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Management systems in the EU fisheries

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Abstract

In the different proposals about fishing resources management systems there is a trend to consider that some incompatibilities exist between forms of management (public intervention or co-management) and the use of instruments based in creating market of fishing rights. In this paper, we will try to leave behind this incompatibility by means of a new concept of management system, which distinguishes accurately the instrument from the institutional framework under which the former is applied. We can see the usefulness of our concept in the European Union fisheries management. Although there is a common policy for all Member States, the way some countries have implemented the Community Regulations has changed the institutional framework which determines the fishermen's activity. The results of our analysis become more outstanding since The Green Paper on the Future of the Common Fisheries Policy emphasises the need to share with the fishermen the drawing-up of the fisheries policy. © 2002 Elsevier Science Ltd. All rights reserved.

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1. Introduction

One of the aims expressed by the European Commission in the Green Paper is the improvement of the governance in the Common Fisheries Policy (CFP). The proposal consists of a greater involvement of people concerned in drawing up the policy by participating in Regional Advisory Committees, of which the fishermen's representatives, among others, would be members. Thus, the Commission's proposal raises an issue for discussion in the political sphere, which had already been raised in the scientific meetings. The discussion was about the advantages of granting a greater decision-making power in fishing management to fishermen and the best known option was co-management.

In this scene, and faced with the imminent reform of the Common Fisheries Policy, some concepts must be specified with regard to the different options of fishing resource management systems (or governance structure). The focus, then, is on analysing how the fishermen's behaviour is determined by their influence in the decision making process.

The bioeconomic models highlight how the behaviour of fishing-resource users' changes in the presence of different property regimes. Long-term-efficient behaviours depend on property-rights held by the fisherman, the Sole Owner being the reference for their optimum exploitation. From the issues discussed in the bioeconomic models, authors from different social sciences have raised new questions, focused on answering to what extent different institutional frameworks may confirm or refute the general conclusions arising from the analytical models.

The debate concerning the concept of Common Property as a situation different from the concept of Open Access perfectly illustrates what we mean. From a critical perspective, contributions from economists [1–3] as well as from other social scientists [4–8] have helped to delineate more precisely the results and the proposal based on microeconomics.

There is some convergence among these authors. The Sole Owner is not the only situation where the user holds incentives to follow the efficient and conservationist path. It is enough that the fisherman can have an influence on the definition of the property by means of the rules that regulate it. Hence, there is an interest in finding out how the institutional framework determines economic agents' behaviour, but considering the institutional framework itself as a variable in the analysis, as something capable of modification by the users them-selves.

As a result, when it comes to propose how to regulate the fisheries, we have to bear in mind the Instrument of Management as much as the mode of its implementation. So, we have to conceptualise the Management System taking into account both elements.

2. The influence of the users in the structure of property rights

Once we have decided to include the rules in our analysis, we define the concept of property in order to find out which incentives the resource-user holds to adopt efficient and conservationist strategies. Our proposal consists in conceptualising the property as a structure of rights over which the user can influence through two levels and in three different ways. Let us develop this definition.

According to Schlager and Ostrom [9], two level of actions influence fishermen's behaviour. In each level, there are rules determining the things which individuals are allowed to do, that is to say, their rights. The difference between the first and the second level of rights is crucial, in Schlager and Ostrom's words. In the first, so-called operational level, individuals adjust themselves to existing rules. In the second, collective-choice level, individuals decide together which rules must function in the operational level. Let us examine the following example chosen by Schlager and Ostrom: in a fishery, on the collective-choice level, what types of inputs are allowed (fishing gears, technical characteristics of vessels, etc.) has to be decided. On the operational level, each individual will choose the input combination which best suits the features of his firm.

Within this framework, property can be defined as a set of rights over fishing resources throughout the time. Some rights belong to the first level, while others are found in the second level of action. Operational-level rights include right of access and right of withdrawal. The right of access defines who can enter the fishery. The right of withdrawal defines who can catch resource units. On this level, as we said before, right holders only adjust their strategies to rules that define their rights. They cannot modify their rights.

Contents of rights are modified on the collective-choice level, in which several individuals meet. We are referring to the rights to participate in the design of rules, and three types of rights can be distinguished: the right of management, the right of exclusion and the right of alienation. The right of management gives its holder the authorisation to establish internal rules on resource exploitation. The right of exclusion concedes the ability to choose who enjoys the right of access to the fishery and how this right may be transferred. Finally, the right of alienation consists of being able to transfer, by selling or renting, the rights of management and exclusion.

From these rights, Schlager and Ostrom delimit different degrees of property according to the rights held by the resource users. To differentiate regimes of property, the authors take account of situations where the individuals are holders of rights, situations where they share rights, and situations where they do not hold rights. This means that, irrespective of the level of action, the users may have an influence on the structure of rights via the entitlement of right. Each user may influence as an Owner if he is an exclusive holder. The user may influence as a Co-proprietor if he shares the entitlement. And, as well, he can be a Simple-User if he does not hold the right. In this case, the level of influence is the least.

