Participatory integrated coastal management in island regions: a methodological proposal based on tourism

Gestão costeira integrada participativa em regiões insulares: uma proposta metodológica baseada no turismo

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ABSTRACT
This study is aimed to understand political decision-making processes in two islands: Ilha Grande in the state of Rio de Janeiro, Brazil and Ile d’Oléron in France. Our intention is to propose a participative coastal management model for insular regions. To elaborate management models, we believe it is necessary to make deep diagnosis relating scientific and local knowledge. Theoretically, concepts of interdisciplinarity and complexity need to be considered together with an embracing view, including socioenvironmental issues and social participation, present in public policies.

Keywords: participatory integrated coastal management, island regions, methodological proposal, tourism.

RESUMO
O objetivo deste estudo é compreender os processos de tomada de decisão política em duas ilhas: Ilha Grande, no Rio de Janeiro, Brasil e Ilha de Óléron, na França. A nossa intenção é propor um modelo de gestão costeira participativa para as regiões insulares. Para elaborar modelos de gestão, acreditamos que é necessário fazer um diagnóstico profundo a respeito do conhecimento científico e local. Teoricamente, conceitos de
interdisciplinaridade e complexidade precisam ser considerados em conjunto com uma visão abrangente, incluindo questões socioambientais e participação social, presente nas políticas públicas.

**Palavras-chave:** gestão costeira integrada participativa, regiões insulares, proposta metodológica, turismo.

1 INTRODUCTION

Environmental issues present a set of increasingly problematic and complex scenarios, due to the multiple industrial and economic activities, which exert pressures and negative effects on coastal areas. Island territories, due to their vulnerability, diversity and fragility of their ecosystems need special attention.

For most islands in the world, the oceans may be the only assets to be developed to add value to local production chains. Good environmental quality and local biodiversity are drivers of the tourism economy, for example.

However, it’s important to note that tourism can change territorial settings, affecting in a negative way the environmental qualities and local culture (CHUEIRI; FORTUNATO; SAUZEAU, 2021; PRADO, 2003; WUNDER, 2006). These are the cases of two islands: Ilha Grande, in the state of Rio de Janeiro, Brazil and Île d’Oléron, in the Nuvelle Aquitane region, France. Both islands are known worldwide for their natural beauty and have most of their terrestrial and marine territories included in Protected Areas. Primary economy of these regions is centered on tourism; however, in Île d’Oléron, there are also other economic activities, such as fishing, wine production and cognac manufacturing.

After three years of research on the two islands, between 2019 and 2022, as a result of the doctoral thesis entitled “Integrated coastal management and territorial dynamics in island tourist regions: Ilha Grande (Brazil) and Île d’Oléron (France)”, defended in September 2012, a complex issue emerged: the importance of social participation in public decision-making, to reduce socioeconomic, political and environmental conflicts, by prioritizing conscious tourism on island territories. This study is aimed to understand the political decision-making processes in the two islands and to propose a Participatory Integrated Coastal Management (PICM) model for island regions.
This article is divided as follows: section (i) research method, which brings together several techniques from the social area; section (ii) PICM in Ilha Grande (Brazil) and Île d’Oléron (France), reports the integrated coastal management (ICM) format, historical, environmental and tourism sector aspects; section (iii) construction of the participatory model for island regions, based on the social participation model and section (iv) results: Participatory model for island regions: a methodological proposal based on tourism, in which it interweaves the subjects of interdisciplinarity, complexity, social participation and ICM. Lastly, the concluding remarks section (v) includes some inquiries regarding the implications of implementing an efficient model for island tourist regions.

2 RESEARCH METHOD

To achieve the objective of this research, we opted for a qualitative and interdisciplinary methodological procedure, which prioritizes the inclusion of local knowledge and different social groups, working as a social policy instrument to assist environmental problems. Commonly employed in researches focused on ICM (BREMER; GLAVOVIC, 2013; DUTRA et al., 2015; LARSEN; ACEBES; BELEN, 2011).

The methodological procedure for this research follows four steps:

1) Theoretical framework on complexity (Morin, 2005) and social control concepts (BORDENAVE, 1983), and ICM, which emerges within the realm of science to propose systemic and interdisciplinary solutions, aiding in matters of socio-economic, environmental, and political conflicts. Recently, there has been an opening towards incorporating local knowledge and participation in political decision-making processes, within ICM plans (CICIN-SAIN; W.ROBERT, 1998; POLETTE, 2020; POLETTE; SILVA, 2003).

