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## Article

# Path - Dependence and European Fisheries Management

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## *Path – Dependence* and European Fisheries Management

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**Abstract.** For a long time there has been an attempt to explain the current crisis in the fisheries sector in terms of a confrontation between those defending “fish” and those defending “fishermen”. However, the real problem concerns the governance of fisheries and how common resources are assigned; it is not just a crisis of resources per se. Therefore, an insightful understanding of the scenario leading to a satisfactory solution is more complex than it is often believed since there is a need to tackle problems related to the state of stocks, fishermen’s strategies and ecosystems. The fishing sector is not exclusively concerned with production activities as some analysts would have us believe. Rather, it is an area that integrates a number of important features and requires different approaches dealing with the industrial aspects of the sector, distribution and consumption. The fishing sector is characterised by a high level of public intervention, in terms of regulation, finance and state subsidies. The plethora of norms has become such that, currently, the main areas of debate are those concerning how best to preserve resources and ecosystems (by managing and sustaining certain economic levels for example), the welfare of those who make their living from fishing, and the social impact on coastal communities among others. The main focus of debate used to be the conditions of access to fishing and fisheries. Nowadays, however, since early 2000s, efforts have concentrated on the limits of biological safety in order to guarantee sustainable and efficient fishing. This work carries out a dual analysis of the objectives of fisheries management. The first focuses on path dependence and the second on a debate among the three main players and their changing views. This approach allows us to clarify the different interests as regards policy-making, as well as to clearly define the different management implementation.

**Keywords.** Fisheries Management; Common Fishing Policy; Path dependence theory.

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### 1. Introduction

Anthony Charles (1992) suggested that the analysis of fisheries management should be a mutual commitment on the part of the three main players to harmonize their conflicting points of view. He called these perspectives the conservation, rationalization and socio-community paradigms. Each of these holds certain objectives to be more important than others when it comes to fisheries management and regulation and each prioritizes certain kinds of instruments in benefit of a particular socio-economic group. The terms of the commitment may be either more or less near each of the triangles of the paradigms.

In light of the History of the Common Fishing Policy (CFP), many variables of the said paradigms are seemingly incompatible (Holden, 1994, Symes, 1997, 2007, Lequesne, 2001, Griève, 2001, González-Laxe, 2002, Gray & Hatchard, 2003).

This disagreement has become so profound that the conservation measures recommended by experts and the decisions taken by policy-makers are blatantly at odds. Also, thanks to this disagreement, the failure of attempts to palliate the effects of more intensive fishing by rebuilding fishing stocks is also evident. In addition, the impact wrought by the use of instruments - clearly counter-productive in an economic and biological sense - is both patent and verifiable.

At present, after the passing of the 2013 reforms, it becomes highly pertinent to refocus upon the idea of *path-dependence*. Further, on revisiting the thesis put forward by Charles (Boncoeur & Mesnil, 1999) and his proposed paradigm, it becomes possible to demonstrate that there is a new “triangulation of conflicts and decisions”.

These will be classified using different perspectives. The most important may be stated thus: Is fishing policy en European policy or just the result of a set of common rules for certain aspects of fishing policy? Is the combined set of principles of subsidiarity and relative stability well defined? Are the governments of each member state the main interlocutors of their fishermen? Or, in contrast, are the economic agents the interlocutors of the Commission? These ideas lead to a new analysis, one which highlights the novel power relationships among the actors, the tensions and pressures upon the agents, and the preferences of both with respect to how to define the bases and principles of fisheries management and regulation.

It is evident that with an analysis dealing with how the CFP works and its current status, it will be impossible to reach either a methodological consensus or a universally acceptable solution. Despite the principles of rigour and coherence adopted by different researchers, it is clear that there is a “methodological pluralism” which adapts itself to new and successive methods of analysis.

Our study does not involve highlighting clashing methodological approaches, but instead it attempts to utilize methods that explain the current status of agents and how these behave. That is, this analysis is based upon a constructivist paradigm, with an objective review of the situation, combined with a critical evaluation. By so doing, problems become conceptualized within the dynamic of social patterns that underpin the current dynamic. In short, each actor is subjective as regards perceptions and proposals.

