Fishers' Participation in Coastal Fisheries Co-management: The Case of the Community of Trindade, in Southeastern Coast of Brazil

La Participación de los Pescadores en la Cogestión de la Pesca Costera: El Caso de la Comunidad de Trindade, en la Costa Sureste de Brasil

La Participation des Pêcheurs dans la Co-gestion des Pêches Côtières: Le Cas de la Communauté de Trindade, Côte Sud-est du Brésil

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ABSTRACT

The development of coastal fisheries co-management depends on numerous factors, including the effective participation of fishers and their organizations' representatives in decision-making. In Trindade, Paraty, Brazil, local fisheries are carried out along with tourism-related activities, in some cases within protected areas. In this paper, we discuss factors contributing to the effective participation of fishers in management processes that affect fisheries in Trindade. Data on fishers' participation is based on interviews and observation of meetings/workshops. From 2009 to 2011, we observed 16 meetings related to fisheries management. Trindade fishers' participation in decision-making processes that influence artisanal fisheries is still a challenge concerning the legitimacy of those processes, which are mainly characterized as top-down processes. Fishers often participate only by consultation and by providing information. In order to develop more collaborative management processes, a greater level of involvement and commitment of fishers is required. Guaranteeing well planned meetings and workshops with skill facilitators may contribute towards this end. An additional way to increase fishers' participation may be through creating arenas that welcome different values, worldviews and types of knowledge reflecting their own cultural, social and political contexts. This may be achieved through adoption of guiding principles of participatory processes that foster the development of a common vision for collaborative management and, hopefully, for learning processes as well.

KEY WORDS: Participation, co-management, artisanal fisheries, Paraty, Brazil

INTRODUCTION

This paper aims to discuss what encourages and what hinders effective and legitimate participation of artisanal fishers in management processes that affect access to and appropriation of fisheries resources. Our guiding questions are "What are the main characteristics and dynamics of social arenas[1] where small-scale fisheries issues are discussed?", and "How do these features influence fishers' participation?".

Participation has been a central issue in studies on co-management (Berkes et al. 1991, Sen and Nielsen 1996, Jentoft 2003) and adaptive co-management (Armitage et al. 2007, 2009). Several factors drive the emergence of adaptive co-management processes, many of which related to the scope of participation, such as:

i) Involvement of stakeholders at various levels,
ii) The existence of institutions that facilitate the creation of social arenas for management,
iii) Political support for collaboration,
iv) The existence of leaders and social networking communication,
v) Trust between fishers and government,
vi) Joint decision-making,
vii) Sharing power, and
viii) Orientation to learning.

(Olsson et al. 2004, Armitage et al. 2007, Berkes et al. 2007, Plummer and Armitage 2007, Armitage et al. 2009).

This paper addresses the issue of participation of fishers from Trindade community (Paraty municipality, on the southeastern coast of Brazil), in arenas that influence decisions about artisanal fisheries' management in Paraty and specifically in Trindade. Our data collection includes direct observation of 16 meetings, and informal interviews with five

[1]"A social arena is a metaphor to describe the symbolic location of political actions that influence collective decisions or policies" (Renn 1992).This symbolic place is not a geographical entity or an organizational system, but represents the political actions of social actors on a particular theme, such as solving a social problem. The concept of arena considers only the actions of individuals or groups wishing to influence collective action, and who may participate in one or more arenas with different institutional contexts. Arenas have formal and informal rules, the latter being developed from interaction between actors and influenced by their expectations, values and interests (Renn 1992).

leaders of Trindade and of local government, held between November 2009 and December 2010[2]. The meetings we observed are related to the Consultative Council of the Bocaina Mosaic[3] and to the Fisheries Agreements proposal for Ilha Grande Bay.

What is Participation?

The term participation can be defined as "the involvement of individuals and groups that are positively or negatively affected by a proposed intervention (e.g., a project, a program, a plan, a policy) subject to a decision-making process or are interested in it." (André et al. 2006:1).

From the analysis of about 200 participatory development projects, the International Institute for Environment and Development (IIED), in England, categorized participation into seven types:

i) As a pretext, also called manipulative participation,
ii) As passive listening of information,
iii) As listening and providing information when required,
iv) As query on pre-lined issues in working groups,
v) For elaboration of agendas (e.g. commissions),
vi) To seek consensus on strategic elements (e.g. river basin committees), and
vii) The independent initiative of external organizations (Bass et al. 1995).