2) Semi-structured questionnaires were administered to local population, tourists, associations and public officials, responsible for environmental and touristic matters in the region. The choice of these groups is justified by the fact of them work in the direction towards obtaining answers from different points of view, prioritizing the inclusion of social groups, to understand in a broad and judicious way the complexity of the problem, for the development of the conceptual model of PICM for island regions.
The interviews lasted 30 minutes to 1 hour and were recorded and written, with the permission of the interviewees for further publication. There were 42 interviewees on Ilha Grande and 29 on Île d'Oléron, including local population, tourists, governmental and non-governmental organizations on both islands. Interviews had objective to analyze the understand the perception of socio-environmental conflicts, inclusion of participation of population in public decision-making and how tourism economy has changed the landscape. For this type of interview, experience in field work was taken into account. This resulted in the survey of social, political and environmental elements, which contributed to the discussion of data related to the interviews.

3) Use of method (Bordenave, 1983) for diagnosis of social control, with the objective to analyze political interface and social inclusion of local population. This resulted in the conceptual model of PICM for island regions.

2.1 PARTICIPATORY INTEGRATED COASTAL MANAGEMENT IN ILHA GRANDE (BRAZIL) AND ÎLE D'OLÉRON (FRANCE)

Islands are included in the concept of coastal zone and have a greater environmental vulnerability when compared to the mainland. This vulnerability is due to some environmental and socio-political reasons, among them: the rise in sea level and the negative effects of massive tourism and lack of inclusive policy, which can result in reduction of biodiversity and degradation of ecosystems. Type of administrative political system between State and local population is also relevant.

Both islands are national and international destination for massive number of tourists in different periods. Tourist attractions of both islands are not only based on natural beauties, they are also marked by important historical phases, which refer to a past rich in culture.

Ilha Grande is located on the southern coast of the state of Rio de Janeiro, in the municipality of Angra dos Reis (Figure 1), and is part of the Atlantic Rainforest biome and associated ecosystems: such as shoals, mangroves and rocky outcrops vegetation of streams, lagoons, rocky shores, beaches and coves (JOHNSSON; IKEMOTO, 2015). These are very significant for the survival of living beings and especially for the residents of the region. To access the island it is possible only by marine vessels.
Figure 1- Location of Ilha Grande

Author: Pedro A.S., 2021
Source: (INEA - INSTITUTO ESTADUAL DO AMBIENTE, 2021)

Île d’Oléron is located in the Southwest of France, belongs to the municipality of Merennes-Oléron, part of the department of Charente-Maritime and inserted in one of the 18 regions of France, Nouvelle-Aquitaine (Figure 2). This island has been connected to mainland by a 2.6 km bridge since 1966, with the car being the main means of transport on the island and a leisure boat from the city of La Rochelle to the island is offered only in summer.
Ilha Grande and Île d’Oléron feature diverse natural beauties and areas of environmental protection. Both have tourism as their main economy, which receives a significant flow of tourists in high season. Ilha Grande has 134 km² and 9,426 inhabitants and 113 beaches (Instituto Estadual do Ambiente - INEA) (INEA, 2011) and in 2018, received approximately 1,442,608 tourists¹. While Île d’Oléron has 175 km² with 22,324 inhabitants and received about 3,000,000 visitors in 2019.²

However, Île d’Oléron boasts other significant economies apart from tourism, unlike Ilha Grande, where nearly the entirety of the economy revolves around tourism. Composed of four types of significant economies: firstly, tourism, secondly, oyster cultivation, thirdly, wine production, and, finally, the fourth economy, fishing (OFFICE DE TURISME ILÊ D’OLÉRON MARENNES, 2020). This is due to the participatory public management model implemented on the island, which has a policy aimed at preserving local culture (CHUEIRI; FORTUNATO; SAUZEAU, 2021).

In Ilha Grande, the scenario is different, tourism has taken on great dimensions, as environmental laws have prohibited some of local community routine activities. This gradually led to reduction of traditional activities, such as fishing and agriculture,

combined with overfishing by trawlers, to give way to tourism economy (BEGOSSI, A.; LOPES, P. F., OLIVEIRA, L. E. C.; NAKANO, 2009; PRADO, 2006; WUNDER, 2006). According to (Prado, 2006) with the imposition of environmental protection laws, which favored only the protection and conservation of ecosystems and not the inclusion and well-being of the population, conflicting views and interests between the local population and the State emerged.