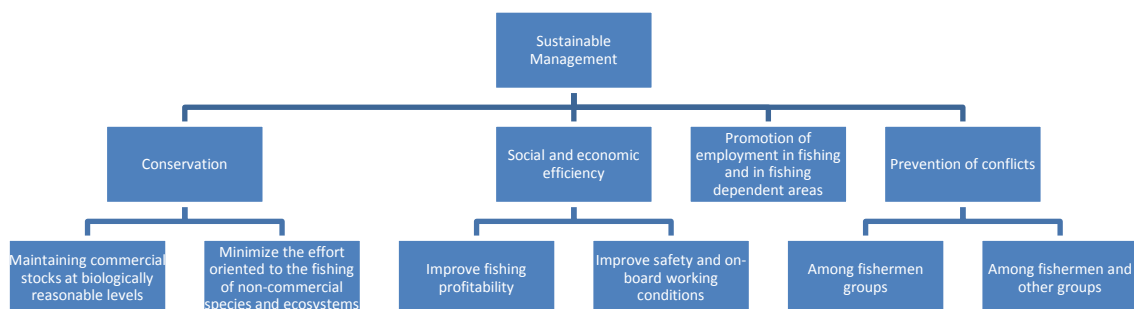
Contributions to fisheries analysis from anthropology and sociology are more and more usual. These contributions provide a wide view about both the establishment and the explanation of stable collaborative relationships. They avoid short-term particularism by trying to integrate local habits of population as the essential tool to manage and protect fisheries, mostly traditional and artisanal fisheries (Berkes, 2012).

There are, therefore, a wide range of objectives linked to certain public policies. As a consequence, it becomes necessary to apply techniques for multi-objective programming. This is far from easy, given the qualitative heterogeneity of fisheries management. That is why the

study deals with concepts that may be deemed to be satisfactory or acceptable, in other words pre-established objective or limit variables. Logically, the optimization involves minimizing the weighted sum of the deviations with respect to these objective variables.

By examining the resolutions passed by the European parliament, we can see that the main objectives of fisheries management in the eyes of public administrations focus on the conservation of commercial stocks, the minimization of conflicts among fishermen and safety on board. The remaining objectives are considered to be less important. For producers, the two main objectives are the conservation of commercial stocks and profitability. For the scientific community the objectives focus upon the conservation of stocks and the minimization of negative impacts on ecosystems; and, for some producers organizations the objective is the implementation of protected maritime areas to be complementary with fisheries management measures.

Does the CFP have the power to incorporate each group's preferences? The short answer is no, although the final result is the sum of small alternatives with diverse periods of transition together with binary rather than total agreements. In short, this means that the views of each group are highly differentiated.



**Figure 1.** Fishery management objectives. Source: own elaboration.

In short, Anthony Charles' paradigm, which highlighted conservation (linked to scientists), rationalization (to producers), and the socio-community paradigm (to institutions), has slightly changed. Nowadays, the relative stances of each agent are more clearly influenced by a worldwide vision rather than a trenchant defence of each group's specific interests.

In this line, it is pertinent to site four salient elements, the so-called "Big Problems" within the field of fisheries management. By common consent these four axes are as follows: a) sustainability; b) criteria about Maximum Sustainable Yield (MSY) and its implementation; c) the implementation of TACs and the individual transferable quota system (ITQ); and d) actions to reduce overfishing.

First and foremost, it is important to highlight the fact that fishing sustainability cannot be gauged or analyzed in absolute terms (Daw & Gray, 2005). Lessons from previous mistakes should be learnt and assimilated and, by so doing, resources should be managed in a healthier and more ecologically way. Sustainable development is the final objective of any policy, so we should be prepared to rectify mistakes rapidly once the relationships between mankind and nature begin to collapse. Therefore, key decisions should not be burdened by an increase in red tape or driven by the desires of a single lobby, either multinationals or coastal communities. Sustainability depends more on the correct choice of a viable underlying policy, the levels of democracy of policy-makers, and on how to apply models to monitor resources. Hence, it should not be forgotten that the political processes to best control natural resources depend upon those communities that live on fishing and that decision making in the heart of the fishing community should be as participative, open and democratic as possible.