In order to complete Schlager and Ostrom's proposal, it is necessary to clarify the other two ways of influence, because the boundaries between different levels or types of rights into which we may divide the property, are not totally clear. The boundaries become less clear when right-holder and right-user do not coincide. In this case, it will be significant to know the contents or qualities of the rights, as Scott [10] remarks; but as well it is important to make explicit their manner of allocation or acquisition.

As a result of combining these three ways (the degree of user's participation in the entitlement, the method of allocation and the qualities of rights), we might set up a rank of situations which will depend on the degree of the resource users' influence in the structure of property rights.

Regarding the first way of resource user's participation in property, the rank arises from previous analysis. If there is identification between the resource-user and the proprietor, their ability to define property right is complete and, hence, they will be fully encouraged to invest in the conservation of the resource. The incentive will be smaller when the resource user is not the individual holder of the right, but other users share it. In this case, the user will operate as a co-proprietor, and therefore the incentives to adopt efficient behaviours are fewer, because profits and costs arising from his strategies will be allocated among the group of co-proprietors, with the resulting externalities. However, his incentives are greater than those of the Simple User, who does not possess any right. Here, his influence through this channel over property rights structure is nil.

From the economic point of view, it is important to know what the method of right allocation is. Through this channel, the users may also have different degrees of influence over the property structure. Let us start, in this case, from the situation of the least degree of influence. Here we take into account situations where rights are allocated by authorities. There is a central agency, which is not a resource user, but it grants the exercise of rights to the users, who cannot modify the initial allocation.

Through this second channel, the degree of influence increases when the method of allocation rests on the cooperation of the resource users. We refer to situations where the users accept voluntarily to cooperate in right allocation. Thus, the user may participate in changing the structure of rights, but he must reach an agreement with the rest of the users.

The third method of right allocation is based on competition. Here, every individual has the ability to influence the structure of property rights by buying and selling rights. The final structure will depend on all agents' interaction in the market and on the conditions agreed in every transaction. Thus, the individual has more means to influence rights structure, because allocation changes are not subject to either authority or collective agreement, but merely to the agreement between the participants in each transaction.

Finally, the degree of the influence of users may change through the channel of the quality or content of rights, regardless of the degree of entitlement and the method of allocation. As for qualities, Scott [10] mentions the degree of transferability, exclusivity, divisibility, flexibility, duration and quality of property title. Users' behaviour will be sensitively affected by the set of these qualities. The more opportunities to transfer the rights and the greater the degree of exclusivity, duration, etc., the higher degree of influence on the structure of property rights of the resource will be; and therefore the user will be more encouraged to conserve the natural resource. Thus, we can distinguish three situations, two being extreme opposites: One extreme is that situation where the right user has the highest qualities. The other extreme represents the situation where the qualities are the smallest. Between both we can find the third situation, where the qualities of rights, although high, are restricted to a small number of users.

Taking into account all the combinations, a higher number of situations arise where a user may have a different role with regard to the resource. His distance to the Open Access and his proximity to the Sole Owner may be estimated according to the degree of influence on the property rights structure through the three channels. In general, the most efficient situations will be achieved when the entitlement is more individualised, when the user may affect more the right through allocation, and when qualities are more linked to the rights.

With this definition of property, which comprises two level of actions and three ways of influence, we shall define the concept of Management System.

3. Management systems, instruments and regulating institutions

The need to intervene in and regulate a fishery implies the implementation of rules affecting the structure of property rights over the resource that will be exploited. This set of rules constitutes a Management System. Firstly, we may distinguish the rules according to the institutional level in which such rules operate, that is to say, the operational level or collective-choice level. And secondly, we may distinguish how the rules influence the structure of rights within their respective level, or in other words, how they affect the entitlement, the allocation and the qualities of rights, and, therefore, how they determine the degree of user's influence on such a structure.

Thus, we may define Instruments as the set of rules that delimit the structure of fishermen's rights in the operational level. And we call Regulating Institution the set of rules that defines the structure of rights in the collective-choice level. So, we agree with Franquesa [11] that a Management System can be characterised by the Regulating Institution and the Instruments used, which allow us to differentiate both the structure of rights generated in the collective-choice level and the structure of rights generated in the operational level.

In the operational level, the Management System will be determined by the structure of rights arising from the Instruments. We must bear in mind what the degree of influence over entitlement is, which the qualities of the rights arising from the Instruments are, and which the type of right allocation is. There will be a Liberalised Management System when the Instruments make the user a proprietor of the rights arising from such Instrument. The degree of liberalisation will be greater when the right qualities are greater, as well as when right allocation is via competition.

