

# **Adapting the IAD framework to analyze a cross-level decision-making process of a mega project: the port of Sao Sebastiao, Northern coast of São Paulo – Brazil\***

**Marcela da S. Feital\*\***

**Eduardo S. Brondízio**

**Lúcia da C. Ferreira**

## **1. Introduction**

The approval of infrastructure megaprojects involves negotiation arenas at different levels. From the discussion of long-term goals to the crafting of rules defining the nature and scope of a project, the decision-making process brings together actors with different goals, worldviews, and negotiating powers. This article examines the multiple level arenas associated with the expansion of the seaport in the Northern coast of São Paulo (this region is presented in Figure 1), and its action situations such as its environmental licensing process and public hearings. The environmental licensing process<sup>1</sup> allows us to examine links of different interaction levels among actors from national, state and local contexts. In order to understand local dynamics and explore these article goals, it is important to understand the wider context in which this action situation and its deployment work in. This way, the aim of this article is showing the different action levels related to the decision arena about Sao Sebastiao port's extension, the main components of each level, and the feedback relations among them. This analysis was possible by an adaptation of the Institutional Analysis and Development framework (IAD framework) which enabled the identification of a network of action-situations (national/regional/local), their components and interlinkages.

---

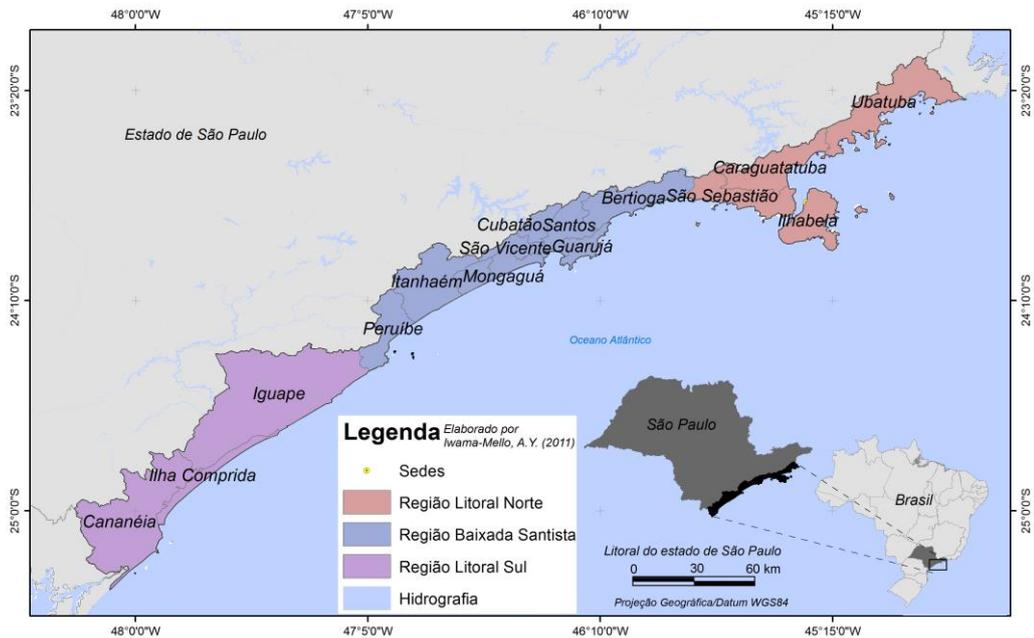
\* The first draft prepared for delivery at the Workshop on the Ostrom Workshop (WOW5) conference, Indiana University Bloomington, June 18–21, 2014. © Copyright 2014 by the author.

\*\* Authors affiliations: Marcela da S. Feital is Master in Sociology at Universidade Estadual de Campinas (Unicamp) – São Paulo – Brazil. Eduardo S. Brondízio is Associate Director of Research at the Anthropological Center for Training and Research on Global Environmental Change, Professor of Department of Anthropology, Adjunct Professor at School of Public and Environmental Affairs (SPEA) at Indiana University – Indiana – The United States of America. Lúcia da C. Ferreira is Professor at the Center for Environmental Studies and Research (NEPAM) and Human Science and Philosophy Institute both at Unicamp – São Paulo – Brazil.

<sup>1</sup> The environmental licensing process is the administrative procedure whereby the environmental agency allows the installation, expansion and operation of projects and activities that use natural resources and that are considered actual or potentially polluters or that could generate environmental degradation (Brazilian Ministry of Environment, accessed in 29/10/2013).

The interdependence among these different levels was expressed by the IBAMA<sup>2</sup>'s worker interviewed in December, 2012. He talked about the different steps of a mega projects decision-making as including [paraphrasing] ‘from the national policies decisions about infrastructure and development to decisions about the project’s technical dimensions, which includes local issues about interferences, risks and impacts of the megaproject’.

**Figure 1: Coast of São Paulo - Brazil**



Source: produced by Mello (2011) for the Thematic Project *Urban Growth, Vulnerability and Adaptation: Social and Ecological Dimensions of Climate Change on the Coast of São Paulo* (Ferreira et al., 2012). The Northern coast is painted in pink.

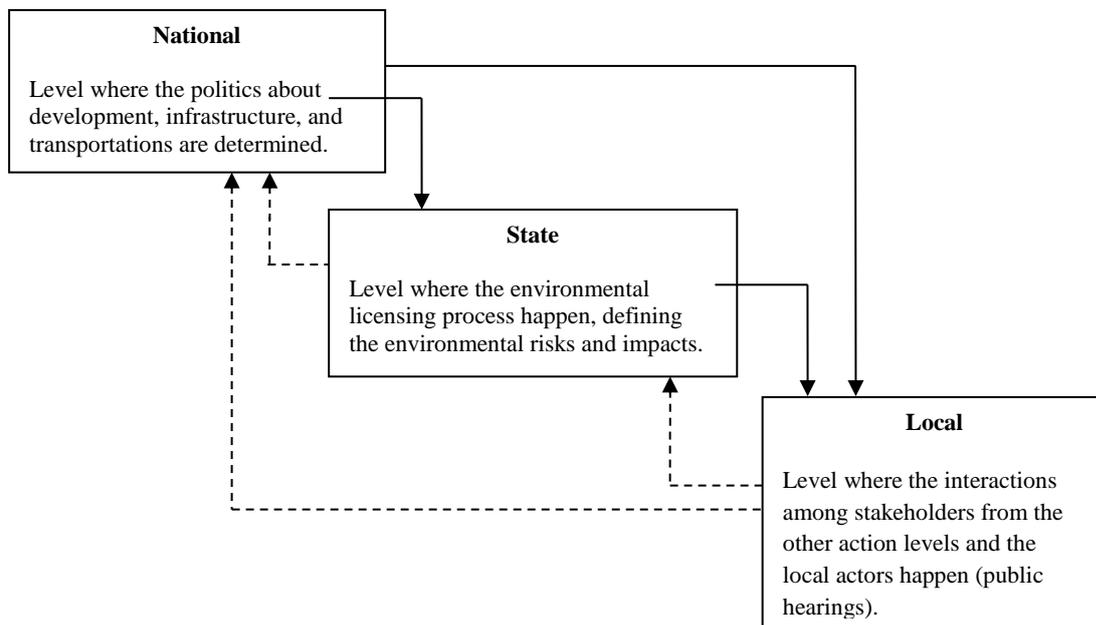
As shown in Figure 2, the first action situation that formed this decision arena, and also the one that had a more contextual role for this research analysis, was named “national”. It is where the negotiations about politics, national development economy, infrastructure and transportation happened and influenced the following action situations (illustrated by the solid arrows). In other words, the negotiation’s outcomes and the rules crafted in this action situation trigger processes and actions in the other sequent situations, as will be shown later (Figure 5). The same happens at the state level, where the negotiation about limits, risks,

<sup>2</sup> Brazilian Institute of Environment and Renewable Natural Resources, the main Brazilian agency responsible for developing policies and activities for preservation and conservation of natural heritage.

impacts and mitigations happen during the environmental licensing process: the outcomes from this action situation generate some conditions that contribute to organize the local action situation. This local level, in its turn, is the place where the interactions among the local actors with different interests in the decision-making process and the other stakeholders occur. Therefore, there is a really clear relationship of influence when you analyze from the broadest level to the local level (illustrated by the solid arrows).

