1. Introduction

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A TOPICAL MATTER

The concept of governance is increasingly concerned with stakeholder representation and participation and with the need to find several explanations to the problems affecting fisheries management beyond a sectoral approach (Jentoft, 2006). A governance approach is different from a management one: the focus is not on technical or economic solutions to sociopolitical problems but rather on the power relations between actors that determine the application of norms. The transterritorial nature of fishing activities, illustrated by the overlap between the different fishing territories and itineraries (for example, between a marine protected area [MPA] and the adjacent territory) can better be taken into account by a governance-based approach that also integrates better the consequences of globalization such as the redistribution of value-added and increasing inequalities (Weigel and Dahou, 2007).

Some years ago, in proposing a social science research programme applied to MPAs and their governance, Christie *et al*. (2003) already stressed the importance of the political, social and economic issues expressed in the concept of governance, insisting on the fact that the social and political dimensions needed to be adapted to local requirements and specificities (Christie *et al.*, 2003, p. 24). The popularization of the concept of governance within the academic world of fisheries sciences signalled the end of the natural sciences hegemony and the emergence of a multidisciplinary approach, marking the end of an era characterized by "the historical difficulty or reluctance to fully integrate social science disciplines into operational fishery science" (Garcia and Charles, 2008, p. 16).

The importance of governance in protected areas was explicitly recognized in several recommendations from the Johannesburg World Summit on Sustainable Development (2002) and the World Parks Congress in Durban (2003), including one relating to the establishment of a global system of coastal and marine protected areas networks that ought to cover 20–30 percent of the maritime surface by 2012, and another relating to the protection of marine biological diversity and ecosystem processes.[1] The wording of these recommendations highlights the need for coherence between natural resource conservation and socio-economic development policies when anything other than a strict nature reserve is being considered. These recommendations call for the recognition of and the respect for customary property, access and use of local populations. They fit within the general trend of recognizing the fundamental role of social, cultural, economic and institutional factors in conservation, aiming to increase civil-society involvement in the decision-making process.

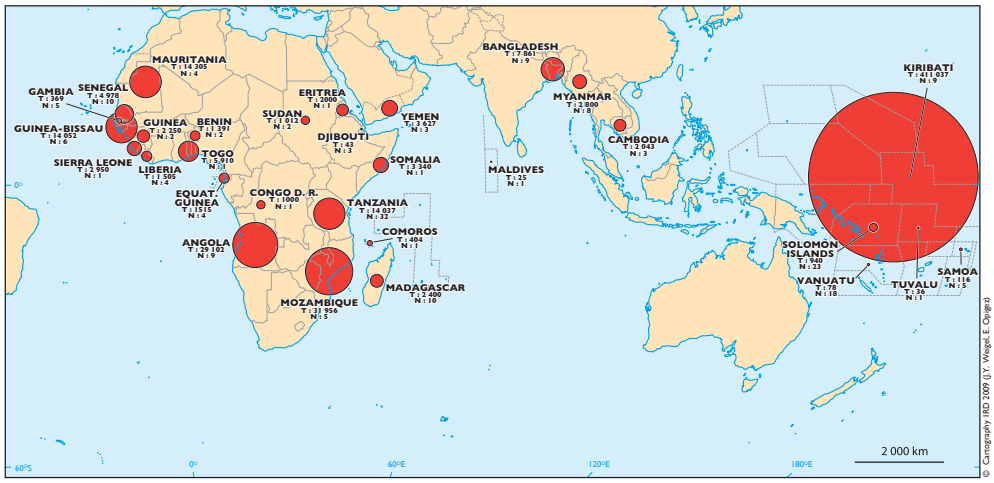
[1] Respectively, recommendations 22 and 23 (cf. www.iucn.org/themes/wcpa/wpc2003/).

THE MPA-RELATED STAKES IN LEAST-DEVELOPED COUNTRIES

The need for adequate governance of MPAs in least-developed countries (LDCs)[2] is commensurate with the importance of the territorial stakes in their extended maritime domain. A significant part of this domain is already officially protected, as no fewer than 207 marine areas cover more than 563 000 km² with an average area of 2 720 km². The LDC MPAs are characterized by a wide variety of sizes ranging from the largest MPA in the world (Phoenix Islands in Kiribati) to some of the smallest, found in Maldives and Solomon Islands[3] (Map 1).

MAP 1

Total area and number of marine protected areas in least-developed countries



Sources: MPA Global Database; WDPA Database; PRCM.

Note: The representation in this map (and the proceeding maps) predates the recent UN General Assembly decision to admit South Sudan as a new recognized State (see Resolution 1999 (2011) Adopted by the Security Council at its 6582nd meeting, on 13 July 2011

Other important challenges are those of biodiversity and ecosystem conservation. The first is related to the rich diversity of the fauna – especially the aquatic fauna –

[2] The term "least-developed countries (LDCs)" describes the world's poorest countries with the following three criteria: (i) low income based on a three-year average estimate of the gross national income per capita (under US$570 for inclusion, above US$900 for graduation); (ii) poor level of development of the human capital based on the Human Assets Index using four criteria (nutrition, health, education and adult literacy); and (iii) economic vulnerability with Environmental Vulnerability Indicators reflecting the instability of agricultural production, the instability of exports of goods and services, the economic importance of non-traditional activities (share of manufacturing and modern services in gross domestic product), merchandise export concentration, and the handicap of economic smallness.

