efficiently, and at minimum cost.

sidered. At one extreme, a liberal policy that should only establish competition rules in a common market; at the other, a policy of effective intervention, administered at a superior level, which could manage the resources in a perspective of equilibrium between the biological, dynamic conditions of fish growth and the social and economic conditions of resource use.

The Commission's choice for the second alternative was very clear, based on the presupposition that free access would lead to the overexploitation of the resources (Wise, 1984). The conviction was explicitly expressed that the straightforward implementation of the principle of equal access was bound to result in the rapid exhaustion of stocks. The fear of "fishing race" and "over-fishing" justified an intervention policy that could regulate the activity in the sector and obviate the perverse effects of free access.

For such a policy to be feasible it needed a central authority and involved a supranational management of resources (Holden and Garrod, 1996). Allowing free arbitration of the sector development by national states could lead to discriminatory action and poor enforcement and control. Removing from the outset a liberal proposal that only determined a set of common rules of access to the activity, the Commission favored a policy of effective regulation that would avoid the over-exploitation of resources that could come from free access to Community waters. On the other hand, the choice of management policy instruments reflected an implicit assessment of the advantages and limitations of the various instruments available. In particular, it underscored the importance that the Commission attached to social issues in the definition of the fisheries policy. The control of catches and selectivity in fisheries, with the establishment of total allowed catches (TACs), non-transferable quotas, and technical measures of conservation (closed seasons, closed areas, mesh size, minimum dimensions of fish caught, etc.) were the preferred forms of regulation. The motives of this option were based on several (social, administrative, political, biological, and control) reasons (see Coelho, 2018) and reflected a positive evaluation of this kind of command and control tools *vis-à-vis* other regulation alternatives, namely, those usually designed as indirect-economic tools, such as *Pigouvian* taxes or ITQS.

As mentioned above, social constraints were in the foreground. The Commission emphasized the objective of minimizing the social costs of the fisheries policy. In an early proposal, (*Comissão das Comunidades Europeias* (1976), the Commission explicitly expressed the preoccupation with social inclusion in the fisheries sector and with the European cohesion. The management regime should assure an equitable distribution of the limited resources between the member-states, and maintain as far as is possible the level of employment and income in the coastal zones and in the areas most dependent on fisheries. The

European Parliament applied pressure in this way, too, stating that the biological basis on which the conservation and management regime should rest could not be more than a starting point and, at least in the short term, the guarantees of employment and social inclusion were irreplaceable objectives.

It is true that direct/command and control instruments cannot avoid the sacrifices of fishermen, unemployment, and social tension. However, the reaction to other management tools that result in abandoning the less efficient producers could be worse. Facing these constraints, the answer was therefore clear: a system of TACs<sup>3</sup> and quotas (non-transferable) was a simpler solution for the problems of equitable distribution of fishing opportunities, depending only on the distribution formula of quotas between member-states. As it actually works in practice, this CFP-formula of definition and allocation of use rights in European fisheries is, in fact, dependent upon several factors, including the dependence on fisheries of some coastal areas, level of employment, and the redistribution of quotas by means of minimizing the effects of Extended Fisheries Jurisdiction on distant water fisheries. This is the so-called "Principle of Relative Stability" that shapes the Common Fisheries Policy. It can be seen as a means of establishing a balance between the promotion of economic efficiency, in the long run, and the necessary social-economic equilibrium in the coastal areas, in the short run.

## CONCEPTUAL FRAMEWORK: INDIVIDUAL TRANSFERABLE QUOTAS

### ITQ – THEORETICAL PERSPECTIVE

Around the world many fish stocks have been dramatically reduced because of overfishing. The common property nature of fish resources (Tragedy of the Commons) and the presence of externalities create an economic incentive to catch as many fish as possible, leading to overfishing and overcapacity, which will not maximize the profit in fishery industry. This situation raises the problem of the efficient allocation of resources and of future availability of fisheries stocks. As Gordon (1954) points out, the open access, together with the strong competition in the fishing industry, does not lead to the most efficient use of resources.

3 The TACs for several stocks in the European waters are defined every year according to the scientific advice of several institutions such as the CIEM (Conseil International pour L'Exploration de la Mer). Using biological or bio-economics models of resource growth, the total admissible catch that maximizes the sustainable yield (MSY) or the economic rents generated by the fishery (MEY) can be calculated.

In addition, the traditional methods of regulation, namely input controls such as limited fishing seasons, entry limits, size limits for the vessels, and the setting of a TAC for each season, without any individual catch limits, proves not to be a solution for the problems. Under the TAC system, once the fishing season opens, economic rationality drives individual fishers not only to over-invest but also to catch as many fish as they can (race to fish). This occurs until the aggregate TAC is reached and the season is declared closed (Milliken, 1994). Thus, rational behavior at the individual level results in waste of resources at the industry level, consisting of both overcapitalization and excess of capacity (Soliman, 2014a).