The second consideration refers to criteria establishing Maximum Sustainable Yield (MSY). The European Commission is backing both the absolute concept of sustainability and the fixing of an MSY for a specific date (2015). For some scientists, this is not a viable strategy (Mace, 2001; Mesnil, 2012). History records that, on occasions, it has taken a long time to restore overexploited stocks; or that the exact MSY is not known for all stocks or for specific species. Also, the wide annual variation in stocks and the complex interrelations among the different species make it very difficult to achieve the MSY in 2015 (Froese & Proelss, 2010). In short, there are many factors that affect the fishing mortality. These include pollution, climate change, and mistakes in scientific and fisheries management. All these factors, among others, make it problematical to reach the objective.

The third bone of contention lies on the implementation of fishing quotas, the application of individual quotas of transferable fishing (ITQs), and the privatization of resources. The European Commission is fighting to achieve the illusive MSY as fast as possible, essentially basing its approach upon adjustments in the Total Allowable Catch (TAC) and the quotas of transferable fishing. This approach is by no means the only solution and falls short of guaranteeing a healthy outcome for its components and actors. It might be the appropriate measure for certain highly specific stocks and well-known stocks which have been evaluated for decades in certain areas. In contrast, this is probably not the optimum solution for multi-specific fisheries; perhaps an attempt to limit efforts and a variety of selective controls might allow for greater flexibility when it comes to fishing ordination and, by extension better results. A second line of criticism attempts to show that when the TAC system and quotas come into force, this will irreversibly lead to privatization and an increase in catch-costs that encourage overfishing. If this were true, the leverage of financial institutions with respect to fishing would be reinforced; capital would become more concentrated, the number of fishing vessels would decrease, and the cost of market entry for new fishing vessels would rise. As a direct consequence, more expensive quotas would lead to more intensive fishing. In short, we might be on the eve of a great transformation in fishing and fisheries brought about by the imposition of quotas. This would accelerate the ascendancy of financial criteria which would weaken the sustainability of

fishing systems and place the whole idea of sustainable fishing at risk.

The fourth and final key factor to be taken into consideration is overfishing. According to European reports, the countries that make up the EC hold overfishing to be the prime cause of the crisis. As a consequence, the revealed aim of CFP reforms, right from the outset, has been to eliminate between two thirds and one half of fishermen and vessels in order to rapidly achieve the MSY. The coming into force of systems such as the TAC and fishing quotas will allow this to be carried out much faster whilst incurring minimal costs.

The possible sale or leasing of quotas by artisanal fishing to the large groups would allow the financial sector to eliminate artisans without the need for public aid. The free concession of quotas would make operations profitable for financial groups and, by so doing, guaranteeing good profits.

Similarly, all of the actions carried out, including modernization, adaptation, construction and the formalization of joint-ventures, etc. have been developed with the help of state aid and, without exception, there has been no connection with managerial measures. Hence, on certain occasions, there has been an increase in fishing potential but only at the expense of an excessive pressure upon resources.

As a consequence, "preservation" is now the key-word, when it is necessary to apply severe and urgent measures. In order to understand the triangulation of positions in the CFP debate, it is evident that these elements must be given serious consideration. Other specialists argue that it is impossible to apply administrative measures without taking into consideration the markets. It should also be highlighted that, under the banner of trade liberalization, there are no foreseeable safeguards for the protection of local production. In the same line, it becomes hard to mobilize producers against contingency measures, price falls or the introduction of eco-labels for certain species.

## **2. The concept of *path - dependence***

The concept of *path-dependence* is prevalent in the social sciences; recently it has become the focus of analyses in the fields of Law and Economics. The concept itself seeks to answer a series of questions. Why to change the current scenario proving to be so difficult? Why are certain social processes held back by inertia rather than moving towards change? And, finally, why is it impossible to replace some institutions? Without a doubt, the answers to these quandaries are complex since they must include dynamic and multidisciplinary elements which must be analyzed from different levels.