On the other hand, the feedback relations (illustrated by the dash arrows) were better identified after the data analysis using IAD framework. The outcomes of each action situation had influence in the actions above and below it, completing a feedback cycle, but this does not mean it is something linear. This way, our main goal in this article is clarifying the relations among the action situations that compose the decision arena of São Sebastiao’s port.

**Figure 2: The different action situation levels that form the decision making process about the Sao Sebastiao port’s extension.**



Source: author’s elaboration. Many of the participants question themselves about the reciprocity between the different levels: are the negotiations occurred during the public hearings considered or have an influence on the interactions and the outcomes in the other action levels?

Building upon Ostrom (2011) and McGinnis (2011), inter-related action situations are conceived by Ruiz-Ballesteros e Brondizio (2013) as context of interaction, negotiation and creativity and composed of a complex web of multiple and recursive relations. These authors

summarize the seven main components of an action situation, of which an adaptation was made in order to analyze the decision-making process about the Sao Sebastiao port's extension project:

- 1) The common-pool resources used during São Sebastiao Port's activities;
- 2) The actors that participate in collective action situations;
- 3) Perceptions, knowledge, and worldviews that actors use to direct their actions;
- 4) Forms and contexts of the actions (formal/informal);
- 5) Governance tools (e. g., regulations, management plans, assessment mechanisms) that they use in their actions;
- 6) Intended rule-crafting;
- 7) The expected outcomes

According to Ostrom (2011), McGinnis (2011) and Ruiz-Ballesteros and Brondizio (2013), there are several rule categories which influence the action situation's outcomes in some way. But each study case has a rule set considered important to its institutional analysis<sup>3</sup>. Thus, it becomes important to analyze the rules that are being crafted in each action situation level, because they help to define the outcomes of the same action level, and they can also help to configure the subsequent action situations. Table 1 summarizes the seven rule types that could influence an action situation's organization according to these authors definition.

**Table 1: The seven types of rules that could influence the organization of an action situation**

<b>Rules</b>	<b>Definition</b>
<i>Position Rules</i>	Establish a set of positions, each of which has a unique combination of resources, opportunities, preferences, and responsibilities.
<i>Boundary Rules</i>	Specify how participants enter or leave these positions, defining the number of participants, their attributes and resources.
<i>Choice Rules</i>	Specify which set of actions are assigned to which position, and what they may, must or must not do.

<sup>3</sup> This is one of the strengths of IAD framework: its flexibility and adaptation possibilities. Giving us a model as an analysis tool, the IAD framework enables the introduction of other elements that were not contemplated at the initial model. At the same time, it does not require a forced adequacy from empirical data to the model's elements. This enables the researchers to depict the system in its multilevels of complexity, without losing the wealth of each case.

<i>Scope Rules</i>	Delimit the potential outcomes that can be affected and, working backward, the actions linked to specific outcomes.
<i>Aggregation Rules</i>	Specify the level of control that a participant in a position exercises in the selection of an action at a conflict.
<i>Information Rules</i>	Specify the knowledge-contingent and information available to the participants.
<i>Payoff Rules</i>	Specify the benefits and costs that will be assigned to particular combinations of actions and outcomes.

Source: Adapted from Ostrom (2011) and McGinnis (2011).

Thus, these seven elements were analyzed for each action situation level that composed the decision arena studied, in order to understand who were the actors participating in the process, what were the resources available to mobilize and influence the decision-making, what were the positions and responsibilities of each actor, and what are the potentials upshots of the project for these actors. By these means, the first section of this article presents briefly the empirical case. The second one explored in a contextual way the elements of the national action situation, enabling us to frame the other levels into this broader context. The third one was dedicated to analyze the essential elements of state level, more specifically the licensing process. Finally, the last part analyzes the local action situation, its essential components, the relationship among the three levels, and the direct influences from the broader level to the most local, as well as the feedback interlinkages.

## **2. The Empirical Case**

The choice of empirical case was based on the specificity and the historical importance that the northern coast of São Paulo has in the environmental and economic context not only regional but also national and even international. This area summarizes some of the key social and environmental dilemmas of development of contemporary Brazilian society because it tries to combine economic improvement and environmental conservation. Furthermore, this is an area with 1) rich biodiversity, with significant part of the last remnants of Atlantic Forest in the country in various fields of environmental protection, one of the three most endangered ecosystems on the planet and key biodiversity area according Aidar et al. (2001), 2) seasonal tourism, 3) social inequality, 4) urban planning issues, such as irregular housing, sanitation, floods, 5) mega projects related to the oil industry and 6) high vulnerability to the risks and effects of global environmental changes such as climate change and the possibility of increasing the sea level.

São Sebastiao is a typical city of this region with a great industrial and touristic importance. Beyond the port, that has a historic importance as one of the main hubs for petroleum and other products, there are the Transpetro (Petrobrás Transportation S.A.) and the Almirante Barroso Terminal (TEBAR), another Petrobrás enterprise. Those enterprises are surrounded by colonial towns and conservation units, which makes this region an important touristic area as well. The industrial, tourism and service sectors have generated great expectations, attracting to the region a significant population group in search of new jobs and better living conditions. Thus, this context is complex and intensifies the social conflicts and the local groups worries with the environmental, social and economic issues. Thereby, this article demonstrates that this context offers an opportunity to the Environmental Sociology, because highlights the relations among environmental and social issues, increasingly complex and present in contemporary society.

The peculiarities of the reality of Northern coast of Sao Paulo can be noticed in the figures below. The Figure 3 shows the biodiversity of this region from Atlantic Forest to marine areas, such as the Alcatrazes archipelago, 45 km from the Southeast coast of Sao Sebastiao. Figure 4 shows the number of tourists attracted by the beaches in the city during the summer season. Figure 5 presents some urban planning issues, such as floods and irregular habitations in risky and slipping areas (not only substandard houses, but luxurious ones too). Finally, Figure 6 shows some of the mega projects installed in the cities of this region, as TEBAR, the Gas Treatment Unit of Caraguatatuba (UTGCA) and the port.

**Figure 3: Biodiversity in Northern Coast of Sao Paulo**



Sources: 1 and 3) Parque Estadual da Serra do Mar (Sistema Ambiental Paulista, accessed on: 05/08/2014); 2) Alcatrazes archipelago (Teixeira, 2010); 4) Overview of the Northern coast of Sao Paulo (Teixeira, 2010).

**Figure 4: Seasonal Tourism in Sao Sebastiao**



Sources: 1) Maresias Beach (Celso Moraes, Prefeitura de São Sebastião, accessed on 05/08/2014); 2) Juquehy beach (SAMJU, accessed on 05/08/2014); 3) Baleia beach (TV Ancoradouro, accessed on 05/08/2014); 4) Maresias beach (Costa Norte, accessed on 05/08/2014).

**Figure 5: Main urban planning issues in cities of Northern Coast of São Paulo**



Sources: 1, 2 e 3) Disorganized occupations in irregular and risky áreas (Federação Pró Costa Atlântica, 2011); 4) 2013 flood in Sao Sebastiao (Ricardo Faustino, Prefeitura de São Sebastião, accessed on: 05/12/2014).