Together, the different institutional designs of fisheries management like open access fisheries, total allowable catch systems, and non-transferable fishing quotas generate negative economic incentives that are well known by stakeholders in the fishery industry, namely researchers, policymakers, and fisheries managers (Clark, 1985 and 2006; Michanek and Christiernsson, 2014). In fact, the overfishing, the fishing out of the fishing season, the pressure carried out by fisheries associations to increase fishing quotas, and the problem of discards, are issues that require the adoption of political measures by governments in order to implement fisheries management systems that introduce some form of access-use rights, as a means of internalizing the externalities.

In this context, a growing number of countries have experimented with a different economic instrument – individual transferable quotas (ITQ) – which favor a market institutional design instead of a government regulation design (input controls) as noted by Imperial and Yandle (2005). ITQ is viewed as a different policy instrument that can overcome problems in the fishing industry, help to ensure sustainability of fish resources, and achieve socio-economic objectives.

In the ITQ system the regulator allocates property rights to a limited number of fishers in the form of a fixed share of future catches, based on past harvests and vessels characteristics. This share can then be sold or rented to other fishermen. In the short term, the fisher has an incentive to fish his quota in a manner that ensures the highest possible profitability. In the longer term, the system provides an incentive to sell some of the share to more efficient fishermen, those with lower marginal costs, who can pay a higher price for the quota. There will be a market for quotas in which fishers that have profits above the price of the quota will buy quotas from those that have profits lower than the value of the quota in the market.

The individual fisherman thus has an incentive not to exhaust fish resources, not to race to fish (Muro et al., 2009; Brinson and Thunberg, 2016; Birkenbach, 2017; Hsueh, 2017), and behave in a way that is economically



efficient, as well as biologically sustainable. Taking care of future stocks means sustainable yields in the future (Stage et al., 2016).

The quantification of ITQs also provides a way of conserving fish stocks, as the regulator fixes quotas at a level that promotes sustainable fisheries management, i. e., a TAC for each fish stock is defined in a way that is compatible with the species recovery (Squires et al., 2010, Soliman, 2014 a & b, and Merayo et al., 2018). Note the importance of an adequate biological stock assessment for the quantification of TACs. Grimme et al. (2012) point out that as time goes by this assessment has become more precise and trustworthy.

ITQs tend to make a fishery more concentrated. Several studies report that after the introduction of an ITQ regime the number of vessels decreases, as well as the number of workers in the fisheries industry (Copes, 1986, Cunningham, 1993, Grafton, 1996 and Soliman, 2010, Gómez-Lobo, 2011), which means at least a tendency to a market concentration. The argument is clear, ITQs enable fishers to accumulate quota and achieve economies of scale. Fishers who own larger, more efficient boats can pay more for quota and so tend to accumulate it, changing the market structure of the fisheries, as less profitable fishers exit from the industry.

#### ITQ – LIMITATIONS

Beyond the virtues of the ITQ systems, there are some negative impacts well documented in literature that are dismissed by those who strongly defend this fishery management system (Nunan et al., 2018). One of the most negative aspects of ITQs is the incapacity to fully embrace social and economic objectives. Several studies analyze these trade-offs between economic efficiency and other objectives in different countries.

In the market of quotas, if less efficient fishers are forced to abandon fishing, this can bring social and economic damages, because of poor inter-professional mobility of fishermen, due to the absence of skills for work in other economic activities, as well as potential increases in inequality through an uneven distribution of benefits due to the concentration of quotas. So, it is not certain that an increase in efficiency would increase social welfare from the perspective of the whole economy (Copes 1996).

Moreover, a market structure characterized by market power, as is the case of monopoly and oligopoly, implies the possibility of appropriation of the economic surplus by those who have market power. The supply will be lower, and the prices will increase and set at a higher level than they would be in a more competitive market with many small firms operating in it. The higher prices that result from concentration of the quota, although it can be associated with higher quality, are also viewed as negative for consumers (Hoshino et al. (2020).

Another criticism related to the increase in the efficiency addresses the fact that larger vessels generally take their catch directly to processors in major centers, rather than requiring those services in coastal communities. The consequences can be profound: loss of employment, emigration, loss of traditional fishing culture, and a wide income disparity between those who hold quotas and those who do not. These effects threaten fishing communities' traditions, cultures, and ways of living. Such socio-economic effects are usually not adequately taken into consideration by those who defend ITQs (Pinkerton and Eduards, 2009; Wingard, 2000).

Also negative is the fact that in well-managed fisheries the price of quota tends to increase, to a point that it becomes difficult for younger fishers to enter the industry. Cullenberg et al. (2017) shows that in general the average age of fishers has increased by about 10 years over the last 40 years.

At the same time, many researchers argue that ITQs may not reduce the problem of bycatch. Many common fishing methods are not selective, such as the use of large nets that capture many species. Regardless of the form of regulation, non-selective fishing results in bycatch, defined as the harvesting of species that were not targeted. In an ITQ system, harvested fish for which no quota is held are likely to be discarded. For many species, the discarded fish dies instead of recovering. Many empirical studies reveal no clear pattern with respect to how ITQs affect bycatch (Davis and Ryer, 2003).