Participation can be treated either as a methodological tool in decision-making processes or as a process itself. In the latter, factors such as the culture of a group, community or organization is considered a component of the participation dynamics. When applied as a methodological tool, the intrinsic relationship that exists between participation and cultural aspects of a system (e.g. local culture, organizational culture, a nation's culture, professional culture) can be ignored. In this case, chances that more powerful stakeholders manipulate social relations, interests or outcomes are increased (Enserinck et al. 2007, Charnoz 2009).

Seen as a process, participation is the result of interactions among stakeholders that, although bearing different values, worldviews, knowledge and opinions, interact under specific cultural, social and political contexts of an arena. Along with these aspects, institutional structure, power relations, and skills and confidence to negotiate should also be considered as factors that drive the path of participatory processes. This approach favors legitimacy to the participatory process since it holds conditions that stimulate participants to take responsibilities and to make decisions (Borrini-Feyerabend et al. 2004, Enserink et al. 2007, Charnoz 2009, Von Korff et al. 2010).

When seen as a process, participation fosters the formation of local groups that collaborate and self-organize, increasing learning opportunities among stakeholders (Stringer et al. 2006). Regarding their structure, participatory processes tend to have clear planning and timelines that are adequate to the social and cultural context of people involved. This includes a clear definition of guidelines, goals and rules for decision-making; awareness of participants; an agile coordination that avoids dominance of participants who monopolize speech; and evaluation of the process by people involved (Bass et al. 1995).

What Favors and What Limits Effective Participation in Management Processes?

The adoption of principles of participation (Box 1) as a guidance on the development of participatory processes helps maintaining the process coherence to its social and political backgrounds. Moreover, it favors receptivity to the diverse demands of participants, process transparency and flexibility to change (Bavinck *et al*. 2005, Von Korff *et al.* 2010).

The various stakeholders involved understand participation in different ways and, continuously, different arguments and claims arise during the process (Stringer et al. 2006). In this sense, in addition to considering the principles of participation, facilitators able to coordinate and make participation a flexible process in which people feel safe and encouraged to engage and commit is key for the process. Because it is not always possible to hire an outside facilitator, often technicians, managers and researchers assume the role of facilitators, which requires from these people control and attitudinal change that only occur gradually, through training and self-development processes (Stringer et al. 2006, Bass et al. 2009, Von Korff et al. 2010).

Ramirez (1999) argues that a group, individual or organization only participate *de facto* in a process, i.e., are able to influence it, if people are empowered with knowledge and skills to handle social situations and to seek solutions to problems. This means that stakeholders in situations of discrimination and power asymmetry need a lot of support to feel able to participate. In this regard,

[2]Informal interviews consisted of conversations conducted without prior structuring and without the exercise of control over the interview (Bernard 2006), and were usually held before or after the meetings we observed. We interviewed three leaders of the Trindade Residents' Association (AMOT), a leader of the Trindade Association of Small-Scale Fishers and Boatmen (ABAT) and a city councilor of Paraty, who talked about their expectations and criticisms concerning fisheries management.

[3]The Bocaina Mosaic is a set of 19 protected areas, largely occupied by traditional people such as *Caiçaras*, *Caipiras*, *Quilombolas* and indigenous. It is managed in an integrated and participatory way, "considering its distinct conservation objectives, in order to reconcile the presence of biodiversity, socio-diversity enhancement, and sustainable development in the regional context" (Federal Law 9.985/2000).

Box 1. Guiding principles for planning and implementation of participatory processes in natural resource management (adapted from Von Korff et al. 2010).

Principles of participatory processes
1. Treat participation as an opportunity for effective decision-making and not as an obligation, and ensure that the participatory process is guided by clear and transparent action.
2. Take into account all the contributions of stakeholders in the participatory process, from planning to implementation.
3. Encourage the involvement of stakeholders who are interested and affected by decisions of the process, and wisely avoid losing control of coordination or facilitation.
4. Clearly define the roles and responsibilities of who is coordinating the process and of those who are participating.
5. Respect the political reality in which the process is embedded, i.e., make it clear who have the primary responsibility for final decisions.
6. Meet the needs of stakeholders and of the context. The mechanisms and instruments for participation must be chosen according to the needs and profile of participants.
7. Be open to adjust the path of the process during its development.

access to information and training to deal with situations of negotiation and problem solving can help. When considering access to knowledge, recognizing the legitimacy of a greater knowledge system formed by diverse worldviews and information must prevail than choosing between scientific and local knowledge. Hence, this larger knowledge system is liked to be closer to the reality of the various stakeholders, making it clearer, more transparent, and less threatening (Borrini-Feyerabend et al. 2004).