Normally, the evolution of economic systems is carried out by using developmental/evolutionist theories, and focusing on the reach of the impact of the adopted measures. In this sense, when Dosi & Nelson (1994) explain the bases of evolutionary theory in economics they cite two characteristics. The first is an explanation of movement or change over time or an explanation of why certain things are as they are at a given time while emphasising



the causes that have led them to that juncture (the dynamic proposal). The second involves giving opportune explanations in order to contextualize both random elements (which allow us to distinguish what is being generated and renewed) and those that explain any substantial variation.

*Path-dependence* is based on the idea of a dependent trajectory, which is both inherent and key to diffusion processes. This explains why *path-dependence* has had little traction in economics. David (1998) believed that *path-dependence* was the property of a contingent irreversible dynamic process, which includes a wide set of social and biological processes which might be accurately described as evolutionary. That is, “history matters” and “observable results are a function of history itself”. The same author elucidates by stating that *path-dependence* is made up of “a dynamic property related to the idea of a history composed of divisible, irreversible processes”. As a consequence, certain historical phases can generate inefficient situations which, on occasion, can be foreseen. Hence, *path-dependence* includes historical factors and biological and economic analyses, which are, in turn, broadened by neoclassical analyses.

*Path-dependence* can be defined as a theory that states that “the present is the result of choices made in the past”. Therefore, in essence *path-dependence* is a form of analysis that attempts to discover the remote, historical causes of the social structures and processes of the present. This theory substitutes the evolutionist hypothesis based upon the idea that it is possible to explain movements over the long term or how and why certain factors change, and what the causes of these changes are. In this sense, the theory of *path-dependence* seeks to explain factors such as how to interpret the fact that certain contingent events are capable of producing far reaching social results; or how these social results are capable of replicating themselves without the existence of the original forces that brought them to life; or finally, the characteristics of those reproduction processes that prevent or impede change.

The bases of *path-dependence* include what are known as *self-reinforcing sequences* which underline the long-term formation and reproduction of an institutional model; that is, a standard which, over time, becomes more difficult to change or substitute for other more readily available options. This facet of *path-dependence* means that it is ever more difficult to change the initial state given the undeniable supremacy of the original factors. *Path-dependence* therefore, is made up of *reactive sequences* which are chains of events, chronologically ordered and connected causally. Each event within a sequence is a reaction to an event which occurred previously. This type of sequence is important when it comes to explaining the final results because a small change in one of the events is capable of generating considerable differences in the final result of the sequence of events.

### 3. *Path-Dependence* and common fishing policy

Common Fishing Policy is a rule; it is the product of a decision. A different option might have been chosen. However, CFP, as an approved judicial rule, is gradually becoming a contingent event; that is, a point of confluence from which the institutional standard is reproduced. This has nothing to do with the fact that the political powers or actors have changed over time. It is evident that from the origins of the CFP agents have changed together with society and its interests. Nevertheless, the rule has remained unbending and, more surprisingly, it will be unlikely to change.

On analyzing the causes of this phenomenon we find that the analytical structure of *path-dependence* includes the following six factors:

- a) The starting point is a balanced situation. That is, *ad initio* there is a wide number of viable alternatives from which to develop the policy in question, or for the development of the institutions being examined.
- b) Different random events might exercise a substantial function upon the establishment of a given policy or upon a specific institutional type.
- c) The conditions via which the systems of *path-dependence* reproduce their forms or condition their sequences must be specified.
- d) Policies or institutions must generate feedback mechanisms that create inertia or possible returns in order to avoid the emergence of rival policy ideas or new sets of interest.
- e) Once the trajectory has been established, this same trajectory will tend to generate an inertia whereby established individual and cultural interests will have a high opportunity cost when it comes to changing the system.
- f) Finally, there will be a mechanism that allows for changes in the system of *path-dependence*, changes which are located in the interaction of cultural spheres, structural elements and human activity.

The analytical structure may be explained graphically as follows, in Table 1.