We will refer to a Cooperationist Management System if the operational-level rights do not belong to the individual, but to a group of users behaving cooperatively. The degree of cooperation will vary depending on the qualities of the rights given to the group so that it can affect the members behaviour.

In the end, we call it an Interventionist Management System when the qualities of the operational-level rights held by the resource-users are minimal, so that they behave as simple users who choose their strategies as if the rules were established by a central authority.

In the collective-choice level, we wonder who manages the regulation rights over the stock and how this is done. That is to say, who has the ability to establish rules affecting every agent who exploits the resource stock. What we have called Regulating Institution could be characterised by the structure of rights, created by such an Institution, as we did before with the operational level. Nevertheless, we must mention two things: on one hand, we are interested in finding out which degree of influence the user (the holder of the operational-level rights) has over the structure of collective-choice rights. We do not care what degree of influence the ruling agent holds when this is different from the resource-user. On the other hand, the operational user's degree of influence over the right structure in the collective-choice level may be closely related to the structure on the operational level. The greater the operational user's degree of property, the less the ability of ruler's influence will be over the structure of rights, and viceversa.

In this sense, we refer to an Individual Management System when the resource-user is the proprietor in both level of actions. Now, the user must hold necessarily a well-defined right over the resource. In this context, it will be the competition what determines the mode and the conditions for allocating rights, and the ability to rule will be maximum, because it is the user himself who establishes how to manage the resource.

There is also the option that the stock (the whole or a great part) belongs either to a single proprietor, who owns the authority and the means to enforce the rights of regulation; or to a user group. In the former case, we talk about a Centralised Management System because now the holder of collective-choice rights does not participate in the operational level. The decision-making is centralised in a single agent, who sustains his intervention by means of the authority or coercive power he holds. Via allocation, the user's influence over regulation will be low. Via qualities of rights, the influence will depend on the Instruments used on the operational level. The degree of influence will be minimal when the Instruments implemented by the ruler give user little discretion on the operational level. However, if the Instruments promote a user with maximum rights, the influence will tend to increase.

Finally, we talk about a Self-Regulated Management System when at least the rights of management and exclusion over the resource stock (either total or a great part) belong indissolubly to the user group that participates in its exploitation. Now, the right allocation is based in user cooperation, and therefore the qualities of rights will be restricted to these users. Again, the degree of influence of every user via qualities of the rights will depend on ruler's behaviour (the user group). The greater the abilities of the group as a ruler, the less the abilities of the individual user will be in the operational level.

So, combining the characteristics of the structure of rights both in the operational level (arising from the Instruments) and the collective-choice level (arising from the Regulating Institution), it happens that a Management System may take different directions, without the two levels being incompatible with each other. Thus, a Centralised Management System (in the second level) may be Interventionist, Cooperationist or Liberalised in the first level. Likewise, with resources

managed in a self-regulated manner in the collective-choice level, Instruments that convert the users into holders of transferable rights can be implemented, and thus the Management System would be Liberalised. Moreover, we could either choose Instruments that promote an Interventionist system, or keep cooperation as the principle of management, which would produce a Cooperationist system. Lastly, even individual proprietors of a resource, besides behaving privately in the operational level, could decide whether to cooperate jointly in the management or to act as if submitted to interventionist rules. The more rights the resource-user holds, the greater will be his incentive to take into account the long term in his strategies, and therefore, he will be more encouraged to achieve efficient and conservationist solutions. This happens in the case of the Individual and Liberalised system, which refers to the situation where the user has more ability to affect the resource management via the two institutional levels. On the contrary, the Centralised and Interventionist System creates less incentive for the resource-user, and so he will be more stimulated to approach the open access situations. Self-regulation remains in an intermediate position.

4. An application to the EU fisheries

The analysis of the Common Fisheries Policy, from the theoretical perspective proposed here, proves to be very useful. Although the Instruments are the same for all the Member States, each national Administration may implement such Instruments with great discretion, in such a way that the structure of property rights varies from country to country and even within a country. All the fishermen from the European Union are not in the same position, from the point of view of their influence over the structure of property rights.

If we take into account the Common Fisheries Policy just as it is defined and passed in Brussels, the management system could be defined as Centralised and Interventionist. There are no rules implying the management to be directly supported in the market or in Fishermen Associations. The right of access and that of withdrawal are defined by the European Union. Until now, fisheries management consists of controlling output via TACs and of controlling input via Multiannual Guidance Programmes. The fisherman, after receiving his licence and his quota, has no Instruments to change the initial right allocation, nor there is a mechanism to take part or have an influence on the design of these rights. All these powers fall on the Administration and the fisherman is just a user of both, collective-choice rights and operational-level rights. Their allocation does not meet competition or cooperation criteria, but it just results from authority discretion. Every Member State must be concerned about specifying the operational-level rights and, even, the rights of exclusion and withdrawal. And here is where the institutional frameworks differ from each other. There are some countries where the rights of access and withdrawal are defined in such a way that fishermen are let to have a wider scope for participating actively in defining the operational-level rights.