It must be recognized that effectively participatory processes may be slow and last for a long time, besides being costly. Although time and financial resources are critical for their preparation, it is not common that programs and projects predict these costs in their budgets and rarely time and costs spent in participation processes are taken into account in their evaluation. When compared to merely advisory projects, organizations leading management and decision-making processes are usually evaluated by their physical and financial goals and not by the process itself; this is so, among other reasons, because it is difficult to quantify participation (Bass et al. 1995, Hanna 1995, Stringer et al. 2006, Von Korff et al. 2010).

Several other factors hinder the development of participatory processes, for instance, when international development agencies rely on their financial power to control the development of projects and programs instead of encouraging or creating mechanisms that allow local institutions to manage financial resources autonomously (Bass et al. 1995). Social discrimination is another limiting factor for the advancement of participatory processes, which reinforces the feeling of inferiority among individuals and groups, and withdraws people from opportunities to participate in collective decision-making processes. Baral and Heinen (2007), for example, found that discrimination along with lack of transparency on expenditure of conservation funds threaten the participation of community members in conservation programs in Nepal. Moreover, costs and fatigue generated during participatory processes added to the resistance of locals to participate.

It is worth mentioning that collective decision processes usually go through phases where the arena consists of meetings or workshops, with long technical presentations and few moments for reflection and plenary discussion. As a result, fishers are not always available or willing to attend to meetings and express their opinions, either because they are at sea, or because they are on their period of resting and leisure, or because their personality traits do not bind them to this type of social dynamics (McGoodwin 1990). McGoodwin (1990) suggests that, in order to think of a more participatory fisheries management, fishers' spouses and relatives should be included, since they are continuously engaged in the social and political environment of communities.

Participation is a voluntary action with costs to individuals who leave their work, home, or rest to engage in processes that affect them. Charnoz (2009) notes that biodiversity conservation projects rarely have a direct relationship with solutions for everyday problems, such as providing food for the family. In this case, resistance to participate may be an immediate reaction to a commitment that is not perceived as a short-term benefit. On the other hand, when conservation projects generate opportunities for participation with fast and visible benefits, such as data collection and monitoring tasks, the unequal distribution of these opportunities may also lead some individuals to resist being involved, and even cause conflicts, disturbance and boycotts.

The Study Site

The community of Trindade is located at the southern portion of the Paraty municipality in Rio de Janeiro state, southeastern coast of Brazil, between São Paulo and Rio de Janeiro cities. It is adjoining Ilha Grande Bay, which is an important region in Brazil in terms of tourism, environmental conservation, and more recently the oil industry (Figure 1a). In Paraty and Ilha Grande Bay, artisanal fisheries management should be treated as part of protected areas management, since protected areas cover about 70% of Paraty municipality including marine areas.

Trindade, which is considered a *Caiçara*[4] community, has about one thousand inhabitants, but during the summer season this number increases more than ten fold. The Atlantic Forest surrounding the community is well conserved, and most of it is embedded in protected areas. In the 2000s, managers began to come up with actions to effectively implement protected areas in the region that previously existed only on paper, i.e., written in their decrees of creation. Tourism and commerce are the main economic activities in Trindade, which is an important tourism spot of Paraty.

From the 1970s on, great changes have been taking place in the coast of São Paulo and Rio de Janeiro States, notably with the construction of the so-called "Rio-Santos" highway (BR-101). Since then, tourism and real estate developments have been displacing *Caiçara* families away from shoreline, where their original settlements used to be.

Trindade has an estimated 30 to 60 part-or-full-time fishers, most of them being *Caiçara* people. They fish always near the coast, on beaches, cliffs and coves, aboard canoes or outboard motor boats. Fish caught may be consumed by the fisher's family or given to friends, relatives and residents of neighboring communities, as well as sold to local residents, tourists, restaurants or to a middleman in Paraty (Lopes 2010a, Bussolotti et al. 2010, Hanazaki 2010).

Two protected areas that belong to the Bocaina Mosaic encompass the fishing area in Trindade: the Cairuçu Environmental Protection Area (APA Cairuçu) and the Serra da Bocaina National Park (PNSB). The most valued fishing sites are within the Cachadaço Bay (Figure 1b), which is embedded in the PNSB (Bussolotti et al. 2010).