To sum up, ITQ is not a panacea for the fishery industry management, as claimed by Young et al. (2018) and Merayo et al. (2018). We must address social-economic issues and not only efficiency issues. Soliman (2014a) argues that it is possible to design a specific policy intervention that could be undertaken within the context of a particular ITQ fishery to achieve certain social objectives, and at same time improve efficiency. For a management system design, it is important to recognize that all have a role, including the market, the regulators, and the community (Pinkerton, 2013). This is in line with the more recent literature that explores how to combine the market approach (ITQ) with a community-based approach (Olson, 2011).

In all of this, it is important to mention the case of Argentina. This country took the lessons from previous experiences and designed a system in a co-participated way, which was well accepted by the stakeholders. There was a strong and diverse participation in the definition of initial allocation of quotas. The cooperation of the stakeholders with fishing authorities and the existence of scientific advisers avoided many conflicts related to management issues. The result was a more flexible ITQ system, more prone to mitigate trade-offs between different objectives (Bertolotti et al., 2016).

## EMPIRICAL LITERATURE

The implementation of ITQ regulation of the fisheries industry has been reasonably successful (Costello et al., 2001; Hilborn et al., 2005). Since the first experiences in the 1980s in Iceland and New Zealand, ITQs have been increasingly used, and are the main management system in a considerable number of countries (Arnason, 2002; Chu, 2009; Merayo et al., 2018). Many researchers report beneficial effects in most fisheries in which ITQ systems are in place (Costello et al., 2001; Hilborn et al., 2005).

In the early ITQ systems applications, as in Iceland, the Netherlands, New Zealand, and Australia, the system led to an increase in economic efficiency (Arnason, 2005). In Iceland and New Zealand the regime was adopted first for selected species and then gradually extended to more species. Results show an increase in the profitability of the affected fisheries and a decrease in the excess capacity (Merayo et al., 2018). Arnason (1986) reports a decline in the fishing harvest in Iceland, measured by vessel, per day and per ton, of 15% in the first year of implementation and 6% in the second. In Australia, tuna fishers fell from 143 quota-holders to 63, from 1984 to 1988 (Grafton, 1996). In Chile, the size of the fleet fell from 149 boats in 2000 to 57 in 2004 (Gomes-Lobo, 2011). In New Zealand, a survey on ITQ shows evidence of increase in financial performance of fishers (Macgillivray, 1990). The same conclusion is obtained for Canada (Grafton, 1992). Other studies observe the same trend in Norway (Hannesson, 2013), Denmark (Andersen et al., 2010), and Sweden (Waldo and Paulrud, 2012).

Stage et al. (2016) study the case of the Swedish ITQ system introduced in 2009 and conclude that the system has been effective, as fishing capacity has been reduced and profitability increased. Merayo et al. (2018) find that the introduction of this system in Danish fisheries resulted in a significant reduction of the fleet size and improved economic profitability. The authors also provide evidence of the economic, social, and environmental effects of the system ten years after its introduction. Although they observe a reduction in full-time employment by 68% and a maintenance of the level of salaries of fishermen, which might have adversely affected the social cohesion in the local fishing communities, they find no significant difference in the evolution of unemployment in local fishing communities compared to the national average. The Danish experience demonstrates that ITQs can be an adequate solution for overfishing and overcapacity, with positive effects on the environment due to reduced fuel consumption and fishing activity. In addition, the ability of ITQs to eliminate the "race to fish" was clearly demonstrated by the Canadian sablefish fishery (Soliman, 2010). Regarding the conservation of species,

most studies find good results. For instance, Munro et al. (2009) show that the incidence of TAC averages fell significantly in the Canadian sablefish fishery following the introduction of ITQs. There are also experiences in which the quota was sold to outsiders and unemployment decreased (Copes, 2004, 107).

Stewart and Callegher (2011) report the importance of a regulatory change in 2001 in New Zealand that allowed fishers to acquire a right to harvest a given amount of fish without the need to own a quota, thereby reducing barriers to entry and mitigating market concentration and monopoly power. This regulation also introduced ceilings on the accumulation of quotas by a single fisher. This was designed to allow small fishers to enter the market, thus mitigating the negative economic and social impacts of this management mechanism. Knapp (2011) also addresses the economic and social impacts on the regions and communities where local fishery represents an important economic activity. The author points out that the negative effects of a decline in local fishers may lead to a decline in fish processing, and in the hiring of fishing crews in the fishery activity (in Alaska).

#### **“RELATIVE STABILITY” AND FEASIBILITY OF ITQs**

As mentioned, Rights Based Management (RBM) schemes have already been experimented with worldwide in some specific fisheries and locations. These experiences provide many insights about good practices of sustainable fisheries management and about the limitations of RBM tools.

After two important reforms (2002/03 and 2012/13) of CFP, one of the fundamental “on-going” changes that are proposed by the Commission is the generalization of ITQs as a tool of intervention in the regime of management of European fisheries. ITQs became a stronger possibility when compared with other instruments such as TAC with non-transferable quotas, which has revealed to be unsuccessful in reducing the fleet capacity and stocks renewal. The evaluation results of those experiences are thus fundamental in exploring the feasibility of these tools as instruments of conservation in the CFP.

