ABOUT COMMONS AND TRAGEDIES REVIEWING A CONCEPT

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ABSTRACT

Metaphors are very important for Economics as Science, both in terms of reasoning and rationale, and in its teaching. The "Tragedy of the Commons" is a very particular example, originating in the scientific area of the Natural Resources and Environment Economy of one of these metaphors and their effects. Dealing with property rights lends itself to misunderstandings since important researchers in this area do not distinguish between "common property" and "nonproperty", although this definition is crucial for the design of the Natural Resources Management Policy. Along this paper, it is intended to rectify this confusion and to establish an adequate conceptualization.

Keywords: *Tragedy of the commons, Property rights, Natural resources, Fisheries, Common property, Nonproperty*

INTRODUCTION

Metaphors are very important for Economics as Science, both in terms of reasoning and rationale, and in its teaching. In McCluskey (1983), it is recalled that most metaphors and other theoretical tools are central to the development of research. Some of these metaphors and allegories are an essential aid for the explanation of certain concepts and for their operationalization. But, we must not forget it, reflect a special vision of its user and the intersection of meanings that is characteristic of it can cause confusion.

The ever-mentioned "Tragedy of the Commons" is a very particular example, originating in the scientific area of the Natural Resources and Environment Economy, of one of these metaphors and their effects. Especially interesting in its content and consequences may, by insufficient definition of the meaning of the term common, lead to a confusion that is reflected in the actual definition of public policy.

According to Schalager and Ostrom (1992): "Political economists" understanding of property rights and the rules used to create and enforce property rights perceptions of resource degradation problems and the prescriptions recommended to solve such problems. Ambiguous terms blur analytical and prescriptive clarity. The term "common property" is a glaring example (...). In fact, in the economic literature on natural resources, it must be difficult to find a concept so definitely misunderstood as "common" and "common property" (Coelho, 2003, 1999). According to Bromley (1991), important researchers in this area do not distinguish between "common property" and "nonproperty", although this definition is crucial for the design of the Natural Resources Management Policy.

This paper seeks to rectify this confusion and to establish an adequate conceptualization. In this context, the chapter discusses the concept of Commons by drawing attention to the legacy of Professor Elinor Ostrom (First point) and establishes a typology of property rights regimes relevant to the case of common property (Next point). Last point develops this conceptualization for the case of fisheries, highlighting the diversity of situations and institutional frameworks. The reflection of the distinction between regimes for the design of public policies is discussed.

ABOUT COMMONS

In the literature on Natural Resource Economics and Environment, it is difficult to find such an unclear concept as "common" or "common property". The term is used repeatedly to refer to very different situations and which include: state ownership, "no-man's property," owned and defended by a community of users, any common stock (or common pool, as is known in the English terminology) used by multiple individuals regardless of the type of property rights involved. In particular, the "unfortunate tradition" of failing to acknowledge that the distinction between common property (res communes) and free access (res nullius) is critical (Bromley, 1991).

The problem begins four decades ago with Gordon's (1954) article on fisheries, where the author uses the term "common property" to refer to free access. This confusion remains in the writings of well-known authors of property rights theory, especially Demsetz (1967), in his writings on "communal property". And is reinforced by Hardin (1968) in the always quoted allegory "The Tragedy of the Commons." The issue has often been raised (see Ciriacy-Wantrup (1971), Ciriacy-Wantrup and Bishop (1975) and Bromley (1985, 1986, 1991)) with no great impact on its use. Some scholars, even the most meticulous [e.g. Clark (1990)], use the terms common property and free access without differentiation.

The current situation stems largely from the fact that none of the authors cited offers a clear and coherent discussion of the meaning of "rights", "property", or "property rights", before Authority, the problems arising from "common property".