**Table 1.** Analytical structure of path dependence

Background	Analysis of the current situation	Structural Persistence	Relative sequences	Results
Historical Factors that define the viable options and mould the selection processes	The selection of one option among various alternatives	The production and reproduction of institutional or traditional structural patterns	Reactions and counter-reactions to institutional or traditional structural patterns	The solution of conflicts generated by reactions and counter-reactions

Source: Own elaboration.

The main objectives of CFP, which officially came into being in 1983, were as follows: to prevent overfishing, to guarantee that fishermen had the means of production that were both permanent and lasting; to provide a regular supply to consumers and those involved in processing such that both volume and price remain relatively constant; to improve conservation and the management of resources; and to ensure balanced territorial development.

After the initial postulates, CFP underwent two reforms in 1992 and 2002. The former was characterized by an attempt to better harmonize fishing fleets and stock management; by the actions and measures that tended to reduce the number of vessels; and by the instruments that facilitated the financial aid to attenuate the social consequences of the adjustments paralisations of fleets. The main axes of the first reform were the progressive implantation of fishing licenses among producers in order to reduce overfishing.

The second reform is consistent with the first. The measures aimed at tackling overcapacity are now the main concern of the second reform and, as a result, the concept of “fishing effort” is applied in reaction to and as a response to the constant decline in stocks and biomass. The instruments used in order to do this were; the generalized establishment of the TAC, according to species and fishing areas; the reinforcement of controls, the provision of aid to restructure the fleet, and a firm commitment to radically reduce the capacity of the fleet.

The results of these decisions meant that public aid for the construction of vessels was now subject to control, a dynamic which is clearly expressed in the recent European Court of Auditors' report (2011). Further, aid aimed at modernization was only authorized when this did not involve an increase in fishing capacity. However, in spite of the reduction in the capacity of the fleet, levels of biomass and stocks and the health of these stocks are still below safety levels.

The present discussions are intensifying scrutiny as to the judiciousness of the postulates and measures adopted right from the birth of the CFP. Warnings heavily underline the inadequacy of measures and actions to preserve, conserve and manage resources. What is also stressed is a lack of connection among the mechanisms that should have balanced and harmonized levels of fishing exploitation in line with rational tenets that aimed to address the competition and rivalry among fishermen and European States. There is, in effect, an historical vicious circle and a whole set of blatant contradictions and inconsistencies. There is not solution for the triangulation of the problems: biological, environmental, and those related to ecosystems; economic and financial; and finally, social problems in terms of participation and responsibility. In short, the same objectives are mooted, while scarcely taking into account far reaching changes and transformations. Further, the specifics, as stipulated in the new reform, are beginning to fall by the wayside as those involved argue that said commitments require additional time. This means that the period of implantation needs to be longer. For example: a) the definition of Maximum Sustainable Yield (MSY) for all of the species after 2015; b) the total prohibition of discards after 2015; c) limiting transferable quotas, until a more suitable juncture; d) the establishment of multi-annual recovery plans for fish stocks; e) the adaptation of governance my means of increased regionalization in a future reform; f) or the harmonizing of

international stances with respect to fishing activity whenever possible. Various researchers have been confirming the failures and mistakes inherent in the CFP for some time (Khalilian et al., 2010, González-Laxe, 2010). The question arises whether the new reforms should give preference and reinforce preceding measures, in the hope that they turn out to be more efficient; or, in contrast, try and learn from what happened in the past, thus facilitating the emergence of new actors and the assimilation of new types of innovative instruments and tools. Table 2 shows the different positions in order to help to understand these controversies.