The four main changes in the reform of 2002 were: a long-term approach in fisheries management; a simpler policy of fleet capacity (giving the responsibility of fishing effort reduction and of adapting it to the existing resources to the Member States); a better application and enforcement of common rules; and the stakeholders’ involvement.

Nevertheless, some problems persisted. A study commissioned by the Pew Environment Group in the early 2010s to assess the economic, environmental, and social impacts of the Financial Instrument for Fisheries Guidance found that the key objective of the policy (which was to bring the fishing

capacity of the European fleet to adequate level, given the available stocks) was not genuinely pursued. Overcapacity was identified as the principal failure of the CFP.

The necessity of a corrective intervention of public policy to approach the socially efficient solution in resource use was undeniable. After a long process of discussion the Commission published a draft that contained the fundamental guidelines for the reform of 2012/2013. Making a balance of the principles and features that were maintained along with the new elements that were introduced, we can highlight the following:

- the fundamental principle of equal access of all fishing vessels from member states to all the resources of UE waters was maintained, with the reservation of access for the nationals of each member state, until the year 2022, to the waters and resources in the area of the 12 miles territorial exclusive zone, without prejudice to possible neighbors' agreements. That means, at the same time, the commitment to the equal access principle and the derogation of the basic principle of free access;
- the maintenance of the Relative Stability principle and the key of quotas distribution based on the historic report of captures (with some capacity of trade among Member states) was emphasized. The system of TACs and Quotas was maintained as the basic regime of quantification of the fishing possibilities.

So, it seems that the fundamental principles: a) free access with partial derogation; b) a system of fishing possibilities distribution based on a perspective that seeks the balance between economic efficiency of the fisheries in the long term and the social sustainability in the coastal areas in the medium term – all that was at the center of the initial Regime, were not changed, even if the designations were replaced.

The innovations appeared at several levels in this reform proposal. The central objective of CFP is now to obtain sustainable European fisheries in environmental, economic, and social terms. Note the order of the expressions; it has a clear meaning. An important aspect of discussion in this new reform was discarding/sea-devolutions. A gradual prohibition of devolutions was to be developed.

Most important: the introduction of a system of *Rights Based Management* tools was proposed for the concession of transferable fishing permits from 2014 on for drag-vessels and other fleet units with more than 9/12 m – i.e., transferable fishing concessions for large scale fleets, with transferability at

the national level. The concessions establish powers for a minimum period of 15 years and institute the right of using individual fishing possibilities. They can be transferred or rented inside of a Member State, and if there is authorization, can even be transferred for another Member State. Each Member can constitute a reserve of 5% of fishing possibilities and can introduce taxes for the use of ITQs. The fundamental objective is that the more efficient companies will buy ITQs. Abandoning the weakest agents makes it possible to downsize the fleet without public supports to the vessels' retirement.

The role of Producers Organizations (POs) was reinforced, namely in terms of optimization of production, obviating undesirable captures and reinforcing the storage mechanism for subsequent trade in the market.

The esteemed *Good Governance* would also imply a clear definition of the responsibilities at the different scales of decision and execution of CFP (local, regional, national, and international) and wide participation of the stakeholders. New encouragement regarding the control and enforcement of fishing activities and the main responsibility of the state of convenience flag, were considered in those commitments.

These are the intentions of course. An "on-going" reform has been taking place since 2012. But even in this reform important limitations persist. In our perspective, at the core we find continued conflict between the objectives. One of the most serious is the contradiction between decreasing the fishing effort and the need for maintenance of jobs and some socio-economic balance in the coastal areas. The maintenance of reasonable standards of living for fishermen would demand increases or, at least, the same level of captures. This seems to be clearly at odds with the urgent need for stock recovery. This means that the fundamental issue to discuss is the *Relative Stability*. This principle, which guides the allocation of fishing possibilities to the member states, can be seen as an exemption from the internal market that is embedded in the CFP and creates a type of territorialization of fisheries policy not permitting trade of quotas between member states. This is a special method to sustain social balance in the coastal areas, in the short term. Not permitting quotas transferability, the stability in fisheries operations is the possible antidote to generalized "social crisis". The "relative stability" of fixed formula of quotas distribution between member-states reflects the fact that European fishermen's representation is still linked to national and local communities. In fact, this territorial logic is in perfect contradiction with the development conditions of a free market (as supported in the Treaty of Rome). Free movement of capital and the "Free Establishment" principle reside under a different logic. Therefore, CFP is pulled in different directions: Equity and Efficiency, Relative Stability and Free Establishment.

The introduction of a liberal system of tradable fishing permits is going to create difficulties in the maintenance of the Stability Principle, even if the Commission does not make such a reference.