First, to correct confusion, we must recognize that the term property refers not to a natural object or resource but to the flow of benefits that derives from the

use of that object or resource (Bromley, 1991). In common language, land and property are terms that are confused, but, in essence, ownership is the flow of benefits that a user currently holds and which the state and society agree to protect. When economists think of property they are tending to think of an object, in fact, and when they think of common property, they accept the idea of the joint use of that object. This leads to the uncritical acceptance of the aphorism "owned by all, it is not owned by anyone". In fact, it is only right to say that "property to which all have free access is not owned by anyone" (Bromley, 1991).

Once ownership is understood as flow of benefits, it is important to consider the concept of rights and duties. Thus, a right is the ability, duly sustained by the community, to claim a flow of benefits. When the collective protects the rights of someone, it does imposing and supervising duties on others.

At the same time, it should be borne in mind that at the heart of the notion of property is a social relation. For Furubotn and Pejovich (1972), property rights do not refer to relations between men and things, but rather to the sanctioned behaviour and relationships between men that result from the existence of things and possession over their use. Therefore, there is nothing inherent in a resource that absolutely determines the nature of property rights. The nature of ownership and the specification of rights to resources are determined by the members of society and by the rules and conventions they choose and establish regarding the use of resources, not by the resource itself.

In this sense, rights are not relations between the individual and an object or resource, but rather relationships between individuals, with respect to access and use of that object or resource i.e., their associated income stream. Rights can only exist when there is a social mechanism that assigns duties and obliges individuals to these duties. As Alchian and Demsetz (1973, p. 17) reminded us: "What is possessed is the rights to use resources... and these rights are always circumscribed by the prohibition of certain actions (...). Socially recognized actions ".

It should be noted that the controversy surrounding the use of the term "common property" stems, in part, from the different underlying philosophies on which traditional and Western / scientific views of resource management are based. The most widely held contemporary Western view is that ownership is either private or owned by the state. In this view, resources that are not susceptible to private appropriation are called "common property." This does not mean that the resource is collective property of a group, but rather that it is not owned by anyone - it is a free good. For example, marine resources are often defined in the law of the western nations as "owned by no one and belonging to everyone" (NOAA, 1985). According to this definition of common property, these resources are, basically, resources of free access, captured at zero price by any user.

In a second view, closer to tradition, common property should be restricted to communally owned resources, i.e. those resources for which there are communal arrangements / rules for the exclusion of non-members and for the use and allocation of resources between co -owners. The concept of common property in this sense is well established in formal institutions such as either the Anglo-Saxon Common-Law or the Roman law (Scott, 1983). It is equally well established in informal arrangements based on custom and tradition (see Ruddle and Panayotou,

1989), Acheson (1981), FAO (1983), Panayotou (1984)).

Thus "economists should not freely use the concept of" common property resources "or" common "where there are no institutional correspondent arrangements. Common property is not "owned by everyone". The concept implies that potential users who are not members of the co-equal-owners group are excluded. The concept of "ownership" has no meaning without this characteristic. In any case, inaccuracies in the use of this term will tend to remain, given the usual legal definition of resources (fisheries, among them) as common property, in the sense of free goods, in detriment of another, more traditional, in the sense of "communal ownership".

ABOUT NATURAL RESOUCES AND TYPOLOGIES OF PROPERTY REGIMES

One solution to overcoming the impasse around the term common property is the distinction between resources and regime. In fact, a particular resource can be used under different ownership regimes. Bromley (1991) suggests four possible regimes for natural resources. These regimes are defined by the structure of rights and duties that characterize the individual domains of choice: State Property; Private property; Common Property and Free Access ("non-property" in the author's terminology).

State ownership is a property regime in which individuals have duties to observe regarding the use of resources, in the face of an agency that holds the rights to determine the rules of access to resources. As to the second regime, private property, individuals have the right to develop socially accepted uses and have a duty not to exceed them beyond socially acceptable limits.

Common ownership is that in which the group that manages the resource, the "owners", have the right to exclude other non-members and non-members have a duty to comply with the exclusion; Members of a management group (co-owners) also have rights and duties with respect to the use and conservation of resources. Already, in a regime of free access no group of users or owners can be identified. The flow of benefits from the resource is available to anyone; Individuals have both the privilege and no duty with respect to the use and conservation of the resource.

