



COASTAL DEVELOPMENT AND BUREAUCRACY: AQUACULTURE IN PORTUGAL - THE POSSIBLE EMERGENCE OF AN “ANTI-COMMONS TRAGEDY”

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ABSTRACT:

Last decades of the 20th century have shown many problems arisen from the emergence of commons mismanagement and under-defined property rights. It's what we call the “Tragedy of the Commons” (Hardin, 1968), affecting, especially, the design of environmental and natural resources management policy.

In the 80s, Michelman introduced another problem, this time about the excessive fragmentation of property rights. A new concept, “anticommons”, is developed to put in evidence some problems one can see as the mirror image of traditional “Tragedy of the commons”. These problems include the under-use of resources and may come from several sources, including bureaucracy.

Michelman introduced the concept of “anticommons” to explain “a type of property in which everyone always has rights respecting the objects in the regime, and no one, consequently, is ever privileged to use any of them except as particularly authorized by others”. In this sense, “anticommons” is seen as a property regime in which multiple



owners hold effective rights of exclusion in a scarce resource. The problem stands in this: coexistence of multiple exclusion rights creates conditions for suboptimal use of the common resource.

Buchanan and Yoon (2000) suggested a special view of this problem. The authors stated that the anti-commons construction offers an analytical tool for isolating a central feature of “sometimes disparate institutional structures”. This means that the inefficiencies introduced by overlapping and intrusive regulatory bureaucracies may be studied with the help of this conceptualization.

When an entrepreneur seeks to invest in a project and the action is inhibited by the necessity of getting permits from several national and regional agencies, each one holding exclusion rights to the project, we may face the “Tragedy of the Anticommons”. In this context, the possible emergence of a situation of anticommons can create a lot of problems in the development of local initiatives of entrepreneurship, affecting the potential of coastal development.

There are only a few empirical studies on anticommons tragedies in the real world, most of them focusing on pharmaceuticals industry. The *main purpose of this paper* is to use this conceptualization to study the design and execution of aquaculture policy in Portugal and to introduce the possible emergence of an “anti-commons tragedy” when we approach the difficult process of approval and execution of projects of aquaculture in the Portuguese coastal areas. Our results are consistent with the suggestion of Buchanan and Yoon.

INTRODUCTION

Last decades of the 20th century have shown many problems arisen from the emergence of commons mismanagement and under-defined property rights. It's the “Tragedy of the Commons” (Hardin, 1968), affecting the design of environmental and natural resources management policy.



In the 80s, Michelman introduced another problem, this time about the excessive fragmentation of property rights. A new concept, “anticommons”, is developed to put in evidence some problems one can see as the mirror image of traditional “Tragedy of the commons”. These problems include the under-use of resources and may come from several sources. Buchanan and Yoon (2000) suggested a special view of this issue. They stated that the anti-commons construction offers an analytical tool for isolating a central feature of “sometimes disparate institutional structures”, that is, the bureaucracy. This means that the inefficiencies introduced by overlapping and intrusive regulatory bureaucracies may be studied with the help of this conceptualization.

The *main purpose of this paper* is to use this conceptualization to study the design and execution of aquaculture policy in Portugal and to introduce the possible emergence of an “anti-commons tragedy” when we approach the difficult process of approval and execution of projects of aquaculture in the Portuguese coastal areas.

1) ON “COMMONS”, “ANTI-COMMONS” AND “TRAGEDIES”

The property rights (his common absence or vague stance) are in the core of the problem of natural resources management.

Since the seminal paper of Gordon (1954), the central idea is that, in conditions of free access and competition, the market leads to non-optimal solutions in the use of the resources. The open access nature of many natural resources and the presence of externalities in the capture/use process lead to market equilibrium solutions that implicate an overexploitation of the resources - “The Tragedy of the Commons”, Hardin (1968) – and industries’ overcapacity.

The identification of the property regimes is not only a question of describing the attributes of the resource. It’s a matter of putting in evidence the institutional structure and the process of decision over resource use (Seabright (1993)).