This stance on the part of the rulers, regarding lack of insertion of residents and regarding the changes in land occupation, caused the beginning of one of the most complex conflicts on the Island, which residents came to see the environmental agencies as enemies. Residents declare in interviews: “we are here before them; they have arrived and want to take away our way of life”. It was also possible to observe many infractions by the residents themselves in the issue of illegal constructions in prohibited areas. Ilha Grande is on the verge of a social and environmental collapse, with the loss of cultural values and the increase of inequality, poverty, violence and environmental degradation (CHUEIRI; FORTUNATO, 2021).

Allied to this, another pertinent problem was identified regarding the format of management administration of the territory of Ilha Grande, which is managed by different public agencies and follows different environmental and urban planning legislation, being federal, state and municipal, due to the different categories of Protected Areas (BRASIL, 2000).

This management format ends up making it difficult to administrate the island as a whole. In addition to being administered by different bodies from different instances, included Protected Areas, Ilha Grande belongs to the municipality of Angra dos Reis. This issue over the years has become a socio-political conflict, in which governments are in doubt which public agency is responsible for specific situations. In the interviews with residents, it was possible to identify that there is also a lack of knowledge and understanding on their part, in knowing which public instance is responsible for each specific subject within their respective zones.

In the case of the Île d’Oléron the territory has eight municipalities and each has their own city hall called Commune and, finally, the island has a general management council that represents the eight municipalities, called the Communauté de Communes.
This represents the wishes and desires of the population, as well as political decisions of the island. To this end, regular meetings and public hearings are organized, which are held with government departments. Population in general has representatives for all economic activities on the island and representatives of associations, in addition researchers to plan future actions to discuss any matter related to changes or improvements on the island. One of the results of these meetings was the formulation of the Plan de gestion du Parc naturel marin de l'estuaire de la Gironde et de la mer Pertuis 2018-2033, which involves all the Natural Parks of la Gironde (OFB, 2018); it also includes the objectives of NATURA 2000 for the Nature Reservelle de Moeze-Oléron (COMMUNAUTE DE COMMUNES DE L’ILE D’OLÉRON, 2017). Documents were also generated such as the Plan Global de Déplacements (COMMUNAUTE DE COMMUNE DE L’ILE D’OLÉRON, 2012), and others.

What most sharply differs the two islands is not only their administrative structure, but the interaction of the local population in participating in the delimitation of the use of areas, being it for the protection of culture, which maintains the "original" landscape, for the exploitation of tourism and to establish norms of uses and activities that can be developed. This is due to the decentralized management format at the municipal level.

As a result of these issues related to social participation of local population regarding determination of protected areas and their legislation, the ICM, within a complex view, allows a systematic understanding of different synergies of the coast, integrates land use conflicts into a public space management policy and regulates them through the application of laws, decrees and agreements, which mainly encompasses social issues. This concept, with social inclusion more in evidence, began to advance in the 1980s, with the United Nations Conference on Environment and Development, which stimulated reflection on the concept of coastal management. Several organizations, mainly Food and Agriculture Organization of the United Nations, forwarded concept papers on ICM to the secretariat of the United Nations Conference on Environment and Development as a collaboration for the preparatory process (CLARK, 1992).

Increasingly, analysts refer coastal management as insufficient to manage world's coasts, referring to it as ICM. Professionals in the field gradually began to use this
terminology when referring to management programs, which are increasingly comprehensive, both in design and implementation (CICIN-SAIN; W.ROBERT, 1998).

First, the ICM aims to overcome the fragmentation of management sectors and jurisdiction divisions between the different governmental levels related to land-water interface. “A key part of the ICM is the design of institutional processes to carry out this harmonization in a politically acceptable way” (CICIN-SAIN; W.ROBERT, 1998).

Perspective of (Polette et al., (XXXXX) coastal management was constituted to resolve conflicts along the coastal area, due to the various uses, to reduce impacts and put an end to the delimitation of the use of coastal resources. ICM's objective is physical planning and ordering of land use and coastal waters (MEDEIROS; MAIA; ARAÚJO, 2016; NICOLODI; ZAMBONI; BARROSO, 2009).

Thus, it is possible to affirm that ICM should be understood as a continuous and dynamic management, with which decisions are made involving all actors, for the sustainable use, development and protection of areas, including coastal and marine resources.

ICM becomes a central issue that aims to unite economic development by protecting and securing natural resources for future generations, including the well-being of the population. It aims to promote governmental and non-governmental actions to minimize the negative impacts and to include community in decision-making processes. However, for this to occur, local populations need instruments for analysis and to monitor intervention proposals. This is being proposed by the PICM model, developed during the period of preparation of the aforementioned doctoral thesis.