The author thus reaffirms very clearly the difference between what he regards as a "true" common property resource (res communes) and a regime of free access (res nullius). In fact, for authors like Bromley, it is important to recognize that "common property resource" (using the expression of Gordon, 1954) is one for which the group of co-owners is well defined and for which they have established a management regime for the determination of usage rates. Thus, common property, designates a regime that somehow reminds us of "private ownership of a set of co-owners." It is true that decision-making autonomy is lower than in the case of private property, in particular in terms of the transferability of rights. But, in a deeper analysis, the internal decision-making process is sufficiently diverse to warrant the maintenance of the autonomous concept of "common property".

While free access presupposes the non-existence of property rights over resources, clearly defined and audited; the "true" common property is defined by

the impossibility of access to well-defined non-owners and rights, with respect for the use of resources, by the group of co-owners. These common property resources, of which the common forests of Japan (Iriachi), the common pastures of the Swiss Alps, certain coastal fisheries of the Americas, are examples, have been well managed over the centuries. Contrary to the idea of circulating about the tragedy of conservation commons, it is apparent that these resources are not led to inefficient use, precisely because of their common property status. The work of Nobel laureate Prof. Elinor Ostrom has been particularly significant in launching the idea that, faced with problems of common resource management, co-users can cooperate and self-regulate resources. In this sense, the tragedy of the Commons, as described by Hardin in his article of 1968, which in the case of fisheries is translated into overexploitation of resources and overcapacity of the sector, can become a kind of Drama of the Commons. Certainly we can face tragedies (in situations of free access) but we will also have good reasons to laugh (in situations of co-management of natural resources used in a community perspective). Another proposal to overcome the considerable confusion that results from the application of the standard expression "common property resources" to situations other than shared ownership (res communes) is that advanced by authors such as Randall (1983). For this author, who also suggests that the term should not be used to describe free access regimes, the term could even be abolished. It emphasizes, however, that the terms non-exclusive and non-rival represent a considerable advance, of use in several contexts, and relevant for both goods and resources. In fact, the consideration of non-exclusivity and rivalry is very common today. For Berkes and Farvar (1989), regardless of differences, all common property resources share two important characteristics: on the one hand, exclusion, or control of access and use of resources, is problematic; On the other hand, each user, by increasing their consumption, decreases the consumption of the rest, is able to "subtract" the well-being of the other users, i.e., there is rivalry in the consumption. Common property resources are thus defined as a class of resources for which exclusion is difficult and joint use involves rivalry.

This view can itself be criticized. Bromley (1991) points out that non-exclusivity and rivalry refer particularly to the physical and economic aspects of a specific natural resource, which is insufficient because in the identification of the property regime it is not only a matter of describing the attributes of the resource, without evidence of the institutional structure and decision-making process on natural resources. Hence, to suggest that the concepts of exclusion and rivalry represent a vast improvement by elevating these physical and economic attributes to an exclusive position may constitute an error. In the absence of a concept regarding the institutional rules that individuals develop in relation to natural resources, the economy lacks a way of describing a management regime in which a group of co-owners has exclusive use and management authority. Given that property is the flow of benefits (produced or natural) and the individuals of the group their owners, it may be clarifying to recognize that they have a property in common - the term common property may in these circumstances still make sense. It may therefore be said that there are not properly common property resources: there are only regimes of ownership over certain natural resources under

particular conditions and times. That is, natural resources can be managed as property. Common property, state property or private property. Or, and this is where the confusion persists in the literature, there are some natural resources over which there are no recognized property rights. These are called free resources (res nullius) (Bromley, 1991).

At the level of fisheries, the effort of the 1970s towards the creation of Exclusive Economic Zones and the conversion of a regime of free access into a state-owned regime is an example. In fact, the physical and economic attributes of exclusion and rivalry will not have had very significant changes (exclusion has always been possible for data levels of fishing effort and consumption was clearly rival), but the space of individuals towards the redefinition of the regime Management.