For the “entrepreneur” and for the public authorities the different situations about property rights are critical when thinking about possible projects of investment and the design of natural resources policy. Open access regime presupposes the non-existence of property-use-rights perfectly defined and controlled and it’s the open access that “creates” tragedies. Last decades of the 20th century have shown many problems of commons mismanagement arisen from under-defined property rights.

In the 80s, Michelman introduced another problem, this time, about the excessive fragmentation of property rights. A new concept, “anticommons”, was introduced to put in evidence some problems one can see as the mirror image of traditional “Tragedy of the Commons”. These problems include the under-use of resources and may come from several sources, including bureaucracy.

With this new concept of anticommons, Michelman’s purpose was to explain “a type of property in which everyone always has rights respecting the objects in the regime, and no one, consequently, is ever privileged to use any of them except as particularly authorized by others”. In this sense, “anticommons” can be seen as a property regime in which multiple owners hold effective rights of exclusion in a scarce resource.

The problem stands in this: coexistence of multiple exclusion rights creates conditions for sub-optimal use of the common resource. The undefined limits for property rights generate several problems that are expressed by the under-use of the resources and loss of value. So, we can become aware of anticommons as producing other tragedies, something like a mirror effect of “Commons tragedies”.

When multiple agents have the right to exclude others from the use of a scarce resource and no one of them has an effective privilege to use it, we are in presence of a “tragedy of the anticommons”. When several agents may take decisions about how to use a specific resource, jointly hold by all of them, and when one of them may impose his/her own decision to the others, imposing his/her veto power, we are in presence of this kind of anticommons problem.

In this situation, all the agents have to agree about the utilization that they have to give to the resource they hold together. If not, the resource simply may be not used or may be underused.



The “*Tragedy of the anti-commons*” happens when resources remain idle even in the economic region of positive marginal productivity. Acting under conditions of individualistic competition, exclusion rights will be exercised even when the use of the common resource by one party could yield net social benefits.

Buchanan and Yoon (2000) suggested a special view of this problem. The authors stated that the anti-commons construction offers an analytical tool for isolating a central feature of “sometimes disparate institutional structures”. This means that the inefficiencies introduced by overlapping and intrusive regulatory bureaucracies may be studied with the help of this conceptualization.

When an entrepreneur seeks to invest in a project and the action is inhibited by the necessity of getting permits from several national and regional agencies, each one holding exclusion rights to the project, we may face the “Tragedy of the Anticommons”.

In this context, the possible emergence of a situation of anticommons can create a lot of problems in the development of local initiatives of entrepreneurship, affecting the potential of regional/coastal development.

2) AQUACULTURE: COASTAL DEVELOPMENT AND BUREAUCRACY.

As we said, the “*Tragedy of the Anti-Commons*” happens when resources remain idle even in the economic region of positive marginal productivity. There are only a few empirical studies on anticommons tragedies in the real world, most of them focusing on pharmaceuticals industry.

As suggested by Buchanan and Yoon, the anti-commons construction offers an analytical tool for isolating the problems of bureaucracy. We think that this conceptualization can be used, in operational terms, in the design of the Portuguese aquaculture development program. This paper introduces the possible emergence of an anticommons tragedy when we approach the difficult process of approval and execution of projects of aquaculture in the Portuguese coastal areas.



To study this problem, we used the results of the evaluation process of the last Operational Fisheries Program, funded by European Union (POP 2000-2006/ QCA III).

In this context, our research methodology integrated the analysis of:

- the rules of the game,
- norms for differentiation and approval of projects,
- institutions and Administration management circuits,
- performance: indicators of *Physical Execution* (number of projects funded) and *Efficiency Execution* (investment costs level of the projects); time of approval and execution of projects; stakeholders and Management Agency perception on the process.

The central results of the analysis were the following:

First, the Portuguese experience shows that, contrary to the Government expectations, the impacts of investments in the aquaculture sector has been of little relevance and directed just for traditional species.