**Table 2.** Synopsys of the negotiation of the CFP reform

<b>SUBJECT</b>	<b>Initial EC Proposal</b>	<b>Agreements and Disagreements</b>
<b>SUSTAINABLE MANAGEMENT</b>		
Maximum sustainable yield	Aims to ensure that, by 2015, all stocks are being exploited in a sustainable way via the application of fishing quotas and a measure of Maximum Sustainable Yield.	More flexible. In 2015 if possible. Establishment of a new date: 2020.
Eco-systemic approach	The eco-systemic approach will apply to the multi-annual plans with the aim of taking into account the links between fishing and eco-systems.	Current plans are not based on this principle due to the difficulty of creating and implementing highly reliable mechanisms.
Fishing plans	Mono-specific fishing plans should be replaced by plans based on fisheries.	Failure of the attempt to substitute the TAC mechanism and quotas with a system based on fishing effort. No deadlines or time limits are established and there are no new specific administrative measures.
<b>DISCARDS</b>	There is a commitment to eliminate all discards from 2016 onwards.	The date has been moved back and 5% of total captures may still be rejected. The closest to a total discard will be in 2019.
<b>RELATIVE STABILITY</b>	The key to the distribution of quotas by fishing area according to country is not subject to discussion by Member States.	Relative stability is non-negotiable. Hence, there continues to be historical discrimination with respect to certain fleets.
<b>FISHING CONCESSIONS</b>	From 2014 onwards there will be a new system for the concession of fishing rights for vessels of over 12 metres in length. This will be mandatory with the aim of adjusting fleet capacity to resources. An attempt to boost the economic viability of vessels.	The introduction of individual concessions of transferable fishing quotas will be voluntary and will be established by each Member State and limited for each of them. The fleet adjustment programmes will continue, but without public aid.
<b>EUROPEAN FISHERIES FUND</b>	There will be a new European fund for the fishing sector that will take in the period 2014-2020.	There is a demand for greater clarification of contents and powers.
<b>ILLEGAL FISHING</b>	Attempts to prevent the rise of a parallel market. A profound reform of the control and execution system will be requested so that measures are applied uniformly throughout the EU. The remit of the European Fisheries Control Agency will be broadened.	All countries are in agreement. However, the legislation is different with respect to sanctions and fines.

SUBJECT	Initial EC Proposal	Agreements and Disagreements
EXTERNAL DIMENSION OF FISHING	Bilateral fishing agreements are being ignored since they are considered to be too expensive.	It must be a priority and should manifest itself in the defence of the fishing company in all international fishing organisms and institutions and with respect to all bilateral agreements.
PUBLIC AID	There is a move towards a reduction in public aid and subsidies.	Aid for scrapping vessels and for temporary stoppages is intended to continue.
ARTISANAL FISHING	Not contemplated as a separate branch of the industry.	There is a demand for a differentiated system since artisanal fishing and shellfishing are 2 singular types of fishing, and are specific to specific territories.
COMMON ORGANIZATION OF MARKETS	They maintain the classical structure derived from the time when CFP came into existence and based on formulas established in the 1980's.	There is a demand for better market information and norms that establish "fair trade". Moreover these should be accompanied by a more transparent and competitive international framework which incorporates a greater level of equality and transparency with respect to the interchange of products imported and exported.
PARTICIPATION AND REGIONALISM	The commission wants to maintain its power in the decision making process that affects the CFP. So the Regional Advisory Councils (RAC) will be able to elevate their opinions to the Commission but without these being binding. The aim, therefore, is to increase the degree of compliance and that the RAC promotes dialogue among the interested parties.	The resolutions must be in consonance with the instruments of governance, with a bottom-up approach and there must be a consensus among the agents. The role of the RAC must be strengthened and this aspect is only guaranteed if there are ample financial resources and if the resolution proposals emitted by the RAC are backed.

Source, Own elaboration

An initial impression suggests that the thesis and general principles underlying *path-dependence* are perfectly apt for explaining the history and workings of the CFP. In short, there is great resistance to change; forms are always the same; there is a high degree of inertia and a considerable weight of historical and cultural conditions, as well as an administration that reinforces specific and private interests.

#### 4. Analysis of institutional and contractual factors

The three main actors involved in fishing reforms (producers, institutions and researchers) have highlighted an opportunity to clearly set out what fishing activity involves and to formulate new adjustment and sustainability proposals. Further, they have underlined that there are other external factors that might significantly influence the evolution of stocks. These include, climate change, the warming of the seas, the new distribution of species, pollution, etc.