The main fishing gear currently used in Trindade is the floating trap net, which is considered a selective technique since fish stay alive in the net, allowing fishers to check the net several times a day for selecting fish to be caught and releasing the unwanted ones (Begossi 2011). Floating trap net spots are arranged along the routes of pelagic fish (Lopes 2010b, Begossi 2011) and are used by several net owners in a rotation system. Common rules to use fishing spots are closely linked to social and cultural dynamics of the community (Bussolotti et al. 2010, Begossi 2011). Fishers consider fishing as one among other components of their livelihood, i.e., it is done in association with other activities such as tourism, which is more profitable than fishing.

Fishing Related Problems in Trindade

Rights to access and use of sea, land and natural resources are at the core of the problems related to fishing in Trindade. Since the 1970s, the community has been facing conflicts related to land property rights (Siqueira

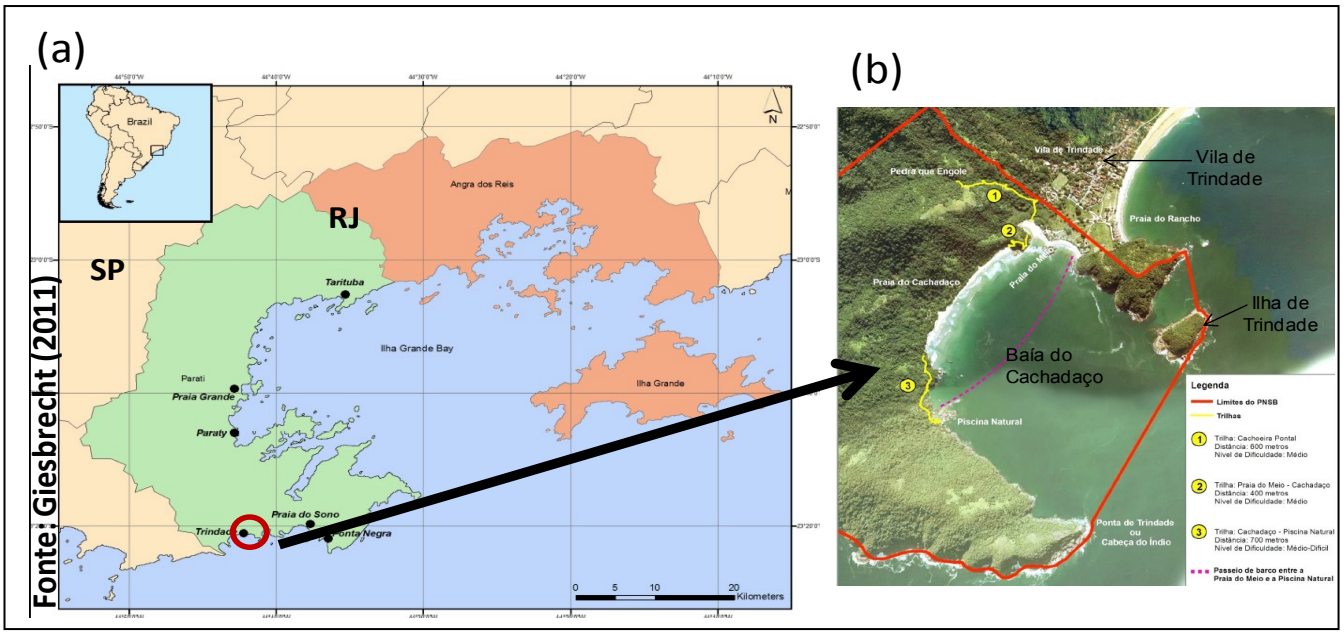

Figure 1. Study site. (a) Paraty municipality in the Ilha Grande Bay, state of Rio de Janeiro. In southern Paraty, the Trindade community (source: Giesbrecht 2011). (b) Satellite imagery of Trindade; the red line highlights the Serra da Bocaina National Park area (source: Parque Nacional da Serra da Bocaina-ICMBio, 2011).

[4]The *Caiçaras* – people descending from Portuguese colonists, Amerindians and Africans – live along the southeastern Brazilian coast and retain subsistence activities directly related to exploitation of natural resources, such as fishing and shifting cultivation, and, more recently, tourism activities (Adams 2000, Begossi et al. 2010).