There are signals that the agents circumvented the principle of territorial definition of rights<sup>4</sup>. One example is the “quota-hopping” problem. “Quota-hopping” is usually understood as the flagging of fishing vessels to fish against the catch quotas of another country. By purchasing vessels and quotas in different countries, some fisheries enterprises act like multinational firms capturing fishing stocks that were supposed to belong to national fishing communities. By setting up a transparent system for transfers of fishing rights, member states might more easily regulate and monitor such trade in use rights. We believe that much of the inefficiency results from the previous regime of management and expect a clear reduction in transaction costs in this new free regime of trade. ITQs could result in more economic efficiency. Reducing the fishing effort without subsidies for vessels’ retirement is clearly a result that the Commission views positively. But this new policy orientation can, and probably will, trigger an enormous political reaction. It therefore needs to be well explained and discussed with several stakeholders. Also, it seems that the role attributed to the POS in the regularization of markets of production and trade of fisheries products will be clearly reduced in such a liberal proposal. Intervention in terms of “guaranteed” prices, conservation measures, quality norms, and social support are much more difficult in such a tradeable market of fishing rights.

Also, the issue of introducing a more liberal property rights trade system will have to deal with the distributional effects of such a *Coasian* proposal. In this sense, we are still confronted with the fundamental question: a reform to whom? This is not the only problem, however. As Barkin and DeSombre (2013) pointed out, the oceans are overfished, despite more than 50 years of cooperation among the world’s fishing nations. The Governance model of “international fisheries commons” did not prevent the Tragedy of the Commons in the sense that free access still exists at the international level and there are too many boats chasing too few fish.

Consider, for example, the situation of straddling stocks fisheries<sup>5</sup> in the areas adjacent to coastal areas of national jurisdiction, that is, beyond Economic

4 The UK situation is a “good” example. Although not restricted to this member state, it is the case of the UK fleet that has attracted the most foreign investment, especially from Spain and the Netherlands, and has given the phenomenon visibility for discussion. Something like 25% of British quotas were held in the late 1990s by foreign-owned quota-hopping vessels.

5 As, for example, cod or turbot in the Newfoundland area.



Exclusive Zones. After the 1995 UN Agreement on Transboundary Stocks and Highly Migratory Species, regionally based international management<sup>6</sup> did not solve the problems of either overfishing or overcapacity. In fact, existing patterns of international fisheries management seek to limit the number of fish that can be caught but national governments while simultaneously subsidizing fishing and increasing capacity, namely in the segment of long-distance fishing fleets. That means that the protection in one area simply shifts fishing efforts to other species or regions. That is why Barkin and DeSombre (2013) argue that global rather than regional regulation is necessary for successful fisheries management and emphasize the need to reduce subsidies. In this sense, we can also find this kind of problem when we think about the Common Fisheries Policy and third countries bilateral agreements. In fact, this is an “open door” to export our problems of overcapacity without making the necessary reduction of fleet capacity: How can we then talk about efficiency and sustainable fisheries management in the EU?

This kind of “exportation” of problems is at the center of Barkin and DeSombre’s proposal for a global regulatory and policy approach: an international system of individual transferable quotas that would give holders of permits an interest in the long-term health of fish stocks and help create a sustainable level of fishing capacity globally.

#### THE FISHERIES SECTOR IN PORTUGAL: A BRIEF CHARACTERIZATION

Before analyzing the perceptions Portuguese stakeholders of the fisheries sector we provide a brief characterization of fishing industry in Portugal. According to *Estatísticas da Pesca* (INE, 2020), the number of registered fishermen in 2019 stood at 14,617, 9.6% fewer than in 2018. These fishermen worked in a fleet of 3,902 vessels authorized to operate (42 fewer than in 2018).

An analysis according to the type of fishing shows that multipurpose fishing was the segment in which most fishermen were involved, accounting for 65.1%, followed by the enclosure segments (13.3%), fishing in inland waters (11.2%), and drag (10.3%).

6 The 1995 commitment maintains free access beyond 200 miles but guarantees to the Regional Fisheries Organizations (RFMOs) the power of regulation in the areas adjacent to the EEZs. That includes a new ability of Organizations to be able to extend their rules to non-members. To the RFMOs is given the right to establish quotas for the capture and control of the number of boats in operation for a given stock and zone (Coelho, Lopes, and Pires, 2020).



This fleet, distributed according to the segments defined in the 4th “Program Pluriannual Guidance” (POP IV), reveals a numerical prevalence of vessels operating with fixed gears and that have an overall length of less than 12m (about 90% of the total registered vessels), corresponding to 13.8% of the total gross tonnage and 43.5% of the total power. The relevance of local/artisanal fishery is clear (Pascual-Fernandez, Pita and Bavinck, 2020).

Catches in 2019 focused on small pelagic, implying greater recourse to siege, the art most used in the capture of these species. The last position was once again occupied by the drag. Fish landings of Producers Organizations (PO) in the mainland rose more than 16% when compared to 2018, due to greater volumes of chub mackerel and horse mackerel. Note that POs were associated with ,841 vessels in 2019, corresponding to 47% of total fishing vessels authorized to operate in Portugal.

In 2019 the Portuguese fleet caught 188,537 tons of fish, a rise of more than 6% in national fishing when compared with 2018. The increase of catches was justified by more fish captured both in national waters (+6.1%) and foreign fishing areas (+6.3%). Fresh and chilled fishery caught in 2019 represented 295,341,000 Euros, a rise of 1.2% compared to 2018. The annual price of fish landed at national level fell by 5.3% in 2019 to 2.08 €/kg.