**Figure 6: Mega project in Northern Coast of São Paulo**



Sources: 1) Gas Treatment Unit of Caraguatatuba (Petrobrás, 2010), 2) Terminal Almirante Barroso (TEBAR) (Santos, 2011), 3) TEBAR, port and the São Sebastião and Ilhabela canal (Portogente, 2009), 4) Port of Sao Sebastiao (CPEA, 2009).

## **2.1. Presentation of the environmental licensing process of the port of San Sebastian**

Inserted in this historic port expansion shall be considered an efficient logistic alternative for both: runoff and receiving of products of enterprises that are installed on the northern coast of São Paulo, but also throughout the Southeast, especially the Metropolitan areas of Paraíba Valley and the Region of Campinas (CPEA, 2009 and 2011). So, this project has attracted 2,5 bilions of reais (CPEA, 2009, 2011) from state and private initiatives.

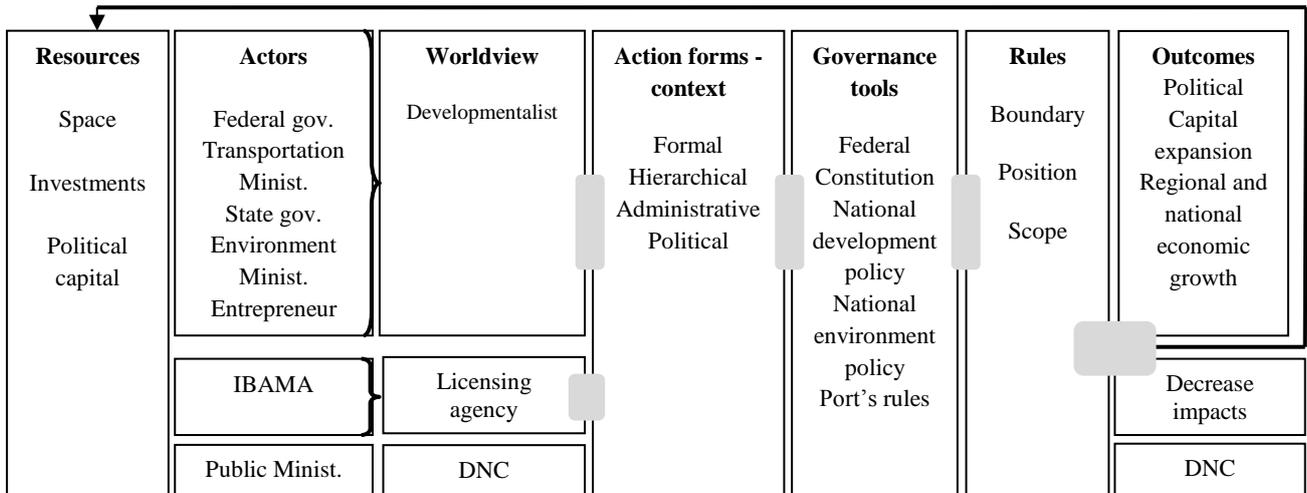
The port expansion project was initiated in 2009 with the licensing process, the environmental impact studies and the scheduling of public hearings in São Sebastião and Ilhabela for the first semester of 2010. The first proposed model aimed to ground the Mangrove Araça area and storage of the products in containers. This generated intense mobilization of local actors because of the ecological importance of mangroves in preserving the biodiversity of the region, as well as the interference of the containers in the landscape. So the environmental licensing and public hearings were suspended by IBAMA due to request of the State Department of Environment and the Department of Transportation. And IBAMA demanded from the entrepreneur new studies of environmental impacts and other alternatives that ensure the environmental viability of the project.

Therefore, this project was chosen as an object of analysis because it brings new and old environmental and social issues important to the social actors involved. This happens mainly because it is a peculiar environmental and economic context. It was from it that the different levels of decision-making arena related to expansion project of the port can be analyzed in its essential elements.

## **3. National Context**

As noted above, it is in this level that the national policy decisions about investments in infrastructure and transportations happen. However, its design (Figure 7) is more important to understand the context in which the other action situations are set up, without exploring deeply the negotiations and results of this level.

**Figure 7: IAD Framework of the national action situations that compose the decision arena about Sao Sebastiao's port expansion**



Source: author's elaboration, adapted from Ruiz-Ballesteros e Brondízio (2013). The seven components of an action situation are illustrated by the boxes articulated from left to right, so the actors are connected to the resources under negotiation and they are grouped by their worldviews, continuing the different elements of the process towards the outcomes. These results, whether or not achieved, will influence the resources in dispute and, consequently, all process. Although this is not a linear process, it acquires that appearance for illustrative/graphic propose.

Based on that, it was possible to start the understanding process of the different action situations levels. Here the main negotiated resources among the actors that compose this arena were identified and summarized in three main points: 1) space, 2) investments, and 3) political capital.

The space is a negotiated resource in this situation because the project pursues the port's extension in an area limited both by the marine, as the port in a waterway bounded by Ilhabela island and by the land and coastal area, because it tends to expand throughout the Araçá Mangrove area (an important ecosystem for the regional fauna and flora maintenance) and its backside area throughout the historical city center, where there is few space to urban growth.<sup>4</sup>

The investments are part of the negotiations in this action situation, because this is the moment to negotiate infrastructure policies and to define the financial amount to be directed to the project. This was also an issue that promoted a competition between the municipal

<sup>4</sup> In this central area, the land between the slope and the sea has 4 kilometers. This information was confirmed by the tourismologist and citizen of Sao Sebastiao interviewed in April 2013.

governments for the investments attraction in return for the megaprojects facilities in this region.

Finally, the political capital could be understood as an element that defines the influence of the project's implementation in the power and reputation of the actors. In addition, it could generate outcomes like electoral advantages and disadvantages, increasing or not their political reliability and legitimacy in a national context. For this reason, the actors that compose this action situation negotiate this resource in order not only to enable the enterprise according with their objectives, but also to collaborate to the improvement of their power (electoral, of decision-making, of influence, and others).

It is around these resources under negotiation that the social actors come together and position themselves according to their worldviews<sup>5</sup>. As actors authorized to participate in this action situation there were: federal government, transportation ministry, state government, environment ministry, and entrepreneur (CDSS). They share the same developmentalist vision, which main worries are fundamentally concentrated in national economic growth. Therefore, this analysis is consistent with Seixas and Renk (2010) and Ferreira (1993) that, analyzing similar contexts of economic and industrial growth in coast areas in São Paulo state, figured out a neodevelopmentalist trend of national economic policies<sup>6</sup>. For this group of actors the most expected outcome would be the political capital enlargement<sup>7</sup> through regional and national economic growth that the port's expansion would bring up. That is, they hope that with the project enabled, they could bring together the expected profits and benefits, and it could increase their political capital.

Two other actors from this action situations were the Public Ministry and the National Environmental Licensing Agency, IBAMA. Obviously the Public Ministry was present in this decision arena, but it was not possible to identify its participation with the data collected by interviews, news articles and public hearings videos. Being the licensing agency in this case, IBAMA's worldview tend to be not explicit, or it is confused with the function of this institution, which would be reconciling economic development with environmental

---

<sup>5</sup> The worldviews were well identified with the news article analyzed and also with the interviews with key-actors in April 2013.

<sup>6</sup> One can understand with this that, in the context of the implementation of large projects, the economic benefits still occupy a central position in the criteria for deployment, while environmental issues stay in second plan and are justified by the possibility of national development (Seixas and Renk 2010, p. 449).

