Ocean & Coastal Management 130 (2016) 260–276

Contents lists available at ScienceDirect

Ocean & Coastal Management

journal homepage: www.elsevier.com/locate/ocecoaman

Stakeholders' collective drawing reveals significant differences in the vision of marine spatial planning of the western tropical Pacific

Anne Littaye [a, *, 1], Sylvie Lardon [b], Neil Alloncle [c]

[a] Agence des aires marines protégées, Nouméa, New Caledonia
[b] INRA & AgroParisTech, UMR Métafort, Clermont-Ferrand, France
[c] Agence des aires marines protégées, Brest, France

ARTICLE INFO

Article history:
Received 5 January 2016
Received in revised form
25 May 2016
Accepted 16 June 2016
Available online 6 July 2016

Keywords:
Marine spatial planning
Territory analysis
Knowledge exchange
Spatial representation
Drawing map

ABSTRACT

Marine spatial planning (MSP) is an approach that has become essential in order to meet coastal states' commitments to coordinated management between all stakeholders involved, whether the main objective is for economic, recreational or conservation purposes. The lessons learned from MSP over the last decade revealed the importance of applying multidisciplinary approaches to expand and deepen the involvement of stakeholders from economic and political decision-making spheres, as well as considering social and cultural dimensions.

As part of the MSP process in the western tropical Pacific region, a participatory and prospective method was undertaken (the territory game). The method is based on the collective construction of spatial representations by a pool of relevant stakeholders. Both, the spatial outputs, as well as the discussions leading to them, were analysed to evaluate the stakeholders' current and future visions of the territory.

During the methodological pathway, visions developed ranging from a local scale to areas that covered all oceanic compartments, as well as some even considering the entire region. Local and intangible knowledge and opinions were taken into consideration, and helped to create a comprehensive understanding of the context. In the course of the project, participants proposed socio-ecological management solutions with innovative spatial scales. Furthering this effort, the proposals were shaped to the action capacity of the states concerned; in addition, certain Pacific countries were identified as potential leaders for steering some of the proposed actions.

This approach can help to promote local actors' involvement in MSP by a collective analysis as well as to strengthen integration of cultural and social aspects. The whole process is based on biophysical and geopolitical scientific information to improve the credibility of the results. The suggested actions could thus be implemented by each state and the Western Pacific region. Though the integration of the results into high-level decision making was not tested yet, the presented approach would allow an increased acceptance of suggested directions and actions by taking into account the different spatial visions of the relevant actors.

1. Introduction

The development of new activities in the maritime sector and environmental awareness has increased in recent years. As a result, integrated maritime policies have emerged in the marine spatial planning (MSP) process. Conventions and Guidelines (UNEP, 2008; Ehler and Douvere, 2009; WCPA/IUCN, 2010; Pratt and Govan, 2010; Directive EU, 2014) outlined the potential benefit of such a process and consequently, maritime states have redoubled their efforts to implement MSP approaches at local and national levels. However, there is no agreed definition, only recurring principles: "Marine Spatial Planning is commonly understood as a public process for analysing and planning the spatial and temporal distribution of human activities in sea areas to accomplish economic, environmental and social objectives. The ultimate aim of marine spatial scheduling is to draw up Plans to identify the marine areas

* Corresponding author.
E-mail addresses: anne.littaye@cimonline.de (A. Littaye), sylvie.lardon@agroparistech.fr (S. Lardon), neil.alloncle@aires-marines.fr (N. Alloncle).
[1] Present position: GIZ/CIM, Deutsche Gesellschaft für Internationale Zusammenarbeit, Ilot V 22, BP 5217, Nouakchott Mauritania.

http://dx.doi.org/10.1016/j.ocecoaman.2016.06.017
0964-5691/

for different sea uses" (De Cacqueray, 2011). This approach has often faced conflicts because interests and visions differ among stakeholders. Indeed, this new social and political building of maritime areas is giving new life to the common good concept (Ostrom, 1990).

This MSP process was mainly deployed in operational planning goals, in specific areas, in building management plans for protected areas, and for fishery resources; thus, the objectives were mainly ecological or economic. However, the application of this process to strategic planning aims is increasing. The challenge of regional scale studies is to develop an overview of the territory dynamics to help structure and coordinate national efforts.

Until recently, MSP was conducted by the technical sphere using two tools: mapping and zoning. However, the development of information technologies has facilitated the design of spatial representations or maps (Smith and Brennan, 2012). These technologies suggest delving deeper into the data acquisition to enrich the territory representations.