As we have restricted our analysis to those countries whose fleets work in the Community Atlantic waters, we have seen that most of them have not introduced any variations when implementing the Community Regulations. We are referring to Portugal, France, Belgium, Germany, Denmark, Sweden, Finland and Ireland. The existing rules in these countries make us insert them into a Centralised and Interventionist Management System, since the authority principle is generally used to allocate quotas decided in Brussels. These countries have not implemented the Community Regulations towards better defined property rights; but some countries do, such as Spain, The United Kingdom and The Netherlands. As a result, the degree

of influence of the European fisherman over the structure of property rights is different according to the country's jurisdiction in which he operates. Apart from the general situation, we have to mention the fishery composed of Spanish Trawlers which work in British and Irish Waters. Recently, the Spanish Government has authorised the transfer-ability of both fishing-rights, the right of access (measured in fishing-days) and quotas. In the first one, alienation of fishing days is allowed, while in the second, quota exchanges have only a temporary effect. In any case, acquiring fishing days entails the corresponding fishing quotas. So we can say that in this fishery the Management System has changed significantly, obtaining an Individual nature. The right exchange in the market will lead to continuous permanent changes in the initial allocation, originally decided according to historic presence criteria. And fishermen are those who decide how to participate in the market of rights. When managing those rights, the Spanish law provides for the possibility of individual or jointly management, the latter through Associations. Fishermen have chosen the second option, since it was the standard practice for planning the fishing season. So exchanges are being made through Associations, and thus this regulation experience could be defined as Cooperationist.

Longliners (vessels under 100 GRT and specialised in hake) work in the same Community waters, but restricted to the area VIIIa,b,d. This fleet is also entitled with the rights of access (fishing days) and individual quotas. Quotas are transferable, but only in a temporary way. As for fishing days, exchanges are not allowed, but temporary leasing is. As a result, the Government allocates those rights but there is certain flexibility thanks to those Instruments. Thus this management experience could be defined as Centralised and Liberalised.

In the United Kingdom, the Administration has begun a devolution process towards Producers' Organisation, and that is why it is closed to a Self-Regulated Management System in the collective-choice level. Producers' Organisations manage the quotas that their members receive, and decide collectively how to share and catch them. In other words, the Organisations impose rules that determine the operational-level rights of their members. Thus, fishermen are entitled not only to fish and to enter a fishery, but also to cooperate in the design of the rules for withdrawing the resource. In the collective-choice level, users are co-proprietors of rights, since they obtain the regulating power from the very moment in which they agree willingly to participate jointly in the management. Fishermen are not proprietors in this level because they may only choose to be regulated either by the Administration or by their Organisation. When they choose the second option, the Producer Organisation receives the property of the quotas.

In the operational level we found the options mentioned in the theoretical model. Not all POs use the same Instruments. Their content has an important influence on the fisherman's behaviour. So, some POs have decided to keep the Instruments applied by the Administration on those users who do not take part in the devolved system. They have kept quotas by limits in monthly landings, uniform for all vessels, irrespective of their size or of their capture register. So the fisherman is a simple user in this level and has a very limited right. He is not entitled to exchange or acquire more quotas, and his fishing season planning is restricted monthly. This is a Self-Regulated System, but Interventionist in the operational level. Other POs allocate quotas individually and these cannot be modified later. It is just a user who is entitled with a right of withdrawal with better qualities than the fisherman with a uniform quota with monthly limits.

5. Conclusions

It is necessary to include the Instruments as well as their mode of implementation in the economic analysis of fisheries management. The incentives that may affect the user's behaviour depend on the Instrument, but also on the user's degree of influence on how the Instrument is implemented.

Our Management System classification allows us to determine to what extent the fishermen have an influence on the decision making process and what their decision power is when doing their activities. The greater the decision power is in making decisions and fishing rights, the bigger the incentive to adopt economically efficient and biologically conservationist fishing strategies will be. In this sense, the Regional Advisory Committees proposals which appears in the Green Paper is not going to modify the Community fishermen's role essentially. Their rights of access and withdrawal will remain invariable, and their power to influence on the fishing management will be minimal, just as it is right now. Then one may not expect that the Regional Committees will bring the necessary balance between stocks and fleet. There may be, of course, some national changes in that direction according to how the Member States implement the Community Regulations.

To finish, we would like to comment that a better definition of Management Systems will help us to put forward proposals of fisheries management more adapted to particular and local conditions. For instance, a proposal may consist of implementing market-orientated instruments, but this may be compatible with keeping the structure of governance of the Management System, either being a local government or a fishermen organisation.

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