<sup>7</sup> Often this electoral power and political legitimacy of these actors are much more expanded regionally and nationally than locally, since local actors tend to see the project and its implications less cyclical than others, focusing more on the direct impacts that happen in their lives.

preservation and conservation, establishing regulations to be met by other actors involved in order to minimize the social-environmental impacts of these megaprojects.

The interaction among these actors basically happens in a formal context, with hierarchical relations, because they are institutions that are situated in different and interdependent jurisdiction level, as pointed by Cash et al. (2006) in their institutional analysis among levels and scales of environmental management agencies. Therefore, the actors of this action situation have different political-administrative tasks at this process: one institution is responsible for the decision-making about environmental viability, other is responsible for the project suggestion, other for the financial plan and another one for legislation. But all of them act through governance tools (regulations, legislations, management plans, and others). Along with the rule crafting process, these tools will direct the port's environmental enabling process at the further levels of interaction and decisions (Figure 5). That is, the rules in this action level define, according to the Environmental National Policies (PNMA), for example, which are the actors capable to participate in the decision-making process, which role each one will play to achieve certain results. Table 2 summarizes the set of laws that circumscribe the situation of subsequent action, the environmental licensing.

**Table 2: Set of relevant laws to environmental licensing**

<b>Laws</b>	<b>General goals</b>	<b>Rules influenced by these laws</b>
Federal constitution 1988	Ensures the exercise of social and individual, freedom and equality of rights.	With different goals, the constitution influences every kind of rules, defining the participation right, with equality and freedom of expression .
Law 6.938/81 – PNMA	Defines in advance the installation, expansion and operation of enterprises considered as potential generators of environmental degradation.	<b>Boundary:</b> specify the limits and physical dimensions of the enterprise. <b>Scope:</b> define the potential outcomes, specifying the acceptable levels of impacts.
Resolution CONAMA n°01/86	Establishes responsibilities, basic criteria and general directions to Environmental Impact Assessment, defining what is considered as an environmental impact.	<b>Position:</b> specify the responsible for the environmental impacts assessments and their tasks.
Resolution CONAMA n°237/97	Defines the goals of the environmental licensing process, the environmental impacts assessment, as well as the responsible to achieve these goals.	<b>Scope:</b> specify the environmental management goals and tools. <b>Position:</b> specify the responsible to achieve these goals. <b>Choice:</b> specify the procedures and directions that should be followed.

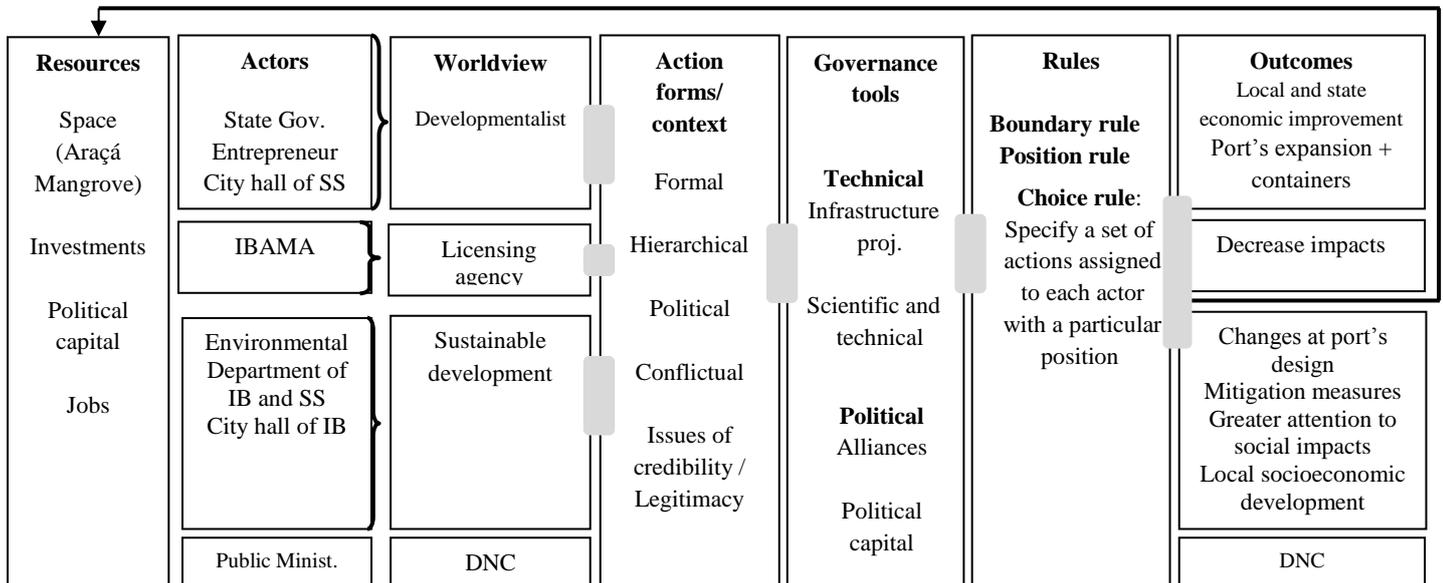
Normative statement n°184/2008 IBAMA	Establishes the procedures and responsible to do the environmental licensing process, defining its steps: process, previous licensing, installation licensing and operation licensing.	<b>Choice:</b> specify the set of actions and its tasks that should be followed during the licensing process.
Law N° 8.630/93 – Ports’ Law	Assigns responsibilities to CDSS as the entrepreneurs and define the jurisdiction of the exploitation of ports and their activities.	<b>Position:</b> assigns to the entrepreneur the responsibilities of the port exploitation.

Source: Author’s elaboration from the IBAMA’s material showed at the public hearings in Ilhabela (2012), IBAMA (2008), CONAMA (1997,1986), Brasil (1988), and PNMA (1981).

#### 4. The state context: licensing process

This part will discuss the interactions of action situations at state context, the level where the environmental licensing process happened (Figure 8) and its relations with the local level and the public hearing. According to Ostrom (2005), explanations of a contemporary dilemma occur at multiple levels and different scales of time and space. So, to understand these dilemmas, the IAD framework was an interesting tool, because its main task is to help the exploration of one particular question. The IAD framework was used to identify and characterize action arenas on national, state and local level, as well as their inter-relations. This tool enables us to analyze the conflicts that emerge from the decision-making process about the extension of São Sebastiao port between the local and state levels, where the resources and discourses that are mobilized by the actors become visible. That is because the local and state levels deal straight with the relation between the enterprise and those individuals that consider themselves affected by it immediately.

**Figure 8: IAD framework of state level action situations which composes the decision-making process of the environmental licensing about the expansion of São Sebastiao's Port**



Source: author's elaboration, adapted from Ruiz-Ballesteros e Brondízio (2013).

As the national action situations, here the main resources which are in dispute among the actors are: the direction of investments, political capital and the different ways of space occupation, highlighting the Araçá Mangrove. At a first moment, the entrepreneur intended to expand the port's area over the mangrove region by grounding it. However, after a strong civil society mobilization, mainly of environmentalist NGOs, some changes about the initial project and the way that this area should be occupied were suggested. This can show us the influence of the local level at the licensing process. As a result, it was adopted an alternative in which the port would be expanded upon stilts, in a way that would not eliminate directly the mangrove ecosystem. Despite intense controversy and conflict, this was the chosen alternative to be licensed.

Other resource that was negotiated at this action level was the rules about labor hiring and supply to the installation and operation steps of the extended port. The local actors demanded a hiring prioritization of local workers, from the cities of the North coast of São Paulo, in order to fill the most part of the jobs, and if it necessary, they should hire only experts from other regions. This suggestion was accepted by the entrepreneur, who claimed

to give preference to local labor as much as possible. Some of the actors understood this as a potential positive impact of the project, with the increase of labor supply that could improve the life conditions of those local residents. But, on the other side, other actors faced this agreement as a worry point, due to the lack of specialized education in the region and also due to the generation of expectations, this could attract a new population contingent that would be searching for new jobs and residence at the coastal cities. This situation would contribute to the competition among the local workers and intensify the pressure on local infrastructure services, considered pretty fragile by them.