3 PATHWAYS FOR BUILDING THE PARTICIPATORY MODEL FOR ISLAND REGIONS

It is understood that to develop management models, an in-depth diagnosis is necessary, involving issues related to economy, environment and society, within their multiple negative impacts on society and environment, arising from most varied anthropic pressures. What made the work complex, (Morin, 2005) defines as:

There is complexity when different elements are inseparable, constitutive of the whole (such as the economic, the political, the sociological, the psychological, the affective, the mythological), and there is an interdependent, interactive
and inter-retroactive fabric between the object of knowledge and its context, the parts and the whole, the whole and the parts, the parts among themselves.

Complexity can be seen as a challenge, which stigmatizes the researcher to seek knowledge in various areas of science and leads us to build new contextualization of our object of study, in order to not only accumulate information but to intertwine it in a large network of knowledge.

Concepts of interdisciplinarity and complexity are in line with the authors’ definitions of ICM (Cicin-sain; W.Robert, 1998; Polette et al., [s.d.]), pointed out in this study, which notably, over the years, demonstrates the evolution of coastal management to ICM and the concern for a more comprehensive look, including social issues and a PICM in island regions, relating scientific knowledge to local knowledge.

Social participation is a theme that opens new reflective paths, being an essential component and an indispensable instrument to propose efficient management. Social participation is understood as part of the problem and part of the solution, being intrinsically intertwined with the management process.

In Brazil, this issue of social participation is very clear, when it is found in the Federal Constitution, that “all power emanates from the people, who exercise it through elected representatives or directly, under the terms of this Constitution” (BRASIL, 1988).

This participation can be exercised directly or indirectly, and the indirect is the form that we use most, through voting, the direct form would be through the councils, both deliberative and advisory. Advisory is the model in which people discuss and give opinions on the most varied subjects and the deliberative will resolve or determine the policies, through votes among the members of the board.

In addition, another direct way would be through participatory budgeting, which, for example, occurs in the state of Rio Grande do Sul, where the population can have an opinion on where to allocate the money, within their priorities. It is a way of reinforcing what the author (Bordenave, 1983), defends about financial transparency.

This participatory management format prioritizes the involvement of the population, given the progressive sectors, in which the population develops a better critical awareness of administrative political responsibility. Thus, it can contribute to the claim process, acquiring more and more power and space in society.
The author (Bordenave, 1983) suggests a model of social participation to different degrees, called “social control”, which argues that effective participation happens when everyone is involved and not just specific groups with economic power. Social control goes through different degrees, reaching the ideal, which would be self-management (Figure 3).

Following the model, the terms that the author Bordenave uses as "manager" (and/or administrators) refer to public institutions (the government). For the term “member”, it is understood as social participation and subordinates.

The model begins with the lowest level of social participation, when the manager pass information to the members regarding the decisions already taken. In the optional consultation, the government are granted the right, but not necessarily, to ask the members for suggestions or data to resolve any issue. In the mandatory consultation, the opinion of the subordinates is requested, being a mandatory process, but the final decision remains with the government. In the other stage, that of the preparation/recommendation, the members prepare proposals and present measures that the manager accept or reject, but always with a justification as to the position taken.

At a higher level, co-management occurs, in which the socials organizations share decisions with committees, councils or other collegiate bodies and also promote elections to vote on action plans.
In the delegation, there is greater autonomy on part of local population, when population chooses delegates to represent the collective. However, still with limits and only in self-management, subordinates determine their objectives, are no longer excluded and there are no more external authorities.

Bringing this model to the reality of the two islands, Ilha Grande currently moves to the lowest level, the information phase, which does not include local social participation. But for the Île d'Oléron, the level is higher, it is in co-management. This organizational format aims to include social participation, as a form of power on part of population to claim their rights.

In France since 1981, under the government of François Mitterrand, a financial subsidy was started for population to organize themselves into non-profit associations, this remains to this day. Associations, through a form, request financial aid for the State, in case of success, aid to the association is provided for one year and, if they want to renew for another year (and so on), a new form is sent to the city hall. To strengthen this movement in 2021, the State of France in agreement with the European Union launches the LIFE Programme³, which also consists of financially assisting the formation of associations.

These two events provide population with opportunity to participate more in public policy making. This movement started from above, within a more egalitarian and democratic line of thought. It is through the representativeness of associations and councils that public agencies can improve their management, as pointed out by the interviewee of the Parc naturel marin de l'Estuaire de la Gironde et de mer Pertuis.

