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Individual transferable effort quotas for Italian fisheries? A preliminary analysis

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ABSTRACT

In the context of transferable fishing concessions, the most well-known tool is probably the individual transferable quota, whereas the case of individual transferable effort quotas (ITEs) is much less often discussed. This study is the result of a project realized in collaboration with Italian fishery associations with the objective of evaluating, in a participatory framework, the possible consequences of the introduction of ITEs. A semi-quantitative survey was carried out over a sample of key stakeholders being experts of bottom trawling fisheries in the Tyrrhenian and Adriatic Seas and the pelagic trawling fishery in the Adriatic Sea. The results and elaborations of the surveys were discussed and validated by a focus group composed of delegates of fishery associations. Two aspects were investigated: the relationships between fishing capacity (i.e. engine power and gross tonnage), fishing activity (i.e. fishing days and fishing hours), revenues, and variable costs (e.g. fuel) and the suitability of different proposals and alternative approaches for the introduction of ITEs. The participation of stakeholders allowed the building of some simple pedagogical tools based on realistic figures collected through the surveys that could be used by managers of associations, cooperatives, and producer organizations to better understand the functioning and possible consequences of ITEs schemes.

1. Introduction

Regulation (EU) No 1380/2013 of the European Parliament and of the Council on the Common Fisheries Policy introduces the concept of 'transferable fishing concessions' (TFCs) as a revocable user entitlement to specific fishing opportunities. This scheme is included in the regulation as a voluntary approach for Member States. Importantly, in the first version of the regulation prepared by the European Commission in 2011, TFCs were mandatory for all vessels longer than 12 m. This strategy was considered optimal in order to adjust the overcapacity of EU fleets and increase fishery efficiency, but criticisms from several sources, including the Regional Advisory Council for the Mediterranean and the Italian Senate, led to a softer, voluntary regulation.

However, TFCs remain a recurring theme in EU policy debates, and it is important for stakeholders to better understand their application and possible consequences in order to take an objective position. In the framework of TFCs, the most well-known tools are probably individual transferable quotas (ITQs), whereas the case of individual transferable effort quotas (ITEs) is much less discussed [19,21,25,26]. ITEs were mentioned by the European Commission in their preliminary documents on fishery policy reform, and, more precisely, they were associated with the Mediterranean case, where management is already driven by fishing effort regulation[1] and where multispecificity may represent an obstacle for ITQs, inducing overquota discards [2,28]. Furthermore, ITEs provide automatic feedback control (i.e. catch changes) when fish stocks increase or decrease, which may be more effective than ITQs at managing fishing mortality when there is a high unpredictable annual recruitment variation and short-lived species, which is the case for several Mediterranean stocks, and when biomass data is of low availability or quality [25].

The introduction of TFCs (or market-like instruments, as the OECD calls them) is often met with resistance from participants in the fisheries sector. For this reason, the OECD [21], based on several experiences, presented a list of tracks that policy makers can draw upon in meeting these challenges and that can ease the introduction and improve the design of these instruments. The first of these tracks is 'making all stakeholders comfortable with the concept of market-like instruments', followed by others, such as 'preferring an incremental or gradual implementation', 'not necessarily adopting a one-size-fits-all strategy', and 'involving stakeholders in the reform process' [21].

In this framework, this study is the result of a project realized for the Italian Ministry of Agriculture, with the active participation of three Italian

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[1] Total allowable catches are not generally used in Mediterranean fisheries, with an exception made for tuna (*Thunnus thynnus*).

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fishery associations (Agci Agrital, Federcoopesca-Confcooperative, and Lega Pesca-Legacoop)[2] joined in the 'Alliance of Italian Cooperatives', with the objective of evaluating the possible consequences of the introduction of ITEs. These three associations combined represent more than 1500 cooperatives involved in fisheries or aquaculture with more than 20,000 members who are responsible for about 80% of Italian fish production. It is very important that stakeholder associations, with the collaboration of research institutions, lead similar initiatives, fostering the participation of fishers and the dissemination of results. The main objective of the project, and the paper, is to build, through a participative approach, a few pedagogical tools that can be used by fishers' associations to evaluate the possible effects of the introduction of ITEs. For this scope, the following steps were necessary: i) engaging fishers to collect information about the technical and economic characteristics of the fleet and opinions on ITEs application; ii) developing and validating a model built on information previously collected; iii) discussing results for policy/management options.

This paper follows the approach used in the project and is organized as follows. In the next section, the role of participation in fisheries research and management is highlighted. In section three, we consider how ITEs have been applied in other contexts. In section four, we present the methodological approach used for the study. In section five, we illustrate the results, including the models generated from focus groups with stakeholders. Section six concludes the paper.