The issues concerning the impact of the expansion of the port at Araça Mangrove and in the quality and lifestyle of the regional citizens may have been the key elements discussed in this level of action situation and it clarified the positions of the different actors involved in decision-making on development. This enabled us to group the actor according to their worldviews and different interests. The first group, composed by the state government, Sao Sebastiao's municipal government and the entrepreneur, has its interests guided by a developmentalist worldview, as described above. That is, they are actors who somehow give more attention to the economic dimension than to the environmental and social dimensions of the development. For that group, the main outcomes are the local and regional economic growth based on the expansion of Sao Sebastiao's port and on the economic benefits that this project will potentially generate.

The second group, composed basically by the Ilhabela city hall and Ilhabela's and Sao Sebastiao's environmental departments, is the group whose worldview was called "sustainable development", that is, for them it is worth the effort to equalize these three dimensions (economic, social and environmental) during the project assessments and implementation in order to achieve a project with impacts and benefits more reliable to the local touristic reality. The expected outcomes for this group focus on the suggestions to change the port's design, on negotiation of mitigation acts. They give a greater attention to the social impacts and perceive the local socioeconomic development as a priority, as the negatives impacts of the project are discussed and defined at this level.

Therefore, grouping these actors according to their worldviews and goals, in spite of seeming simplistic or generalist, it is a useful way to visualize how these actors position themselves in face to the port expansion issues. Even though being in a conflict of interests,

these actors interact among them, with strategies and resources that differentiate them in the power to influence the results.

The governance tools were divided in technical and political tools to allow a more detailed analysis. At the technical level of the environmental licensing process are defined the guidelines and technical procedures of studies and reports, which will mark out the discussions on the physical and technical dimensions, directly related to the expansion of the port. At the political level alliances and political capital are used more than the technical and physical elements by all actors to influence the decision-making process about the project. It means that the actors exploit the association with the others and also with the experts, in order to broaden their capacities to influence the process. One example was the case of the entrepreneur, which had its actions allied to the Sao Paulo state government ones in order to broaden its support and to justify the project feasibility. Just as the Environmental Department of Sao Sebastiao was based on studies from renowned research institutions, as CEBIMar (USP) to combat and suggest some alternatives.

The negotiated rules<sup>8</sup> at the state level specify: 1) the actors that will participate during the decision-making process about the environmental feasibility of the project, 2) the positions, roles and functions of each participant during the process; 3) the set of actions that is assigned to each position, and what they may, must or must not do to achieve their goals. So, these are rules that specify the procedures to be followed at state and local action situations. For example, the guidelines specified at the environmental impacts studies and reports are followed by the actors at the licensing and public hearings in order to enlarge their capacities to influence the outcomes of these levels of actions. The failure of any item of these studies and reports can damage the assessment on the environmental viability of the project and thus its adoption. A second example is about the position definition: there are specified tasks and responsibilities of the licensing agency and of the CDSS as entrepreneur as well.

In what regards the context of these actions, the interaction among the actors at this action level occur in a formal way too, with hierarchical and political relations among them, mainly because it involves political institutions of different action levels, like state government, city halls and municipal environmental departments. However, beyond that, it was possible to realize that the environmental licensing process of the port brings together

---

<sup>8</sup> Once again, using an adaptation of the Ostrom (2011) and McGinnis (2011) definitions.

multiple actors with different interests and interpretations about the potential outcomes and goals. These actors may not have interacted if not for the suggestion of the project.

Therefore, conflicts arise among actors because of their different worldviews and goals of what should be done in the region. Thus, beyond being formal, hierarchical and political as in the level above, the context at this action situation can be seen as a context of conflict of interests. But the theoretical perspective adopted here does not face these conflicts as something pathological or negative, instead they are seen as an opportunity to interact, learn and to recognize different positions (Ferreira, 2004; Ferreira, 2011). This is because the conflict as a sociability element (Simmel, 1983) and as recognition act is an opportunity that, despite the differences, creates relations, negotiation, dialogue and cooperation among individuals.

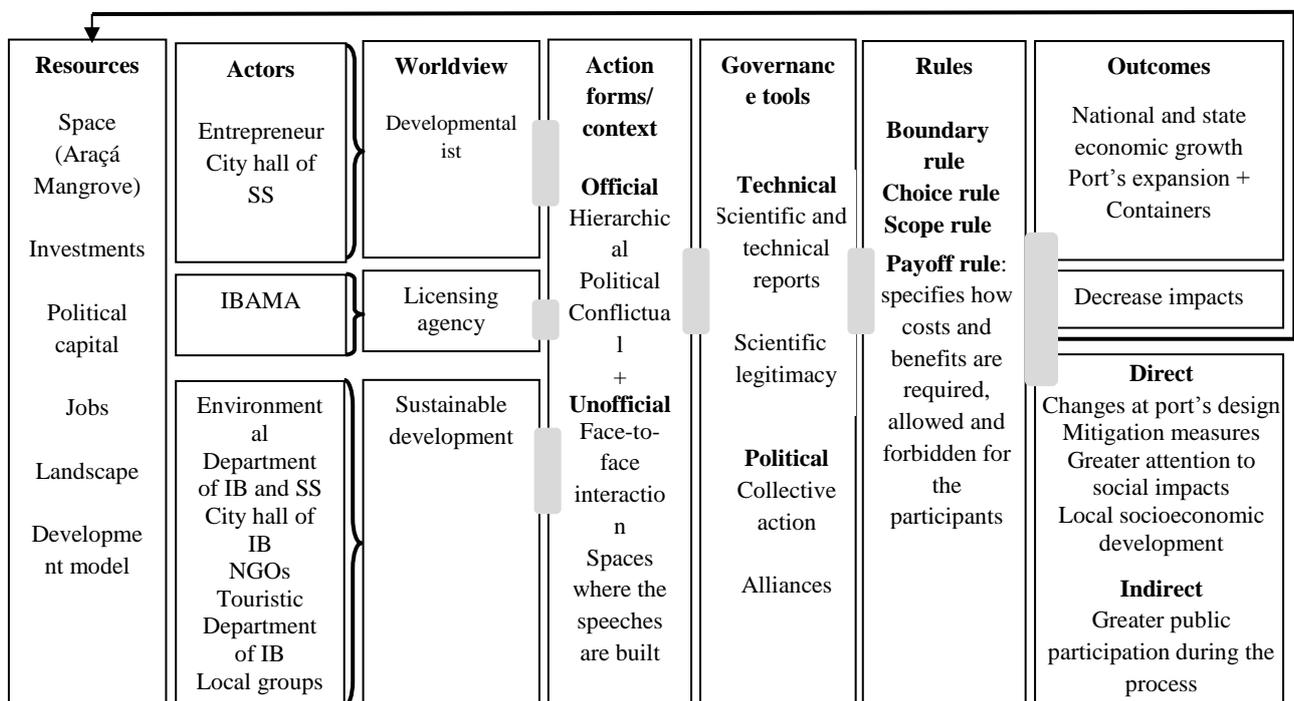
## **5. The local context: public hearings**

The main goals of this article can be better discussed from the interactions that happened at the local action situations and among this and the other levels. It is because at this level the conflicts from the decision-making process and their essential components become more visible, inasmuch as the spheres of licensing and local actions deal more directly with the enterprise and individuals directly affected by them. Here it is possible to realize how the construction of the licensing process is connected with the local dynamics, where the effects, impacts and mitigations of the project are discussed and negotiated on public hearings. It is at this level where the interaction among actors who would not have the opportunity to be in contact with each other if there was no the project and its decision-making arena becomes possible.