In Seabright (1993), for its part, defining common property resources using the concepts of exclusion and rivalry, nevertheless states that, in their sense, these resources are resources for which there are property rights that are exercised (At least in part) by the collectivity of the members of the group. The possible absence of a complete set of contractual relations between the members of the group does not invalidate that their participation is limited and recognized in law or tradition - therefore they cannot be understood as free access resources, at least in the sense of having the risk of new users.

It should be noted that in this view, the problems of common property resources (in the narrower sense of res communes) are typically more complex (since they involve relations between specific individuals) but potentially more soluble than the problems of free access. For this author, formulas that designate common property resources in a more comprehensive way (difficulty of exclusion and rivalry in consumption) allow to integrate also the problems of free access since these are only a particular case in which it is not possible to exclude anyone. Also Ciriacy-Wantrup (1971), in an explicit reference to fisheries, highlights the question of the property regime and its institutional basis. For the author the term common property is, in itself, confusing when applied to fishing resources outside territorial waters. If no institutional decision-making system, through bilateral or multilateral agreements, exists, these resources are res-nullius, a class of fugitive resources, rather than res communes, a distinctly different class. And warns: the Common property as an institution, usually facilitates the design of a regulatory system that affects and conserves resources. If fisheries are identified as a common property resource when there is no such institutional basis for regulation, this designation becomes a barrier to perceiving public action.

Another alternative is suggested by Grima & Berkes (1989), following the work of Dales (1975). It is basically about highlighting how property rights are transferred. Considering that access to resources (and associated flow of benefits) is concerned, greater or lesser transferability of entitlements becomes the central element to consider when allocating resources is at stake. For Alchian (1965), what clearly distinguishes private property is the ability to transfer the use. We can identify four solutions according to different levels of exclusivity and transferability:

- The situation of Free Market, where the legitimate rights of use are exchanged for money through free market institutions, as opposed to the situation of free access, with rights of free access to resources, in a tradition of unrestricted use;
- The next solution to a public property regime where rights of use are administered by a government with a centralized bureaucracy, regulations and courts, as opposed to the situation in which (non-exclusive) use rights are negotiated And exchanged involving fraudulent activities carried out by unscrupulous individuals;
- Intermediate solutions
  - Which correspond to situations where the exclusivity and transferability of rights is not perfectly defined because some of these rights are used in common - they have characteristics of communal property : rights of use partly privatized and administered by a community of users;
  - Or rights of access to community resources in a tradition reminiscent of the freedoms of introduction into rooms granted to the boy in the stateroom.

In summary: In spite of the undifferentiated use of the term "common property", it is convenient to clarify the concept of distinguishing between various property regimes - even the importance that this implies in the definition of public policy.

Summarizing the various contributions, we can differentiate the following idealized types of Property regimes relevant to common property resources

Free access (Res nullius)	Free goods; Rights of use of non-exclusive and non-transferable resources; Rights owned in common but free access for all (soon owned by no one)
State Property (Res publica)	Possession, management and control of the State; Public resources for which the rights of use and access have not been specified
Community Property (Res communes)	Resource use rights are controlled by an identifiable group (not privatized or managed by the Government); There are rules about who can use the resource, who is excluded and how it should be used; System of community-based resources; Common property

THE CASE OF FISHERIES

In the particular case of fisheries, the problems presented in the previous section are persistent poor conceptualization and inadequate use of terms, with negative repercussions in the analysis of situations and in the definition of public policies. Of course, the use of the term common property persists since fisheries are defined in the law in several countries as "common property". However, only in

the sense that the resource belongs to the public (res publica) and not automatically usable by all users are subject to a set of regulations by Governmental organizations. Moreover, the use of the term "common property" is very common in the theoretical literature of Fisheries Economics - somewhat in Gordon's (1954) tradition, "pa" of modern economic theory of fisheries. Often the use of the concept is confused with that of free access.