Aquaculture production in 2018 stood at 13,992 tons, a rise of 11.5% relative to 2017. Sales in aquaculture created an income of 96.8 million Euros. In the same year, the fish and aquaculture processing industry produced 220,000 tons of overall frozen, salted, and dry and canned fish products, with sales accounting for 94% of national production.

Exports of fishery products stood at 1.087 billion Euros in 2019, a fall of 2.2% compared with the previous year. In 2019 the international trade balance of the fishery activity had a deficit of 1.102 billion Euros, with a coverage rate of 49.7%.

Fisheries operational program, Mar2020 (2014-2020) showed, at the end of 2019, execution rates of 30.5% in terms of public expenditure and of 30.6% concerning the Fisheries Fund (EMFF). Mar2020 materializes the support and application of the European Maritime Affairs and Fisheries Fund Fisheries (EMFF) in Portugal, whose intervention is based on the principles of intelligent (knowledge and innovation), sustainable (efficient use of resources and biodiversity), and inclusive (job creation and diversification in coastal areas) growth. The EMFF supports, in parallel, the components of the Common Fisheries Policy and the Integrated Maritime Policy.

The Mar2020 aims to help in overcoming the main constraints facing the fisheries sector that were detected at the beginning of the program. These constraints reflect the difficulties usually appointed to the sector development.

According to the report of Evaluation of Mar2020 (see Ernst & Young and Augusto Mateus & Associados, 2020), those difficulties concerned:

- the insufficient recovery of many stocks;
- the tendency to decrease or stagnate the gross added value of the activities of the fisheries and aquaculture in the national economy;
- the trend toward increasing production costs;
- the advanced age of professionals in the sector and insufficient qualified labor;
- the low attractiveness of employment in fisheries and aquaculture;
- the high average age of the fishing fleet, needing improvement in terms of safety, conservation on board, working conditions, and energy efficiency;
- the state of conservation and operationalization of the infrastructures of fishing ports, landing facilities, and equipment;
- the insufficient scientific knowledge of marine resources;
- the insufficient articulation between the scientific community and the agents of the sector;
- the incipient development of aquaculture, in terms of research, planning, licensing, certification, and information to consumers;
- the limitations on the processing and marketing of fishery and aquaculture products, particularly in terms of qualified labor and coordination with producer organizations;
- the oligopolistic presence of few buyers in the *lotas*;
- the weak interconnection of fishing activity with other maritime activities, which dictates an excessive concentration of income in the first activity;
- the limited integration of fishing communities in the urban socio-economic environment and the need to safeguard the future of these communities from a long-term perspective, especially those most dependent on local and artisanal fisheries (see, also, DGRM (2014); Saer (2015)).

A later issue to be highlighted is the legal framework of the management of Maritime Space of Portugal. It was introduced in 2014-15. Its consequences for fishing, and the potential modifications of property rights it can sustain deserves a comment.

Becker-Weinberg (2015) examines the legal regime and overall implications of Law n.º 17/2014, which established the legal basis for Portugal's policy on marine spatial planning and management of the national maritime space.

Before this legislation there was no effective legal implementation that took into consideration, simultaneously, the environmental, social, and economic dimensions. Permits, concessions, and other rights of use of the maritime space were granted without much concern for the safeguard of fundamental aspects that characterize the maritime space, such as its interconnectivity. This new regulation points to the need of the adoption of governance models that include planning measures that allow for sustainable development of different uses and activities, and implementation measures, control/monitoring, evaluation, research, stakeholder participation, etc.

The planning and management system mentions two distinct types of instruments: strategic instruments and planning instruments. The first have a political or policy-making nature, “while the second a strictly legal one”. The national marine plan (the “*situation plan*”, as it is referred to in Portuguese) identifies the distribution, in space and time, of the existing and potential uses and activities in the national maritime space. For example, the situation plan identifies the areas for the protection and preservation of the marine environment, including protected marine areas. The situation plan includes the identification of relevant temporary or permanent restrictions and limitations of public and environmental nature, the characterization report of the area or volume in question, and an environmental report in accordance with applicable legislation. The possibility of rights being granted based exclusively on the situation plan requires that it also includes management actions.

The second instruments, *allocation plans*, are essentially the instruments used for amending or altering the situation plan, by means of which uses and activities are assigned to an area or volume of the national maritime space. There are important critical issues appointed to this regulation: The proposed model is disconnected from the coastal and terrestrial planning systems and lacks clarification on the linkages, hierarchical relationships, statutory effects, rules, and criteria for approval/refusal, scope, etc. The possibility of lower ranking *allocation plans* amending hierarchically superior plans, reverses best practices and creates some doubts. The situation plan can be merely a representation of current and potential uses, proposing no programs or strategies. According to Ferreira et al. (2015), allocation plans may turn into “pathways for the promotion of private interests, allocating ad-hoc patchworks of private pretensions of sea uses at the expense of integrated public planning”. And once again, we are confronted with “the limits of privatization”.