To illustrate this action situation's level, the public hearings (a mandatory element of the environmental licensing process) were chosen. This choice was done precisely because the public hearings are an important step of the enterprise's decision-making process. It is the stage that different social actors act in order to influence the licensing process and the approval of the project. Furthermore, it is at this stage that the environmental impacts studies and assessments (a mandatory element of the process as well) are presented to any individual interested on the project development. So it is the moment that the scientific knowledge has a central role during the debate and negotiations. This knowledge is present in the speech of all

groups, but always through interactions with other speeches: political, ideological, cultural, economic, normative and bureaucratic. And it is precisely because of this potential to explore the questions suggested that this action situation (Figure 9) compose the focus of this analysis.

**Figure 9: IAD framework of local level action situations focusing on public hearings of the environmental licensing about the expansion of São Sebastiao’s Port**



Source: author’s elaboration, adapted from Ruiz-Ballesteros e Brondízio (2013).

Once more, resources such as land use, investments, political capital, and job offer are disputed and negotiated among the actors in this action situation. However, here there were also raised elements with direct interference into the locations of the port facilities, locations that are immediately and in the long-term affected by the enterprise. An example of this were the elements which interfere with the region’s landscape, especially regarding the change and interference in the historic center of Sao Sebastiao and Ilhabela central districts due to the storage of containers proposed by this suggested model of port expansion. This would be a problem that, according to the vision of local groups and environmental NGOs, could affect tourism in the region.

Another strong element in this action situation refers to the economic and social development model that had been suggested to this region by the city halls and federal and state governments. And once again the difference between the worldviews that polarized the participants was visible. The actors grouped in what was termed the "developmentalist" vision prioritized regional and national economic growth. They do not always value the social, environmental and economic dimension from the demands of some local groups who are affected differentially by the project. On the other hand, actors grouped into "sustainable development" prioritized the achievement of local demands about infrastructure, services and impacts mitigations actions, considering the national economic development as a secondary concern.

The interactions at the local level happened in official and unofficial way. As an example, the face-to-face interactions in dialogue committees were spaces where those actors' groups built their position and speeches to be presented in spaces of official interactions, such as public hearings. At public hearings, the interactions were more hierarchical, because there were differences of positions and power among those who made up the board of directors and the other participants. For this reason, some conflicts between the actors became visible, transforming the public hearing on the largest representative stage where they put in (inter) action multiple agents with divergent interests and interpretations.

To achieve their goals, the participants at local level have also mobilized tools that were again divided into two categories: technical and political. These tools must be in accordance with the guidelines and procedures that were set in the state action situation. This is what McGinnis (2011) called "nested situations", an action situation that has some element (governance tools, rules, outcomes) that influences the next level of action situation.

Similarly, it was noted that the rule crafting process at this local level situation negotiated substantive points, which were directly related to the works of the port and its impact on the locations. But political-normative points were also negotiated and discussed. Those points related to the participatory process, its structure, organization and had no immediate connections with the enterprise facilities.

## 6. The relations among levels

After teasing out the action situations in their essential elements, it becomes easier to see the relations of direct influence that exist in situations of nested action, where the rules and the results of a negotiation interfere and generate conditions for structuring the next action situations, from a broader level to the most local level. With this it was possible to investigate the possibility of feedback relations, questioning how the discussions about the rules and the results of each action situation could influence other levels.

In order to identify possible feedback relations, Table 3 summarizes the rules found in the decision making process about the extension of the Sao Sebastiao's Port, identified at the level of the situation of local action, and how they influenced the organization and dynamics of this arena. The discussions at the local level of the process have led to the elaboration of rules defining the participants in this arena, their responsibilities, the procedures and guidelines that their actions could follow as part of the negotiation of the physical and technical limits of the development process, its dimensions, its impacts, its mitigation and their costs and benefits.

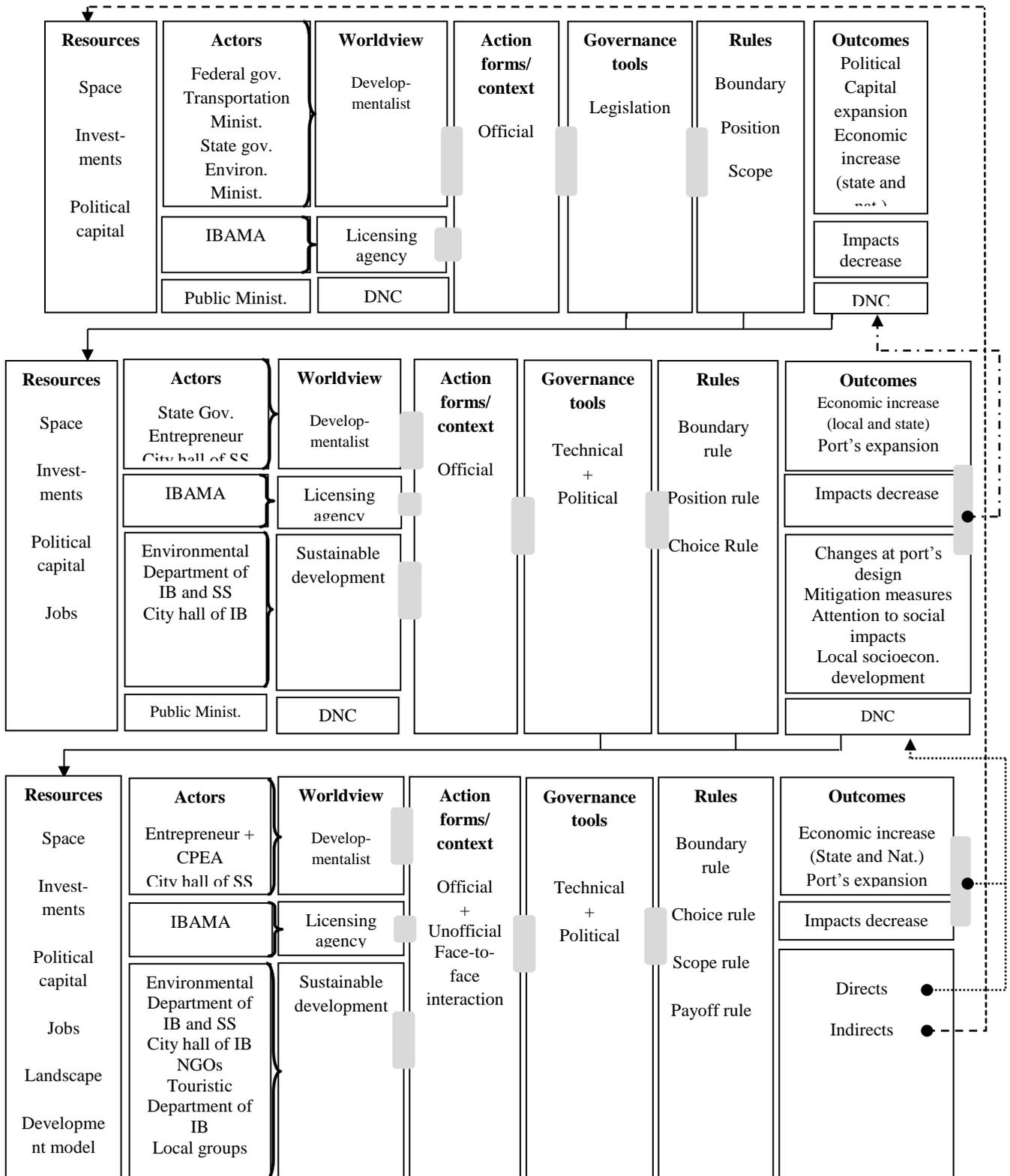
**Table 3: Systematization of the rules of the local action situation which makes up the decision-making process on the expansion of Sao Sebastiao's Port**