The purpose of this point is precisely to show how the fisheries case is a living example of how a resource can be used according to various forms of access, and that what we call common property is not one but several categories of property (Buck, 1989).

An example (hopefully!) enough demonstrative: A fish caught on the High Seas, where it is not owned by anyone (res nullius) becomes property of the fisherman by virtue of his capture. No nation or individual can claim their property prior to their capture. This "deficit" of property resides, note, not in the fish itself, but in its location. The same fish if had been caught in a brook owned by a Scottish lord, it would be private property. However, if this fish had traveled to the Canadian waters of Newfoundland to spawn it would be owned by the State (res publica) and its catch would be subject to numerous regulations. Still, the same undifferentiated and peripatetic fish, if it had swum to the waters of a tribe of American Indians, would become property of the whole community (res communes). Therefore, the common property resource assignment to the fish is not correct: it can be res-nullius, res-communes, res publica, or simply private property, depending on where it is caught, how and by whom.

Moreover, in this field of fisheries, a new concept can take the property issue even further: it is the concept of "common heritage" (Christie, 1972; Ribeiro, 1992). The initial idea was exposed by Arvid Pardo, Malta's ambassador to the United Nations, for which there are some resources that are a common heritage of mankind. They are owned by all and, as they are already owned, cannot legally be appropriated by anyone or any State, and should therefore be subject to common management. During the discussion of the New Law of the Sea, Pardo complained that the concept should be applied to the resources of the Sea outside the limits of national jurisdictions (i.e. beyond 200 miles, which constitute the so-called Exclusive Economic Zones). Among these would be the high seas fisheries as well as the marine bottom deposits of minerals, for example. This new concept would thus appear as a modern alternative to the current view that opposes only exclusive property to free and unlimited access, an obsolete distinction from the perspective of the proponents.

In Buck (1989) is proposed a typology that allows to clarify the management options, bearing in mind the different situations in relation to the property, and that includes the nature of the resource (fugitive and renewable), the migratory pattern of the fishery (stock common or of private jurisdiction, transferable versus non-transferable, exclusive versus non-exclusive) and the scale of use (traditional, local, regional, national, international).

We are therefore faced with a diversity of situations in relation to property. The overcoming of some ideas about fisheries management, and the approximation to reality, requires a more careful analysis of this diversity, rather

than the uniform consideration of all questions about the protective hat of "common property". In Schalager & Ostrom (1992) is proposed a conceptual framework of general analysis for natural resources that can be very useful in the case of fisheries. For these authors, in conducting and organizing their daily activities, individuals engage in different levels of action - merely operational, collective choice, or even constitutional choice.

Operational activities are restricted to (and can be predicted through) rules established at operational level (considered basic) irrespective of the origin of these rules, these being understood as prescriptions that require, prohibit or allow certain actions for more than one individual. For example: the rule used by fishermen to specify the types of equipment allowed for a particular location and type of boat can be seen as an operating rule.

These can still be changed to the higher level: constitutional level. A set of fishermen who set up a marketing cooperative or a PO in the context of the Common Fisheries Policy are involved in rules of constitutional choice as they imply decisions at the level of policy definition.

It should be noted that, in this context, the terms rules and rights are not used, as is sometimes the case, as identifiable. It must be recognized that rights are the product of rules and not properly equivalent. The rights refer to particular actions that are authorized; Rules, to the requirements which authorize them. The concept of rule relates here to shared ideas about prescriptions that affect more than an individual. Whether they are operational, collective choice, constitutional choice, rules guide individuals to carry out the actions they require or allow, and avoid taking prohibited actions. Thus, a property right can be understood as the authority to take action in relation to a specific domain (which also implies duties). The rules specify both. With respect to resources which stock is common, the most relevant property rights at the operational level are:

Access and catchability (Withdrawal)

Access is the right to enter a defined physical property and withdrawal is the right to obtain the product of the resource (in this case, the catch). If a group of fishermen has access rights, they have the authority to search for the resource; the rules specify the necessary requirements to be able to exercise this right: licensing, quotas, lottery, etc. (See Scott (1986) or Wilson (1982)).