Investments have not allowed significant productions. This situation is the reflex of:

- the insufficient dimension of economies of scale and the technical and organizational inadequacies of the project promoters,
- the dimension of the environmental issues that are involved,
- lack of a plan that regulates the coastal areas and that establishes the territories to be used in the aquaculture sector.

The emergency of the problem of the “tragedy of the anti-commons” is a reality, in the sense of Buchanan and Yoon. *This situation reflects the excessive partition of the property rights and the existence of multiple bureaucratic circuit that creates an enormous complexity and administrative slowness of the process of approval and implementation of the projects.*

In the aquaculture area, we can see that there are too many entities, to whom it is necessary to require their approval for the project and that all the administrative procedures motivate a situation of delayed global authorization. The stakeholders perception of this process suggest that interesting projects (profitable and “friends of fishing”) were not exploited just



because there were too many rights to exclude. There are promoters who want to exploit a resource with important economic, biological and social consequences, but administrative procedures simply make the project “not viable”.

We may also anticipate an important loss of value. In fact, this problem has destroyed value because the presented project has required initial financial resources and there is no created value because project had a delayed approval. The agent who supports the project loses an important period of time to implement it and he loses money because there is an important period without producing. In many situations, projects were not implemented because the favorable and the appropriate time had simply gone.

The Portuguese case suggests that environmental authorities embodied in the approval process have prevented some value reducing development but may have also prevented value-enhancing development. Economists and environmentalists have perhaps concentrated too much attention on the commons side of natural and environmental resources and have neglected the anti-commons side.

The Program evidenced a strong expectation from the private sector but the “impediments” of bureaucratic nature, especially those that result from the necessary environmental impact evaluation, seem to be the source of a set of difficulties that can appear at this level. This requires the Public Authorities to eliminate or minimize the bureaucratic obstacles associated to achievement of this kind of projects.

The purpose of the next point is to make an analysis of the complex procedure scheme of approval and implementation of projects, just to have an idea about the possible roots of anti-commons tragedies in this sector.

3) LEGAL PROCEDURES

Aquaculture is fitted under the control and supervision of Ministério da Agricultura, do Desenvolvimento Rural e das Pescas (See Decreto Regulamentar nº 14/2000 – September, 21st, 2000). The Decree specifies the requisites and conditions needed to install and exploit



a plant on this area. Also, the Decreto Regulamentar nº 9/2008 (March, 18th, 2008) defines a set of rules specifically for installations offshore.

The responsible Department for Aquaculture is specifically DGPA (Direcção Geral das Pescas e Aquicultura), which is responsible for supervising and controlling the activity of aquaculture sector.

The initial steps for a project approval are (Decreto Regulamentar nº 14/2000):

1. Request to DGPA;
2. The request must have the following elements attached (Art 10º - nº 3):
 - a. Copy of ID card of the requester;
 - b. Authorization to use the aquatic domain, issued by the competent authority;
 - c. Property documents for the land;
 - d. Technical description of the productive process;
 - e. Topographic plant of the local (1:25000);
 - f. Design layout of the facilities (1:5000);
 - g. Detailed project of the infra structures, at 1:200;
 - h. Coordinates of the area referred to a central country reference point;
 - i. Plant and detail drawings of the infra structures at 1:50 or 1:100;
 - j. Sea sign project, depending on the type of installation.

The competent authority for this specific kind of activity is named Administração da Região Hidrográfica and has a huge power, demands an aquatic tax and controls all the activities within 500 m from the cost line.

This decree refers that (art. 12º) whenever the site is located on an area under maritime jurisdiction, DGPA along with 'Capitania do Porto', promotes the following two actions within the next 30 days after having received the whole process:

- a. Writes an edict (edital) with the authorization request, which must be visible for 30 days on a few legal buildings, so that third parts can claim against the request.
- b. Call the survey committee.



If there are reactions against the project, it may be enough to block the project.

Art. 10º - nº 7 states that the project referred on j) of the number 3, is sent by DGPA to 'Capitão do Porto' of the area, with the objective of emitting a binding opinion, within 60 days, after consulting the Instituto Hidrográfico and the Direcção de Faróis (Lighthouse Direction).