## THE STAKEHOLDERS' PERCEPTIONS

## METHODOLOGY

Our research analyzes the perceptions that Portuguese stakeholders of the fisheries sector have on these fundamental changes, and further consequences.

In a previous phase, we discussed these themes in some informal forums (*tertúlias*) with the presence of several fisheries' actors. In these meetings a specific Portuguese problem was always stressed: the lack of differentiation in the application of these regulation schemes to different segments of European fisheries. In the case of Portugal, several ecologist organizations mentioned the specific problem of *artisanal* fisheries, as in Santiago et al. (2015). Though these coastal fisheries have no important effects on unsustainable fishing, the introduction of such an ITQs based scheme could easily put the sector in a situation of monopolization. The real problem of extensive unemployment was expected, augmented by the "dissolution" of important producers' organization (POS) that are currently active. Fishermen and vessel owners' organizations seemed to share these worries.

To know the perceptions that relevant fisheries' actors have on the issue at stake, we turned to a stakeholder analysis (Chevalier 2001; Ramirez 1999; Freeman 1984), as there is a long tradition in fisheries management involving the direct users of the natural resource – *i. e.*, fishers and fisher associations – in decision making processes (Mikalsen and Jentoft, 2001). The management strategy guarantees a more effective compliance and commitment toward rules and laws, thus increasing the effectiveness of the policies in which the likelihood of conflict arising and ineffective management outcomes are high (Ramirez 1999). This is the reason why we believe it to be important to collect insights regarding the opinions that Portuguese fisheries agents may eventually have about the appliance of ITQs and their understanding of the predictable consequences.

Anchored in the ecosystem based approach (EBA) applied to fisheries management (*e.g.*, Aanesen et al., 2014; Röckmann et al., 2015; Santiago et al., 2015; EU 2013), we opted to define "stakeholder" within the ITQ's context, as any group, social actor, or institution of any size, that acts at various levels (local, regional, national, international, micro, macro, short run, long run, private, and public), with a stake in fisheries and/or its management, and that may affect/may be affected by the adoption of ITQs. Embracing an EBA for fisheries management empirically revealed to be an effective management tool in the sense that it transformed the fisher stakeholders' perceptions and attitudes to the point of facilitating consensus, thereby improving policies effectiveness (Mackinson et al. 2011).

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A special battery of questionnaires and interviews with the representative stakeholders were used to evaluate their different views on this question. Semi-structured interviews were conducted as a method of collecting information, addressed to different stakeholders linked to the national fisheries sector, such as: Producer Organizations, Fishermen Associations, NGOs, Government Administration, and Representatives of Industrial Fishing.

Semi-Structured interviews were adapted to the different reality of the actors. Due to scheduling issues, the interviews were not all carried out in person; one was conducted via Skype.

Of the various contacts established for conducting the interviews, it was possible to explore a panel of four relevant actors with different perspectives, who showed interest and willingness to provide their testimony. Because of their backgrounds (many of the actors have training in Fisheries, Business, Marine Biology, and related matters), their experience in the sector (for all of the actors, this experience is measured in decades), and their different roles in the discussion and execution of fisheries regulations, this panel was an interesting channel to identify some important dimensions and relative perceptions about the problems created with the possible generalization of ITQS in the European fisheries management regime.

The list of actors interviewed is as follows:

Stakeholder 1 – representative of an NGO. Interview conducted via Skype on 09/25/2017.

Stakeholder 2 – representative of fisheries administration. Face-to-face interview held on 09/25/2017.

Stakeholder 3 – representative of fishing industries. Face-to-face interview held on 09/29/2017.

Stakeholder 4 – Representative of artisanal fisheries. Face-to-face interview held on 10.04.2017.

All interviews were recorded with the permission of the interviewees for later transcription.

## RESULTS

The results of the content analysis that was developed from the interviews, are summarized in Tables 1, 2, 3.

This research aims to answer the question: "What are the agents' perceptions regarding the possible application of ITQS in European fisheries?" The interviews revealed that ITQS are generally seen unfavorably. The perception is

TABLE 1  
Stakeholders’ Perceptions regarding the ITQ System

Problem/ Perception	<i>Generic thinking/position on the fisheries management system based on ITQs?</i>
<b>Actor 1</b>	“[...] results in the end of small-scale fishing, which results in the concentration of fishing rights in large companies and large financial consortiums... what I think is that it generates management based on who has more money, and who has more economic capacity to gain access to the resource”
<b>Actor 2</b>	“Concentration in one or two operators who are more aggressive, and this, I think is not a very good idea. This is the great defect of ITQ...”
<b>Actor 3</b>	“ [...] ITQ’s idea has strategic weaknesses, it is an advantage for companies, but strategically for countries it presents obvious risks, and it also creates another risk that is <i>Rent Seeking</i> ...”
<b>Actor 4</b>	“It is a complete stupidity, ITQs are unjust, and there is no reason to exist. If there is a quota it is for the country, then all licensed people should have a right of capture... [...] When they speak of quotas assigned individually and still transferable, we are talking about negotiations and games of interest...”