Individuals who have access and possibility of withdrawal may or may not have more extensive rights that allow them to participate in 2nd level actions (collective choice). It is here that the distinction between rights from the first level (operational) and the second level (collective choice) becomes crucial - it is at bottom the difference between holding a right and participating in the definition of future rights to be exercised.

Additional definition authority is what makes 2nd level rights important. These include:

Management, exclusion and disposal (transferability)

The right of management translates into the right to regulate the patterns of use, transformation and improvement of the resource. It is a 2nd level right that authorizes its holders to define the 1st level withdrawal rights governing the use of the resource. Thus individuals in their possession are allowed to determine who, how and where, can capture, and when and how the structure of the resource can be changed. For example, a group of fishermen who establish in a limited area various types of catching activities for different areas exercise their management rights.

The right of exclusion is what determines who has the right of access and how it can be transferred. It is thus a right of collective choice that authorizes members to establish operational rights of access. Its holders have the authority to define the qualifications that individuals must present to have access to resources. For example, when a set of fishermen limit access to fishing boats to their fellows from a certain age or use a certain type of technology, they are exercising their exclusion rights.

Disposal is the ability to sell and / or lease the prior rights. Thus, the right of alienation allows the transfer of part or all of all 2nd level rights to an individual or group. Exercising this right means selling / leasing the management and / or exclusion rights.

It should be noted that a number of fishermen who change the conditions of access by expanding the number of licenses for a given fishing zone are not, therefore, entitled to sell, insofar as they do not transfer 2nd level rights For other individuals are only exercising their right of exclusion. The right of alienation refers only to the authority to alienate the rights of collective choice. In the view of the economist this right of alienation is essential, in that it allows resources to be transferred to their most valuable use (Coase, 1960). The analysis of the different forms of alienation constitutes an essential field of study.

These rights, or bundles of rights, are a very common term in the terminology of the Theory of Property Rights, can be combined in different ways. They lead us to a series of typified situations that can act as a framework for conceptual analysis for the study of different fisheries, and in our essential for the analysis and interpretation of the development of certain fisheries subject to sensitive changes in their institutional framework.

"Bundles" / bundles of rights associated with different positions

	Owner	Proprietary	Applicant	Authorized User
Access and Withdrawal	X	X	X	X
Management	X	X	X	
Exclusion	X	X		
Alienation	X			

Individuals who have access and withdrawal rights call authorized users. If so specified in the form of operational rules, these rights may be transferred temporarily or permanently to others. It should be noted, however, that this transfer is not equivalent to the disposal of management and exclusion rights.

Users' rights are defined at a second level by others. At Schalager and Ostrom this situation is exemplified with the much-discussed case of salmon fishing in Canada. In the case, there is an Entry Commission that determines the number of licenses available and distributes them among fishermen. Each fisherman may not hold more than one fishing license, but from time to time the licenses are transferable. Fishers are thus users in so far as they are given access and withdrawal rights, but do not enter into the collective choice of these rules, defined and imposed at the level of the Central Government.

Applicants may be called to individuals who, in addition to their access and withdrawal rights, also have the right to management. Through this, applicants have the authority to establish withdrawal rules at an operational level, but they neither can specify who has access to the resources, nor can alienate this right of management. One example is what we can find in the fishery in Jambudjip, India, where fishermen establish rules for the use and coordination of fishing activities on different fishing vessels but do not have the right to establish who should be allowed access. In the background, there is a situation in which fishing grounds are allocated and fishermen have the possibility to establish their own rules of use but have no role in the decision on access to resources - something that brings us closer to an undifferentiated mix of "res publica" with the communal rights of Alchian and Demsetz (1973).