These tools streamline and standardize maritime space using economic information of maritime activities (Hoagland et al., 2005) and information on natural heritage such as sensitive natural habitats and species richness. The link between these data is established through impacts, what some authors have called "representations of power" (Harley, 1989). This approach does not facilitate the acceptance and ownership of the resulting recommendations, which are necessary for their effective implementation. The rationalization of space in these representations often reaches only some sectorial actors (Johnsen et al., 2014). The poor involvement of the politic arena in the planning process may also be linked with the challenge of building a consensus. St. Martin and Hall-Arber (2008) hypothesize that a data layer is still missing in territory mapping to meet the complexity of the integrated management of maritime areas and resources.

A participatory approach should have the dual benefits of facilitating the multidisciplinary need to address complex socio-environmental problems as well as promoting the exchange of knowledge (Fazey et al., 2012; Cvitanovic et al., 2015). Moreover, the first guidebooks on marine planning recommended the co-construction of the analysis by territory actors (Pomeroy and Douvere, 2008). These methods are currently increasing in number in the field of marine planning. They have been reviewed to identify and understand the existing barriers to knowledge exchange between scientists and decision-makers (Van Kerkhoff and Lebel, 2015) in order to facilitate adaptive governance and implementation of recommendations.

A MSP study called PACIOCEA[2] was implemented in 2014–2015, in the western tropical Pacific region. The first Regional Strategic Plan for this region expired in 2014 and its assessment served as a base for the second plan (O'Connor, 2014). The PACIOCEA project coincided with this political schedule. The results of the project should feed the regional strategy to support the operational implementation of feasible actions at the national governance level. In addition, this study was part of the international Convention on Biodiversity (WCPA/IUCN, 2010), the Regional Seas Conventions, the associated Strategic Plan for the Pacific, "The Pacific Oceanscape" (Pratt and Govan, 2010) and the Regional Pacific Plan (Secretariat of the Pacific Islands Forum, 2007).

The project's general objective was to strengthen cooperation between the countries and territories in the region and to promote sustainable and integrated management of maritime areas and resources. This project was also considered as a pilot study for MSP regulations at a regional scale. The chosen method considered the strategic focus of the study as well as the technical restrictions for standardized data at this spatial scale. In addition, the project also served as a pilot study to better integrate social and cultural dimensions into spatial planning.

Therefore, the participatory and prospective method "The Territory Game" (Angeon and Lardon, 2008; Lardon, 2013) was adapted to these objectives. This method is based on the collective construction of spatial representations by stakeholders. This process allows to produce a diagnosis of the current situation, to identify issues for building future scenarios, and to result in recommendations for actions. In the western tropical Pacific region, it was implemented in two workshops. The participants' outputs were maps and oral exchanges, in groups or plenary sessions. These results were then analysed to estimate the benefits of this approach, which was based on drawings as a mean to fully depict collective activities. The PACIOCEA results should feed the current research on innovative planning trajectories.

The purpose of this paper is to present some results from the analysis of the drawings. The focus is on tracking the change of the participants' perceived responsibility and ownership of the marine area. The paper also presents the linkages between the diverse aspects of a socio-ecological system and discusses the relevance of the proposed actions to meeting the issues that have been identified. In addition, the differences in the outputs of scientists and institutional participants and of national and regional representatives are compared.

This analysis encouraged discussions about the actors' drawings to facilitate both, the involvement of the various actors in a maritime territory and collective responsibility for its issues. The method's perspective is to facilitate the operational implementation of proposals and to improve the effectiveness of maritime territory management.

2. Material and methods

2.1. The study area

The study area is widely extended, 33 million square kilometers and covers twenty-two countries and territories with various legal status (Fig. 1).

2.2. The territory game

The territory game is a participative and prospective method for actors to co-construct a shared vision of the dynamics of the studied territory and its evolution through potential scenarios (Lardon et al., 2007). The spatial representations drawn on maps ease the expression of participants' viewpoints and clarify issues and their conceptual bases such as experience and cultural concerns. Until now, this method was developed on land as part of the renewal of a strategic plan for territory management (Lardon, 2013). The PACIOCEA project represents a first implementation as part of a territorial analysis of a maritime area.

The different steps were operated in group and pooling activities in plenary sessions to facilitate exchanges and debates (Fig. 2). The participants were divided into groups, each involving participants from different knowledge domains and geographical areas. A common base map was used for spatial representation and was arranged in the middle of each group (Table 1).

PACIOCEAs' main goal was providing elements and proposals to strengthen the cooperation between the states and to ensure both, the conservation of their exceptional diversity and a sustainable and fair development. In this framework, the establishment of a

[2] PACIfic OCean Ecosystem Analysis, Preparatory Action Best, Voluntary Scheme for Biodiversity and Ecosystem Services in Territories of the EU Outermost Regions and Overseas Countries and Territories, 2012.