The process is sent now by DGPA to each of the 10 entities involved in the survey that are described in the 13th article –see art 11º - nº 4.

This part of the process may have already consumed 2 to 3 months.

The referred entities that compose the survey committee are the following:

- a. 'Capitão do Porto' or another officer who may replace him;
- b. DGPA representative;
- c. IPIMAR representative;
- d. Maritime public domain representative;
- e. ICN representative (today ICNB);
- f. DRA representative (Direcção Regional do Ambiente);
- g. Instituto Português de Arqueologia representative;
- h. Direcção Geral de Veterinária;
- i. Direcção Geral de Saúde;
- j. Municipalities' representatives (all involved areas).

Gathering all these representatives on a certain date is quite difficult. The committee only works with the presence of the majority of its members.

There are at least 3 members of this committee whose starting point is usually against:

- a. Capitão do Porto, because he predicts more work and trouble in the future if the project is installed;
- b. Maritime public domain representative, for the same reason;



c. ICN because they are always against everything in advance.

All the other members do not even care about the subject and their participation is not pleasant at all for them.

The survey has to be scheduled within the next 30 days after the end of the edict term (art 14º).

The result of the survey is considered favourable just if the whole committee members agree (art 15º).

DGPA informs the requester about the result of the survey within the next 30 days. If the result is favourable under restrictions the requester has 30 days to correct the project according to these restrictions (art 16º).

So, the edict is usually published 2 or 3 months after the request demand. It has to be published for 30 days before the survey is set up and the scheduled date for the survey may still take 30 days more to be set. All this may have taken more than 5 months.

This shows how “disparate institutional structures” may lead to an irrational ending.

A significant loss of value may result with this process. This leads to a problem of value destruction because financial resources are required for the project but no value is created due to the delay on the approval. The authorities involved in the approval process (environmental, territorial, health, etc) have prevented some value-reducing development but also value-enhancing development.

4) FISHERIES OPERATIONAL PROGRAM (2007-2013): RISK EVALUATION

Finally, the analysis suggests the following risk evaluation on the design of recent Fisheries Operational Program (2007-2013):



One of the axes, in which the Program is structured, aims to develop the aquaculture sub-sector of fisheries. This axis corresponds to about 42% of the total cost of the Program. So, it can be seen as one the most important objectives of the Portuguese Fisheries Policy. The proposed investment in aquaculture and in the sub-sector of transformation and trade of fisheries products stands about 165 million Euros. It is treated as a bulky investment that underlines the proactive nature of this axis in the global context of the Program.

At the same time, be noticed that in this axis the participation of the private initiative is foreseen as a very important involvement in the plan investments of the Program and it represents about 70% of the total private investment in the fisheries.

Obviously that we do not doubt about the opportunity and relevance of these objectives.

However, we should notice that these objectives, especially at the level of the aquaculture development, involve significant risks:

- The experience has been demonstrating that the involved companies don't have the dimension, the economies of scale and the technical and organizational capacities to be involved in these projects;
- These developments involve an additional risk, larger periods of return of the investment and an additional competition in this area, particularly from the productions of the countries in the South of Europe.
- The Program evidences a strong expectation on the private sector. However, the financial participation of the Fisheries European Fund is lower than the usual rates of co-participation.
- This last problem gets a major dimension because of the “tragedy of the anti-commons”. The “impediments” of bureaucratic nature, especially those that result from the necessary environmental impact evaluation, will be a strong obstacle to the Program execution.



CONCLUDING REMARK

This debate brings also another interesting issue: neither the motivation of the bureaucratic authorities nor the constraints on their exclusion rights is captured by a simple, one-dimension, theoretic model. Those who are empowered to issue permits may not seek to maximize rents and, perhaps of greater importance, may be authorized to refuse permits only with cause. These agencies cannot, or may not desire to, capture pecuniary gains. So, the allowance for such non economic motivation on the part of the excluders also suggests that the potential conflict may not be primarily distributional but also reflect different objectives for facility welfare development. The introduction of these institutional issues may enhance the scope of this research.

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