1984, Plante and Breton 2005). These conflicts have promoted at one point social cohesion and organizational capacity to collective deal with external threats. Nevertheless, as in any social group internal conflicts still exists as well as community mistrust towards outsiders such as government, universities and non-governmental organizations (NGOs).

New conflicts related to the use of land, sea and beaches emerged in Trindade from the 2000s on, due to actions of implementation of the Serra da Bocaina National Park. Fisheries dynamics is being transformed over the years, as tourism expands and rules imposed by the managers of protected areas are implemented. Currently, beaches are highly contested by fishers, tourism boatmen, tourists, and restaurants, while the sea is disputed by local fishers, surfers, diving fishers and trawlers from southern and southeastern Brazil (Bussolotti et al. 2010).

Fishers claim their rights to access marine resources, while restrictive legislation legitimate actions by enforcement and environmental agencies. Small-scale fishers want to remain fishing in their territories, but protected area managers say this is no longer allowed. Although government and fishers are aware of the need for co-management, top-down management prevails.

Institutional Context of Fisheries Management

Artisanal fisheries in Trindade is partly practiced within the Serra da Bocaina National Park, which aims to conserve ecosystems and biodiversity by restricting access to and use of natural resources. Trindade fishers and their community leaders participate in various social arenas that directly and indirectly affect fisheries, as in the case of the Consultative Councils of Protected Areas. Through demands and claims, they seek ways to dialogue with government, universities, NGOs, and other community-based organizations, to solve problems of access to the sea and marine resources.

Social arenas herein described were observed through meetings of the Bocaina Mosaic Consultative Council (five meetings), an assessment of Trindade artisanal fisheries sustainability (six meetings) and Fisheries Agreements proposals for Ilha Grande Bay (five meetings).

Consultative Councils of protected areas are dialogue forums that bring together government and civil society to address issues related to ecosystems conservation and social development within protected areas and their buffer zone, including the problems related to artisanal fisheries. Members of the Bocaina Mosaic Consultative Council meet regularly, including representatives of artisanal fisheries and community organizations. This council is coordinated by the National Agency in charge of managing all federal protected areas in the country (ICMBio - Chico Mendes Institute for Biodiversity Conservation).

In 2010, the Bocaina Mosaic coordinators hired a consultant to assess the sustainability of artisanal fisheries in Trindade, aiming to generate information that could subsidize a proposal for fisheries management conjoined with the Serra da Bocaina National Park. This initiative resulted in a report, but no progress was made in negotiating a management agreement with the Park.

Fisheries Agreements started in the 1970s and 1980s, in the Amazon, from local initiatives to manage fisheries resources in response to intensification of commercial fishing in the region. They function as a mechanism for participatory management of fisheries at the community level and are regulated by federal legislation. The proposal of Fisheries Agreements for the Ilha Grande Bay started in 2009 and was led by the Ministry of Fisheries and Aquaculture (MPA) in response to local fishers' demands, and as a result of an assessment of artisanal fisheries in the Ilha Grande Bay (Begossi et al. 2009).

The meetings on Fisheries Agreements held in Paraty between 2009 and 2010 raised the idea of building a system for co-management of artisanal fisheries involving fishers, government, NGOs and universities. In 2010, a partnership between the Federal University of Rio de Janeiro (UFRJ) and two government agencies (Fundação Instituto de Pesca do Estado do Rio de Janeiro (FIPERJ) and The Ministry of Fisheries and Aquaculture (MPA)) mobilized various stakeholders to produce a document with guidelines for a public policy program for co-management of fisheries and water resources in the Ilha Grande Bay. Nevertheless, at the end of the guidelines drafting, in 2012, the co-management proposal could not be continued by the MPA due to lack of resources and replacement of the Ministry's technical staff in charge of this initiative.

Trindade People Participate in Management Processes

The participation of Trindade fishers and its community leaders varied along the process, over time and among community people. Yet, when analyzing the meetings of Bocaina Mosaic Consultative Council, Fishing Agreements and workshops for the assessment of Trindade artisanal fisheries it is possible to characterize the type of participation, the methods used, the initial demand for participation, and the process step in which fishers participated (Table 1).

Regarding the type of participation, fishers participate by listening or in consultative workgroups, i.e., giving information. The participatory methods include explanatory presentations using datashow, focus groups and group interviews. The demand concerning Fishing Agreements and the assessment of fisheries sustainability in Trindade came from fishers in both cases, but initiatives were leaded and controlled by government stakeholders. Fishers only had the chance to participate in the planning phases, since both processes were discontinued.