2. Participation in fisheries

Success in fisheries management depends not only on improving our understanding about the resource dynamics but also of behavioural components. Individual decisions and ways used to develop supra-individual rules are influenced by drivers related to governance structures, power and leadership, and cognitive processes [10]. Both strategic goals based on individual utilities and goals that express the interests of groups or classes (e.g. gear types, local fleets, cooperatives, associations) are in force [29]. In this complex framework, legitimate management should require intense negotiation between stakeholders (as well as public authorities), including public hearings, open meeting, composition of decision making bodies, etc. [10,29]. For Dutra et al. [10], formal 'participatory approaches may support stakeholder negotiation processes by helping participants make their values and objectives explicit and clarifying the trade-offs involved in management decisions'.

Thus, despite the strong biological/positivistic tradition in fisheries management and the high level of government involvement, fishers' participation is becoming more and more common and has been applied in research, management and enforcement [24]. In condition of lack of data, the implementation of actions for integration of different sources of knowledge is an asset [23] and cooperation is required for the effective collection of a broad array of technical, socio-economic and cultural information regarding fishers and fisheries [24].

Benefits of participatory approaches are multiple and include: easier identification of causes and effects of unsustainability issues, and elaboration of proposals to solve the problem, including compromise solutions with public authorities [23]; increase of compliance and trust between stakeholders and authorities [24]; possibility of verbalized justification for decisions [8]; reduction of internal conflicts and contradictions allowing management testing via modelling before implementation [10]; reinforcement of a communitarian vision [23] with the establishment of a proactive social setting [12].

On the other hand, reaction to participation is not always good. The participatory approach can be seen by some stakeholders as a justification for tighter regulations, or as co-option of the industry by the management system, and there is concern with how the data would be used [24,29]. In fact, participation may entail falsification of answers, confession of illegal activity, as well as refusal to participate [27]. Stakeholders may suffer from 'consultation fatigue' [10]. Finally, some observers are concerned that fishers participation in management is a case of 'foxes guarding the hen house' [29].

To eliminate these problems, it is important that the transparency of the participatory process be ensured both internally and externally and the objectives, procedures and intended outcomes be clearly defined [27]. It is also possible to design approaches that do not involve pressured decision-making, data extraction or information transfer [8].

3. Individual transferable effort quotas applications

Management schemes based on transferable fishing concessions, property rights, or market-like instruments generally assume that private interests, spontaneously, may drive economies toward maximum efficiency. The OECD and FAO [21] agree that these instruments have to be considered as 'use rights' rather than property rights. In this context, ITQs are the tools that are more studied in the literature (they were analytically considered for the first time by Christy [6]) and more applied to the management of fisheries (applications begun in the eighties [5]. ITEs, on the contrary, have been considered less frequently [24,27,7,9]. As Squires et al. [24] highlight, effort is less well defined and homogeneous as an input than catch is as an output; controlling a single dimension of effort (e.g. days) leaves out unregulated dimensions that can be expanded ('capital stuffing') and technological progress ('effort creep') that can increase catch (i.e. effective effort increases). In contrast to catch rights, ITEs do not create incentives to overcome biological overfishing and to minimize costs but rather create incentives to maximize revenue.

Squires et al. [25,26] review several ITEs management approaches around the world. These approaches can be roughly classified into two groups: those where total allowable effort (TAE) is expressed as days at sea (which is closer to our interests), and those where it is expressed as the number of gears, such as pots, traps, or hooks.

Among days-at-sea schemes, the Faroe Islands demersal fishery is a well-known example. In the mid-1990s, the Faroe Islands rejected the TAC system that was in place, especially due to extensive discarding when single-species quotas were filled, and substituted it with a TAE scheme consisting of ITEs (fishing days) for specific fleet categories (small trawlers, pair trawlers, longliners, and coastal fishing) [14,2]. For example, due to catchability differences, one fishing day of a longliner < 110 GT was equivalent to two fishing days using jigs. Since its introduction, the total number of fishing days allocated has been reduced several times, but these days have not been fully utilized, suggesting that the effort allocation is too high and is not able to reduce overcapacity and overfishing [14,2,25].

Inside the European Union, the Netherlands and Denmark have applied hybrid systems where ITEs (e.g. transferable kilowatt days) were complementary tools to support ITQs, mainly to reduce the number of fishing days and bycatches of overquota stocks [1,19,21]. More interesting and easy to analyse is probably the case of the Spanish '300 fleet', so called due to the number of Spanish vessels that the European Community allowed to fish in the Communitarian Atlantic EEZ when Spain entered into the Community (1986) [14,19,21]. In fact, only 150 'standard vessels' (of the 300) could fish simultaneously. The standard vessel was considered a vessel with an engine power of 700 hp, and conversion coefficients were defined for vessels with different powers. Conversion coefficients and engine power do not have a linear relationship, and, in fact, the coefficient changes less than proportionally compared with engine power, with an elasticity coefficient[3] around 0.3. After 1997, firms could exchange fishing day quotas, with a minimum and a maximum number of days that could be owned. In

[2] Administratively, this project was led by Federcoopesca-Confcooperative.

[3] The elasticity coefficient is calculated as the percentage increase in the coefficient factor divided by the percentage increase in the engine power.