Source: Adapted from CÁ, L. (2018).

TABLE 2  
Stakeholders’ Perceptions – the introduction ITQ in European Fisheries

Problem/ Perception	<i>Perception regarding the introduction of ITQs in European fisheries?</i>
<b>Actor 1</b>	“I think that where it has been applied it generates a transformation of the fleet into a hyper-industrialized thing, without major environmental concerns and without having medium and long-term economic concerns... [...] what can happen to ITQs is that there is displacement of those who take the decisions of the geographical area from which the activities have an impact...”
<b>Actor 2</b>	“The European Union says so in the CFP, but it will not do that. [...] can be good for resource management if they are single species fisheries. [...] It favors monopolies and does not take into account small fishing communities...”
<b>Actor 3</b>	“Concentration would probably happen, especially in industrial fisheries. One or two companies would end up adding all the quotas. [...] easily allowed the Portuguese quotas to be transmitted to other countries that have more financial capacity and that could acquire them...”
<b>Actor 4</b>	“It is a complete revolt and the sector does not accept it. [...] I see no argument of any kind that would alter anything, either to people or to appeal. I think it is not correct that the measure is taken when fishermen from all countries do not accept.”

Source: Adapted from CÁ, L. (2018).

TABLE 3  
Stakeholders' Perceptions – The impact of ITQ in Portuguese Fisheries

Problem/ Perception	<i>Portuguese situation in a context of changing the CFP to a system of ITQs?</i>
<b>Actor 1</b>	"We are talking about a free European market, basically what we were going to have was clearly a displacement... [...] we would hardly have many Portuguese fishing companies working. [...] I think we would be in a negative situation, of course."
<b>Actor 2</b>	"Portugal would have fewer ship-owners, with fewer ships. It was a system with a greater concentration of operators, less humanized..."
<b>Actor 3</b>	"Without heavy safeguards, Portugal did not benefit. In the long term, they would lose the possibility of fishing, and with them they would lose people who knew how to fish, port activity, port culture, sea culture. At the end the cable was going to be negative..."
<b>Actor 4</b>	"I cannot predict! What I do know is that the fishermen will not accept it. "

Source: Adapted from CĂ, L. (2018).

that ITQs strengthen the concentration of fishing rights in large companies and large financial consortia. Those who have more capital win the race to the right of access to the resources. ITQs prioritize financial profit, while everything else is taken as secondary. ITQs do not take into account fishing communities and local economies. The small fleet gives rise to hyper-industrial fleets. These fleets tend to use resources in a more financially advantageous perspective in the short term, without environmental and social concerns.

The liberalization of the European market, without providing safeguards for the countries, would be very damaging to Portugal. In the long run, Portugal would see its quotas being acquired by professionals and firms of other countries with more financial capacity, and with this, the displacement of the decision-makers of the geographic area from which their activities have an impact would follow.

Nevertheless, there is some differentiation in the answers from interviews. There are responses that put some valid economic features to the ITQ method, although it seems that for the case of CFP, its introduction and generalization are not feasible (given the possibility of not solving the existing problems and only creating new ones). For other stakeholders closer to the professional fishermen and associations, the responses are even harsher; they do not even see the advantages of such a system, as it is appealing only to the greedy, and brings profit to larger companies.

Based on all the interviews, it is possible to conclude that the perception of the agents on the question of the possible introduction of the ITQs in European fisheries is unfavorable. The ITQs do not serve the real interests of the majority of the Member states. They allow, above all, to benefit the large groups linked to fisheries. When applied to Portugal, the economic and social impacts are perceived negatively by the stakeholders. The fishery sector in Portugal has a significant segment of small vessels without financial strength, and it is difficult for their owners to compete with large companies in the free quota market. Therefore, Portuguese stakeholders fear the concentration of fishing rights in large companies and large financial consortia that will destroy the fragile Portuguese fisheries, and in turn create severe social problems. In Portugal there are many communities heavily dependent on fisheries and the loss of fishing rights would be catastrophic, economically and socially, for these communities and for the country itself. Fisheries would be managed by large companies, without environmental and social concerns, aiming only for profit. An ITQ system implemented at the European fisheries level would thus be very detrimental to Portugal.

## CONCLUSION

The main purpose of this paper is to continue the debate around the reform of the Common Fisheries Policy of the EU: summarizing the guidelines maintained and the fundamental changes introduced in this reform; discussing and evaluating their relevance and potentialities, as well as their difficulties and risk factors, with special attention to the possibility of introducing a more focused approach on Rights Based Management.

Our fundamental conclusion is that *sustainability* is at the heart of the proposed reform. Not only in terms of fish stocks regeneration, but also in social terms. This is the overriding question: how to balance those contradictory objectives. Even if some of its advantages are considered, the role of Individual Transferable Quotas in the Management and Conservation Regime still raises more issues to discuss and risks to overcome. The results of our investigation on the perceptions of the Portuguese stakeholders to this important change in CFP seems consistent with our preoccupations and emphasizes the limits of privatization.



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