This causes the reorganization and division of the responsibilities of the government, with insertion of civil society. In some cases, management councils and associations are seen as an important extension of public policy, which generates trust and exercise of citizenship by civil society, which corroborates to what the author (Bordenave, 1983) defends about the importance of social participation in political decisions. Importance of “broadening the voice” of local communities is affirmed and professional

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³LIFE is a financial instrument of the European Commission to support projects in the fields of environment and climate.
training of technical knowledge is necessary, to have representatives at the forefront who can dialogue with public institutions, taking into account local knowledge.

4 RESULT: PARTICIPATORY MODEL FOR ISLAND REGIONS: A METHODOLOGICAL PROPOSAL BASED ON TOURISM

The subjects of interdisciplinarity, complexity and social participation were presented as important issues, which interact with each other, showing ways for a PICM in island regions. This path first strengthens local belonging, in which territorial construction is also the responsibility of the population, and the importance of residents to deliberate autonomously on political decisions, decentralizing state power.

This model meets the concepts of interdisciplinarity and complexity. Indicators (environmental perception, environmental history, environmental pollution, insular administrative management, coastal zone tourism and coastal pollution) pointed out in the model are themes that have been converging among themselves since the beginning of this research and corroborate with the idea of (Morin, 2005), regarding the concept of complexity.

This concept brings the reader to reflection for a thought in a large network, of wires that intertwine and connect their components to reach a “point”. This point is represented by the central part of the model, which contains the ICM theme for island regions.

This model was designed with the aim of providing methodological contribution to the field of research in tourism within coastal zones. It offers a kind of systematic summary of work conducted during the research, that led to the creation of the doctoral thesis in addition to this objective, the model primarily entails assisting ICM for managers, by incorporating local population and enabling residents to monitor and evaluate the management.

The model is composed of six indicators: Environmental perception - being an approach that assists in the resolution of institutionalized conflicts and their political objectives (SALAZAR; ALPER, 1996). Also important in the process of sustainable tourism development, taking into account the protection of ecosystems (QIAN et al., 2016); Environmental history, based on analysis of historical facts, helps to understand
different responses to challenges within the political environmental context (MARQUES, 2023). This leads to a deeper comprehension of environmental perception through narratives derived from individual experiences; Coastal pollution - falls under the realm of control and analysis of water and sewage quality, along with the infrastructure needed to address waste demands. This is vital to prevent the pollution of bathing waters due to the combined effects of population growth and tourism to prevent contamination of bathing waters (BURAK; DOĞAN; GAZIOĞLU, 2004); Island coastal management - is crucial to identify regulatory frameworks and their effectiveness in implementation, with a primary focus on social participation, also known as governance. According to Lane (2006) governance plays a pivotal role in coastal areas due to their diverse and varied environments; Environment policy – This is an important indicator since it includes policies aimed at preserving coastal ecosystems and local culture. Including the population in decision-making Chueiri (2011) and the last indicator: Tourism in coastal zones- primarily pertains to the study of carrying capacity, a fundamental factor for sustainable tourism (BENI, 2004; WUNDER, 2006). It can define limits of use such as protected areas, ecological zoning, among other models of environmental management in coastal zones (BURSZTYN; BURSZTYN, 2012).

Each indicator has three sub-indicators, these represent the levels of development with numbering (1,2,3). The management model becomes efficient as it approaches the center reaching the number 18, which means the fulfillment of all sub-indicators approaching the center of the model, reaching a management close to the ideal.

The development levels will assist the manager in diagnosing their current management in a systematic way, so that they can promote actions and make a critical analysis of the current situation of their management. The use of the model will allow local population to better understand ICM and use it as a basis for monitoring actions and charging the government. The model also contributes to the evaluation of the actions carried out by the population in conjunction with the government. Below is figure 4, with the indicators and their respective sub-indicators.
Figure 4 - Participatory integrated coastal management model for island regions.

5 CONCLUSION

The PICM model for island regions was elaborated based on questions and issues that emerged in the research trajectory, including mainly answers to the interviews and direct observation. This brings conceptual reflections, demonstrating the importance of interdisciplinary research, to propose possible socio-environmental and political solutions in island tourist regions.

One of the premises for this model to be efficient is the inclusion and acceptance of social participation by public entities in political decision-making, as well as the population's perception of the importance of organizing in associations and fighting for their rights. Without this, it will not be possible to move towards participatory management, which aims at social well-being in the first place, with emphasis on Ilha Grande. It was also clear that, for the conscious and proper application of regulatory frameworks to occur, it is necessary to analyze and measure social control.

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