**Table 3.** Behavioural code according to objectives

	<b>Institutional Level</b>	<b>Scientific Area</b>	<b>Sectoral Plan</b>
Resource Management	Positive evaluation with respect to the recuperation of stocks, And positive expectations with regard to the future. The adoption of planning and management measures, but, with a delay and inconstancy in their implementation.	The delays in remedying the imbalances are criticised. Scientists state that the institutions charged with applying the measures do not follow their recommendations. They usually demand more specifics when it comes to defining the planning measures.	Highly critical of decisions. Besides taking into consideration environmental factors, the reform should also consider social and economic conditions; that is, how employment and the areas themselves are affected.
Maximum Sustainable Performance	Establishing medium-term goals (7 years), A grace period for harmonization planning among Member States, with respect to the method for assigning fishing options. The debate on planning mechanisms remains open: specifically, with respect to MSY and the precautionary principle.	Certain scepticism. The application of measures depends upon the role assigned to scientific opinion (executive competence or consultation); and on budgets for their subsequent application.	Very critical. Elements of uncertainty should be taken into account such as those relative to the size and productivity of populations, reference levels and the distribution of mortality among other indices.
Discards	Acceptance of the objective, but not its immediate application.	In favour of its immediate implementation. They talk of its necessity	Immediate implementation is not possible. It is argued that scientists are out of touch with the underlying reality of fishing and underline that there is a disconnection among fishing institutions
Individual Fishing Quotas (IFQs)	Favourable, but conscious of the difficulty and complexity of their distribution	Favourable, but conscious of the need to implant them in line with the needs of the fishery	It's necessary to distinguish between types of fishing. There is no homogenization.
Artisanal fishing	Emphasises its relevance and are aware of its role. Imprecision of definitions.	They believe it is fundamental	Boosting artisanal fishing is essential. Aid and support, whether this be via compensation or price controls
Sustainability	Feasible Commitment	Rigorous control	Mandatory Reference
Regionalization	Listed as a high institutional cost. Difficulties with a definition and derived policies: renationalization and decentralization		They emphasise the need to clearly define what the "conditional transfers" are in each area or fishery.
International Dimension	Defined as a highly important objective. However, budget restrictions are the reason why fishing agreements have not been renewed. Disparity of criteria among Member States	Plausible Objective	They underline its importance and that it requires greater institutional commitment

Source: Own elaboration.

In the same line, it has been stated that since the origin of the CFP there have been many changes. In resume, the process has not been a total failure; there has been a certain progress to the extent that various Member States organize the management of shared resources together by following a decision making process which, in the main, is characterised by a qualified majority.

In the light of these considerations, it is easy to see that European Council constantly gives in to pressure from the productive sector and regularly fails to follow the recommendations of scientists (Villasante et al., 2011). This is normally justified by arguing that, on analyzing the evolution of stocks, it is interpreted that the objective of the CFP-2002 is not to achieve an MSY, but rather to guarantee levels of stocks within reasonable biological limits and with sustainable exploitation (article 3, Regulation 2371/2002). Therefore, not having achieved the objectives cannot be a reason of reproval.

As a consequence, it is possible to present an analysis of the economic motives derived from the behaviour of the actors. That is, a theoretical-practical description in the form of a code with economic pretentions.

This is not intended to be an exhaustive analysis of the different actors' positions. Any attempt to include all casuistic reasoning or relevant specifics would be overwhelmed by a surfeit of information. The exercise we are carrying out is merely to illustrate the different stances (in some cases entailing permanent conflict) among the various perspectives. Thus, the analysis includes both features directly connected to tradable and non-tradable issues, in order to contextualize and broaden the possible spill-over effects of the crisis. Finally, the conflicts and disputes between compensatory and competitive policies and actions are highlighted.

In short, we conclude that there are no restrictive variables or variables which are, a priori, more important than others; rather they are based upon the combined behaviour of a large number of agents. Secondly, there is no obsession to achieve any kind of balance. Third, the short-term objectives are constantly changing due to the heterogeneity of the agents and their own particular circumstances.