Name	Definition and Questions
Boundary rules (project)	There were discussed during the environmental licensing process what are the dimensions and the extent of the expansion of the port, if it would occupy the Araça mangrove, how this occupation would be and who could use the port area to pursue their economic activity (fishing, shellfish collectors, tourism sector, port employees, businesses, etc.).
Payoff rules	Many times questions were raised concerning what were the benefits and harms of this enterprise, what were the risks, consequences for landscape and biodiversity, the consequences for the tourism activity and who would come out "winning" or "losing" after the installation of the enterprise. Thus, this set of rules negotiates the costs and benefits of the project and to whom they are directed.
Position rules	This set of rules answers questions about what is the role of each actor in the decision making process, especially those with some institutional representation (IBAMA, CDSS, CPEA). Thus some issues were raised such as: Who are the decision makers, who will manage the consequences of the project, as well as who monitors the sanctions to the violated rules in the process.
Boundary rules (process)	Here were raised questions about the limits of the enterprise decision making process, in order to specify which are the actors that may or may not participate in the different levels of negotiations, who can participate in the public hearings, in the board of directors, who make up the public hearings, with what resources actors can develop their strategies and if there are consequences / penalties for an actor to enter or to leave the process.

Choice rules	Procedures and guidelines (to be adopted by each actor with an specific position) were discussed concerning the development of installation works and studies of environmental impacts, as well as regulations and procedures to be followed in participatory decision-making, followed by those who had an interest to participate. Thus, when questions about the structure of the public hearing and licensing process were raised, the actors were willing to negotiate this set of rules.
Scope rules	These rules answer questions about the extent of the expected results, technically and directly related to the enterprise, for example, questions about the physical dimensions of the port, its impacts and acceptable risks. But there were brought to the discussion some points less directly related to the physical and technical aspects of the projects, but more related to the decision-making process, about the scope of the participatory process and the actions that could be made to achieve the expected results from this process.

The shaded rows are the rules that negotiated the substantive points, which will specify the outcomes more directly related to the enterprise. The other rows are the rules related to political-normative points, which specify the indirect outcomes about the participatory process and its organization. By identifying these rules and how they define the potential outcomes of this sphere of activity, it was revealed that their influences on different aspects interfere with other levels of situation regarding feedback, as shown in Figure 10.

**Figure 10: Interference relations among the action situations that make up the decision-making arena of Sao Sebastiao's Port**



Source: author's elaboration, adapted from Ruiz-Ballesteros e Brondizio (2013).

The solid arrows illustrate the direct interferences from a broader action situation level to the next level. These are elements that end up designing and defining the guidelines of the next action situation. An example of this is that the environmental licensing process has to be in accordance with the rules and governance tools that were defined at the national level, such as Federal Constitution, Environmental National Policy and the Ports Laws. It is based on these elements and from the outcomes of the national action situation that the environmental licensing process will align its interaction, goals and means to achieve them.

The same happens from the state level to the local: the public hearings and the tools and reports presented and used in those meetings have to be in accordance to the rules, procedures and tasks specified at the broader levels. An example of this is the fulfillment of the items of the Reference Term, the studies and reports of environmental impacts, and the roles and responsibilities that each stakeholder, endowed with a position, will have in the process.

Meanwhile, the dashed lines indicate the feedback relations between the situations of action that compose the decision-making process of the enterprise. It was possible to realize that the outcomes from the local action situation were divided into direct (technical) and indirect (political). That is, on the one hand there are those outcomes relating directly to the work of the project, its impacts and mitigation, and on the other hand, those regarding the structure of the decision process, public hearings, and public participation in this process - its efficiency and legitimacy. Thus, these outcomes had different interferences on the other levels of action: discussions about more direct and technical points of the project help somehow to define the outcomes of the environmental licensing process – the situation in which, by definition, exclusively technical and immediate issues referring to the enterprise are negotiated. The interview with the official IBAMA (July 2013), corroborates this assertion. According to her, who works with compensatory measures of megaenterprises, it is noticeable that a bunch of mitigatory actions come from the local social demands and from the social participation in the decision making process.

The discussions on the participatory political process does not interfere with the environmental licensing level, because this does not have the function of defining participatory politics, but only the guidelines and technical procedures of the project - location, installation, expansion, operation, levels of risks and impacts, among other factors. Thus, the influences of the outcomes of the discussions about the political-normative points

of the participatory process are directed to the national action situation level. Only at this level, at some point, it can be taken into consideration the points raised in the public hearings in order to transform their tools of governance, proposing changes in the organization of the participatory process – such as the notes on the logistics made by local groups in the public hearing, the critics about its efficiency and participation and the suggestions of other moments of debates with local actors and policymakers. If these notes are taken into account, they would serve as direct interference in environmental licensing in a future decision-making process, as governance tools and / or new rules.

The feedback of the results of the licensing sphere tends to generate interferences in the results achieved in the situation of national action. If the environmental licensing approves the viability of the project with certain conditions and proposed mitigating measures, for example, it tends to influence what will be achieved politically and economically for national actors - as the federal government, IBAMA, the state government of São Paulo, among others - who may increase (or decrease) their political capital, its credibility and legitimacy at the national level.

Therefore, the related environmental viability of Sao Sebastiao's Port decision-making process has technical components, less politically influenced, which focus primarily on the level of action situation called state. It is at this level guidelines and procedures for environmental licensing and its management tools where are drawn up. At national and local levels there can be observed more clearly the political, ideological and cultural components, with discussions that were beyond the immediate causes of the expansion of the port, such as those who proposed a discussion about the organization of hearings and other instruments of public participation before making a decision. Then, that would be the bridge that would connect the two ends of action situations contained in the decision arena.

It was possible to realize that technical and political components were traded throughout the decision process on the environmental implications of the project. But these components appeared often disconnected, ie, some sets of actors were limited to discussion and negotiation of the technical component only, while the other actors were suggesting structural discussions of political and normative components of the process. This happened due to a lack of congruence between the role of environmental licensing and public hearing. For local groups, it is expected that the licensing process offers space to discuss technical and

political aspects. However, the process has as definition the discussion of the technical and apolitical aspects of the project only.

This misunderstanding about the function of licensing as a tool for environmental management, as a space to discuss and decide both substantive components as normative components, contributes to a situation that does not value dialogue and transparency between the different actors, often leading to polarization and promoting what can be called "deaf talk".

## **7. Considerations**

In order to understand the different analysis levels that composes the decision-making arena studied it was essential to have a framework that could enable the identification of the arena's multiple levels and its main components. An adaptation of IAD framework was used as an organization tool of the empirical data collected, enabling us to map the developed analytical reasoning, and helping in the exposition and understanding of the studied case. Just like geographic maps, the IAD framework can be introduced in different levels, going from a very refined analysis to a widespread one (Hofstadter 1979 *apud* Ostrom, 2005), always considering both sides, the global and the local, essential and complementary between themselves (Ostrom, 2005). This way, this framework has helped us in the identification of the decision arena about the mega-project, decomposing it in the essential action situations, collaborating with the understanding of the studied reality.

The analysis of the data collected revealed a disagreement among the stakeholders about the role of environmental licensing and a consequently confusion regarding the expectations in relation to this management tool and public hearings. While one group focused their efforts on decisions about the technical elements of the project and was able to influence the decisions of the process, other actors also had as focus more political and normative questions that were not answered by this management tool.