Do the social arenas analyzed present favorable

Table 1. Characterization of fishers' and other community members' participation in the Fishing Agreements and in the Sustainability Assessment of Artisanal Fisheries in Trindade (as part of the assignment of the Consultative Council of the Bocaina Mosaic), between November 2009 and December 2010.

Participation of fishers and other community members from Trindade	
Type of participation	Listening, consultative working group
Participatory Method	Explanatory 'datashow' meeting, focal group, group interview
Initial Demand	From the community, but initiatives are leaded by government
Participation Step	Planning

conditions for participation of fishers and community leaders in the artisanal fisheries management? To answer this question, we selected some factors that favor participatory processes or co-management (Table 2). We observed that there is no sharing of power and of responsibility in the decision-making processes, which are characterized as top-down processes controlled by government stakeholders.

Although the analyzed initiatives were guided by demands of the community (Table 1), during the observed meetings and based on interviews, community members' speech revealed a strong feeling of dissatisfaction concerning exogenous processes of management, even when they were accompanied by participatory proposals. This dissatisfaction is linked to the excess of initiatives – especially conservation initiatives – such as research projects and consultancies. Locals claim that these initiatives pose questions formulated beforehand, which most of the times had already been answered by other consultancies. Still, fishers and other residents are mobilized to provide information, though the community rarely benefits from the results and, most importantly, these initiatives have no continuity (Table 2). Therefore, actions, projects and programs developed in Trindade must be continued and be conjointly appraised by the community and by those in charge of projects and programs; also they must be based on local demand, otherwise they will not be legitimate by the community.

Table 2. Limiting factors for participation of Trindade fishers in participatory processes, as observed in meetings of Fishing Agreements and of the Sustainability Assessment of Artisanal Fisheries in Trindade (as part of the assignment of the Consultative Council of the Bocaina Mosaic), between November 2009 and December 2010.

Factors that enhance participatory processes	**Participation of fishers and other community members from Trindade**
Participation in decision-making	Individuals participate in listening, being consulted and giving information
Trust among stakeholders and in the process	Individuals feel tired and have lost trust in participatory initiatives
Sharing power	Power asymmetries; government stakeholders hold more power
Development of common views towards co-management	Individuals say that local knowledge, values and livelihood are not considered
Social learning	Co-management initiatives are not assessed and have no continuity

Fishers and other local stakeholders expect their demands, opinions, visions and knowledge to be considered in these processes, as in the case of their everyday problems such as the lack of sewage treatment and the difficulty in communicating with managers of protected areas (Table 2). In this unsatisfactory scenario, fishers and other community members assume an attitude of strengthening their demands and claiming their rights but little negotiation is built between the community and the government.

CONCLUDING REMARKS

Participatory processes should be designed according to social, cultural and historical context, guided by values and principles, and based on combined behavior and actions that seek to achieve collective action and learning in long-term commitments. To that end, people involved need to be willing to change their attitudes, and circumstances must be favorable to transform institutional arrangements.

People in charge of leading decision-making processes need to be attentive to the demands of fishers and their communities, as well as to the benefits of participation paths that are able of stimulating dialogue, negotiation, and autonomy for local stakeholders. Dissatisfaction with participatory approaches used in the processes we analyzed in this paper was expressed as complaints and claims. As a result, these initiatives are not perceived by locals as opportunities for negotiation and for developing effectively participatory processes.

Participation of the various stakeholders in arenas that affect fisheries in Trindade could be improved through greater clarity about each stakeholder's role in the process, greater transparency of rules and steps of the process, and respect to the diversity of values and worldviews of each individual. However, conflictive relations permeate the dialogue between fishers and government, which hampers power sharing in decision-making. In this regard, fishers should change their claiming attitude and government should change its authoritarian attitude, both of them making efforts towards negotiation. In order to build an effective participation process, fishers, community and other stakeholders should rely on government's institutional support and be assisted by individuals or bridging organizations capable of connecting the community with other organizational levels.

For a critical discussion about difficulties and pitfalls in participatory processes, we believe it is necessary to look deeply into the social, cultural and political environment that permeates behaviors and actions of groups and

individuals, in search of guiding principles for effective participation in decision-making processes that affect fisheries in Trindade. This requires resources (time and financial feasibility) and people who are prepared to lead these processes in the pursuit of legitimate participation, which involves continuous learning, respecting different worldviews and sharing power and responsibility.

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