## **5. Concluding remarks**

Regulatory fishing policy has gained great importance in recent decades (Arnason, 2001, Clark, 2006, Carciofi & Azqueta, 2012) and the European Union has been involved in much of it. The reason for the new push is that stocks have been placed under intense pressure. The main reasons for this are the oversized world fleet and, by extension, excess capacity, the fact that the technology for detecting and capturing resources evolves very quickly and exerts strong pressure on captures, and finally, the difficulty to obtain planning or management instruments sufficient to guarantee that objectives are reached, that stocks are re-built and there will be profitability for producers in the very near future. The actions carried out are interdisciplinary in nature and this tends to magnify complexity while offering different partial and independent

solutions.

Fisheries are controlled by situations where human interactions are combined, where fishermen follow and keep a group of rules in order to be able to coordinate their interactions with the others. This group of rules allow to restrict decisions and also to give form to individual preferences. In this sense, fishermen follow very specific patterns:

- a) The agents (fishermen) can take into account the consequences of their decisions according to their individual preferences, affecting both themselves and those with whom they interact;
- b) The agents (fishermen) are adaptive, that is, they follow the established rules. This means they can reduce those costs derived from limitations; and
- c) The agents (fishermen) behave according to the context; they can determine if this context is appropriate or not, bringing about an information process and generating incentives in the decision-making.

In short, friction is transmitted by various basic channels. The first of these resides in the role of national interest and how that of one country or a group of countries clashes with the needs and perspectives of the rest. This prevents from updating the map of those regions which are highly dependent on fishing since this involves overlaying different kinds of plans and maps. The first layer includes spatial or territorial maps; specific and segmented maps according to fleet and also depending on the final markets where the product is eventually delivered.

The second layer of mapping refers to the relative balance between the changing potential in the volume of captures and fleet capacity. In this regard, the tried processes of restructuring and modernization become to be highly relevant in terms of economic aid and a commitment to create mixed or joint-venture firms.

The third set of plans includes the dynamics inherent in the process of liberalization taking place on the demand side of fishing markets; these affect the reductions in tariffs, contingencies, health conditions, labelling and the normalization of products, as well as the concept of responsible fishing.

The fourth facet of the composite route map deals with adjusting the planning models to the reality of fishing. In this respect, there is a need to establish whether or not the fishery in question is multi-species and if the scenario is one in which vessels are capturing one particular species rather than several.

Fifth and finally, competition within some elements of the fleet impedes sustainable growth because there emerge distorting factors and variables, such as the concept of relative stability, and the dynamics of market liberalization which thwart, hinder and limit the development and potential benefits that inputs might derive. Likewise, fisheries sector presents negative externalities coming from the no-consideration of the effects originated by the other fishermen and their own effects on fishing reserves.

These externalities appear when these two conditions are met: a) fishing activity of an agent



(producer) causes the other producers to lose their well-being; and b) this loss of well-being is not compensated.

The externalities in the fisheries sector are a consequence of market failures and this brings about serious consequences as regards fishing management policies. Hence, there is a significant discrepancy between short-term and long-term objectives. If there are no incentives so that preservation effects can be taken into account, the short-term objectives of fishermen can prevail over long-term objectives. This derives in the so-called “social trick” (Seijo et al. 1997), where market mechanisms are not able to achieve the optimum by themselves, but they give rise to the over-investment and over-exploitation of resources.

To sum up, in view of these divergences, it may be observed that the European Parliament and Commission are unwilling to renounce immediate or short-term objectives. Also, the Council search for greater flexibility in the conceptual framework of the new CFP.

The CFP is a wonderful source for analysing the path-dependence as it allows us to compare public and private efficacies, as well as the stable and new implemented actions and the framework of reference. In this case, we confirm that North's thesis (1990) was right when defending that these actions and frameworks of reference were unstable.

In this line, the study and analysis focusing on organizations and on institutional changes and transfers have become a broad field of research used evermore frequently by economists. Not only are institutional efficiencies highlighted, and these exist at every level of the decision making process, but also they can be persistent. This leads to great inertia, mainly because of the innate limitations of human beings to reorganize themselves more flexibly and to be more adaptable - the focus of those studying social change.

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