The data analysis showed that this has generated frustration, which reflected in the interaction and dialogue, discouraging the actors in the public hearings and discrediting decision making for these actors. The interview with an IBAMA employee (July 2013) corroborated this statement. She highlighted the confusion over the roles that IBAMA has on the licensing process, and said that several demands of civil society and the entrepreneur,

which would be forwarded to the State, fall on the licensing and are forwarded to IBAMA, which may not always meet all of them because, according to her, these demands are the result of conflicting interests.

This misunderstanding happens because even though the scope of public hearings is to discuss and define technical aspects of the project, there is a widespread belief among participating social groups that the public hearing is also a space for their political demands, to develop rules that are able to define and transform the participatory process. This potential disconnect, combined with the organizational elements of the process (limiting dialogue and exchange between the actors from different levels) fuels a lack of trust between them and discourages public participation of local actors.

### References cited

Aidar, M. P. M.; Godoy, J.R.L.; Bergman, N. J. ; Joly, C. A.

2011 Atlantic Forest succession over calcareous soil, Parque Estadual Turístico do Alto do Ribeira – PETAR, SP. **Revista Brasileira de Botânica** 24, 4: 455-469.

Brasil

1988 **Constituição da República Federativa do Brasil**. Brasília, DF: Senado; 1988.

1981 Lei nº 6938/81, de 31 de agosto de 1981. **Política Nacional do Meio Ambiente**. Brasília, DF: Senado.

Cash, D. W., W. Adger, F. Berkes, P. Garden, L. Lebel, P. Olsson, L. Pritchard, and O. Young.

2006 Scale and cross-scale dynamics: governance and information in a multilevel world. **Ecology and Society**. 11(2): 8. [online] Available in: <http://www.ecologyandsociety.org/vol11/iss2/art8/> - Accessed on: 10/03/2014.

Celso Moraes (Prefeitura de São Sebastião).

**Maresias: Concorrida e badalada na alta temporada**. Available in:

<http://www.feriasbrasil.com.br/sp/saosebastiao/> - Accessed on: /05/082014.

CONAMA - Conselho Nacional do Meio Ambiente.

1986 Resolução Conama nº 001. Available in: < <http://www.mma.gov.br/port/conama/res/res86/res0186.html> > Accessed on: 2/10/2013.

1997 Resolução Conama nº 237. Available in:

< <http://www.mma.gov.br/port/conama/res/res97/res23797.html>> Accessed on: 2/10/2013.

CPEA - Consultoria, Planejamento e Estudos Ambientais.

2011 **Plano de Integrado Porto Cidade**. Relatório de Impacto Ambiental. São Paulo.

2009 **Plano de Integrado Porto Cidade**. Relatório de Impacto Ambiental. São Paulo,

Faustino, R.

Prefeitura de São Sebastião. Foto de Ricardo Faustino: **Enchente no bairro Cambury em São Sebastião**. Available in: <http://g1.globo.com/sp/vale-do-paraiba-regiao/noticia/2013/03/chuva-deixa-mais-de-300-desalojados-em-sao-sebastiao-no-litoral-norte.html> - Accessed on: 05/12/2014.

Federação Pró Costa Atlântica.

2011 **Pela manutenção da qualidade de vida: por uma cidade ambientalmente sustentável e socialmente justa**. São Sebastião.

Ferreira, L.

2012 A Equação Dinâmica entre Conflitos Sociais, Recursos Naturais e Desastres Ambientais: O Estado da Arte e uma Proposta Teórica. **VI Encontro Nacional da Anppas** 18 a 21 de setembro de 2012 Belém - PA – Brasil.

2004 Dimensões Humanas da Biodiversidade: mudanças sociais e conflitos em torno de áreas protegidas no Vale do Ribeira, SP, Brasil. In: **Ambiente e Sociedade**. Vol. VII, n.1 jan/jun. 2004.

1993 **Os fantasmas do Vale: qualidade ambiental e cidadania**. Editora da UNICAMP, Campinas.

Ferreira, Lúcia. (coord.); Joly, C.; Ferreira, Leila; Carmo, R.

July de 2011 a August de 2012 **Urban Growth, Vulnerability and Adaptation: Social and Ecological Dimensions of Climate Change on the Coast of São Paulo**. Research Project – FAPESP Program on Global Climate Change. Process 2008/58159-7.

IBAMA (Instituto Brasileiro Do Meio Ambiente E Dos Recursos Naturais Renováveis).

2008 **Instrução Normativa do IBAMA N° 184**. Available in: <<http://www.mprs.mp.br/ambiente/legislacao/id4979.htm>> Accessed on: 2/10/2013.

2010 **Licença de Operação IBAMA n°908/2010**. Available in: <<http://portodesaosebastiao.com.br/documenta/LICENCA-DE-OPERACAO-DE-DRAGAGEM.pdf>> Accessed on: 2/10/2013.

2010 **Licença de Instalação IBAMA n° 206/2011**.

McGinnis, M. D.

2011 An Introduction to IAD and the Language of the Ostrom Workshop: A Simple Guide to a Complex Framework. **The Policy Studies Journal**, Vol. 39, No. 1.

Ostrom, E.

2005 **Understanding Institutional Diversity**. Princeton: Princeton University Press.

2011 Background on the Institutional Analysis and Development Framework. **The Policy Studies Journal**, Vol. 39, No. 1.

Petrobrás.

Construção Da Unidade De Tratamento De Gás Monteiro Lobato. Available in: <http://memoria.petrobras.com.br/acervo/construcao-da-unidade-de-tratamento-de-gas-monteiro-lobato?item=16783#.U3DSrflDVqU> – Accessed on: 05/12/2014.

Portogente.

Camada pré-sal mudará rotina do Porto de São Sebastião. 2009. Available in: <http://portogente.com.br/noticias/portos-do-brasil/sao-sebastiao/camada-pre-sal-mudara-rotina-do-porto-de-sao-sebastiao-77527> - Accessed on: 05/12/2014.

Ruiz-Ballesteros, and Brondizio, E.

2013 Building Negotiated Agreement: The Emergence of Community-Based Tourism in Floreana (Galápagos Islands). In: **Human Organization**, Vol. 72, No. 4.

Seixas, S. ; Renk, M.

2010 Projetos do setor de Petróleo e Gás no Sudeste Brasileiro: algumas considerações sobre o desafio desenvolvimento x preservação ambiental. In: Herculano, Selene et al. (Org.). **Impactos Sociais, Ambientais e Urbanos das Atividades Petrolíferas: o caso de Macaé (RJ)**. 1ed.Niterói, Rio de Janeiro: PPGSD/UFF, v. 01, p. 55-65.

SAMJU, Associação Comunitária Amigos de Juquehy.

**Contingente de turistas no verão de São Sebastião**. Available on: <http://www.samju.com.br/site/contingente-de-turistas-no-verao-de-sao-sebastiao/> – Accessed on: 05/08/2014.

Santos, F.

2011 **Populações em situação de risco ambiental em São Sebastião, litoral norte de São Paulo**. Campinas, SP: [s. n.].

Simmel, G.

1983 **Conflict**. New York: The Free Press.

Sistema Ambiental Paulista.

**Sobre o Parque Serra do Mar Núcleo São Sebastião.** Available in:  
<http://www.ambiente.sp.gov.br/parque-serra-do-mar-nucleo-sao-sebastiao/sobre-o-parque/> – accessed on: 05/08/2014.

TV Ancoradouro.

**Volume da coleta de lixo oscila em São Sebastião.** Available in:  
<http://tvancoradouro.com.br/jornal/?p=4056> – accessed on: 05/08/2014.