Owners are individuals who have rights to the 2nd level of participation in decisions about management and exclusion. Thus, owners can authorize access and establish rules of resource use, but they cannot alienate these rights of collective choice. It is on them that the case studies on "common property" regimes have focused. Let us say that, in this sense, the authors of this conceptualization use the term "common property" to mean collective use with some form of government regulation or self-regulation (Terrebone, 1995).

A significant example is found in cod fishing in the Terra Nova area (Coelho, 1999). For a certain type of gear (with a trap), fishermen (only those in the area) have to enter a lottery which guarantees a "cradle" in the fishing net, and since 1919 the lottery system has been codifying the limits of jurisdiction for each community (Acheson, 1981). Fishermen, however, cannot sell their management and exclusion rights.

Owners are individuals who, in addition to prior rights, still hold the rights of alienation. Miller (1989) gives us an example by fishing for lobster in the area of Ascencion Bay, Mexico. The fishermen involved in this activity belong to a cooperative and divide the available space into plots. For each allocated portion the fisherman holds a complete set of rights, including the right to sell his portion, immediately losing the possibility of exercising his rights of management and exclusion in the area.

It should be noted, however, that the divestiture rights can be exercised in full but also only partially and for a limited time. Alchian and Demsetz (1973) point out that the bundles of rights associated with a resource are divisible, which sometimes makes the situation hybrid and makes it difficult to distinguish between, in particular, private property and state ownership. For example: in coastal areas, certain legal agreements between state and companies give rise to

hybrid situations between applicant and owner, in the case of aquaculture. In turn, Scott (1989) is also moving towards a stronger specification of rights. For the author the characteristics that identify a right include: Duration, Flexibility, Exclusiveness, Tribute Quality, Transferability and Diversity.

It should also be noted that the sources of access, withdrawal, management, exclusion and transferability rights are diverse. Thus, they can be monitored by a government whose trades explicitly grant users these rights - de jure rights, insofar as they are recognized by legal instruments; But may only be 'of fact' rights originating between users who cooperate and define these rights among themselves. These rights are very important indeed. In general, the literature examining property rights and regulation of fisheries is rather pessimistic in relation to self-regulation processes, both in terms of efficiency assurance and in relation to the problem of species

FINAL REMARKS

As a final note it is underlined how, and to what extent, this conceptualization can be decisive in the research on Natural Resource Economics and Environment in general, and Fisheries Economics in particular. For there, the way it influences the design of public policy itself.

First, a penetrating element of analysis must be retained: ownership is relative to use, not resource. Therefore, the basic issue, which is sometimes poorly identified in the economic analysis of natural resources, in particular as regards fisheries, is the property regime.

As a consequence, another key issue must be underlined: traditional fisheries literature has always pointed to the "common ownership" of these resources as the cause of inefficient use of resources. In this logic one can see the constant appeal for the change of property rights, from Gordon (1954) and Scott (1955) to the present day. However, this question is always posed with mistrust even to the most involved researchers. As Dasgupta and Heal (1979) argued, in the case of fisheries, it is "technically impossible" to assign pure and simple property. This statement may indeed prove to be quite incorrect and, in a way, obscure the analysis. In fact, everything seems to indicate that the authors incorrectly identify the right of property - we see the sea and its resources as objects, when the essential thing is, we repeat, the question of the regime of use.

Thus, if we move to a usage / access regime view we can identify different degrees, different property rights and formulas for resource management and use. This allows an approach to the most penetrating institutional structure, trying in some way to overcome difficulties and impasses of the basic neoclassical model in which the Theory of Renewable Natural Resources is based. Changing access and management formulas, it must be acknowledged, is certainly not "technically impossible".

In the particular case of the Fisheries Economy, both in terms of positive and normative analytical research and in the empirical deepening with case studies, one gains in approximation to reality and its correct understanding, if not from the identification of fishing as " Common property "and as if it were a single situation.

It is a reality that has evolved, going through different sets of rights, the results of which can be assessed. It is therefore possible to identify different institutional structures and to assess their economic and social effects.

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