[3] Sources: World Database on Protected Areas (www.wdpa.org) and MPA Global (www.mpaglobal.org).

in these protected areas. The richness of this aquatic fauna is expressed by the presence of emblematic species among the large number of marine and estuarine species identified (more than 700 in West African MPAs). Such diversity is similar to that of coral reefs (e.g. in East Africa and Madagascar, Red Sea, Maldives, Cambodia, South Pacific islands), upwelling areas (e.g. in West Africa and Angola) and estuarine and delta ecosystems (e.g. in West and East Africa, Bangladesh and Myanmar). These MPAs also host an avian fauna with huge concentrations of palearctic waders (Charadrii) as well as endemic species, all of which thrive on the productivity of the mudflats and mangroves. The flora in LDC coastal and marine protected areas is also very rich. The most remarkable features are: (i) the large mangrove forests or wetland forests, such as the Sundarbans in Bangladesh, the mangroves of Rio Cacheu, Guinea-Bissau; the forest reserves in the United Republic of Tanzania, the mangrove natural reserve in the Democratic Republic of the Congo; (ii) the remnants of subhumid forests (in the Bolama Bijagos Archipelago Biosphere Reserve in Guinea-Bissau; the Botum Sakor in Cambodia); and (iii) some agroforestry features, as in Vanuatu. The issues at stake for biodiversity and ecosystems in LDC coastal and marine protected areas are related to the threats they face: climate change (warming, sea-level rise) and human pressure (population densification and resource overexploitation).

However, the overriding issue is that of reconciling conservation and human presence because human activities are tolerated in almost all LDC MPAs. Only three of them (South Maskali Island in Djibouti, Cap Blanc in Mauritania and Lampi Marine National Park in Myanmar) fall within International Union for Conservation of Nature (IUCN) category I (strict nature reserve or wilderness area without permanent or significant habitation),[4] which means that almost all LDC MPAs would fit under the IUCN MPA categories II–VI. The latter are also characterized by a variety of denominations.[5] Noting that a single country can have several MPA denominations, the most common ones found in the database cited above are those of "national park" and "marine park" (dominant in Angola, Cambodia, the Comoros, Djibouti, Eritrea, the Gambia, Guinea-Bissau, Madagascar, Mauritania, Mozambique, Samoa, Senegal, the Sudan and Yemen), followed by "marine reserve" or "nature reserve" or "conservation reserve" (the Democratic Republic of the Congo, the United Republic of Tanzania, Tuvalu and Vanuatu), "forest reserve" or "forest conservation area" (mangroves of the United Republic of Tanzania, Vanuatu), "wildlife sanctuary" or "game reserve" (Bangladesh, Kiribati, Myanmar and Somalia), "wetlands of international importance" (Benin, Equatorial Guinea, Guinea, Liberia, Sierra Leone and Togo), dive sites (Maldives), or simply by the recent "MPA" denomination' (Senegal, Solomon Islands and Vanuatu). The number of MPAs increases every year mainly because of the multiplication of community-based protected areas, in particular in the South Pacific and, to a lesser extent, in West Africa.

[4] See note 3.

[5] The status in the cited areas takes into account several criteria from law, management, and international labelling. No MPA has been reported in these areas in Haiti, the only LDC in America.

Finally, when trying to reconcile conservation and human presence, issues related to cultural identity are growing in importance owing to the emphasis placed on the crucial role of some local practices in nature conservation, for example the establishment of fishing reserves , and their potential involvement in local and environmental governance. Going hand-in-hand with identity claims, the claims relating to the establishment of property and other legal entitlements on nature[6] can only be clarified by an identification of the inheritance of natural objects (e.g. land, water, fishing grounds), practices and knowledge. Identity assertion and traditional legal entitlement issues raise the question of an appropriate "indigenous" status as this is an argument often put forward to justify the closure of a territory and the exclusive appropriation of resources by MPA residents[7] or by the communities residing at its periphery.

FISHERIES AND MPA GOVERNANCE: EVOLUTION OF THE CONCEPT

A review of the fisheries literature shows how polysemic and vague the notion of governance has been until recently. Hence, Townsend (1995) argues in terms of fisheries self-governance analysing the respective benefits of corporate and cooperative governance structures. Symes and Phillipson (1999) prefer the term "co-governance" and stress the need for an integrated system combining privatization and regionalization. Hanna (1997) addresses the sustainability of fisheries governance and emphasizes the need to develop institutional capital. Garcia and Hayashi (2000) also consider governance sustainability and its spatial dimension. Wilson, Raakjær Nielsen and Degnbol (2003) hint at the notion of fisheries governance but prefer comanagement whose efficiency depends on improved stakeholder representation and civil society involvement. The notion of comanagement is also considered by Jentoft (2005), who examines the condition for its sustainability, which is the empowerment of individuals and communities. Research by Gray (2005a, 2005b) focuses on participatory governance. Grafton (2005) combines fisheries governance and social capital, and emphasizes the issue of trust and cooperation. Grafton *et al.* (2008) emphasize better governance conditions in a changing world. Cole (2003) revisits the theme of international fisheries governance. Chakallah *et al.* (2007) concentrate on the institutional arrangements required for transboundary marine resource governance. Gibbs (2008) underlines the need for, and the consequences of, a fisheries governance network. This notion of network is promoted by a few researchers and managers working on MPA governance (Gladstone, Krupp and Younis, 2003; WCPA/IUCN, 2007).

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[6] The French term for this process is "patrimonialisation".

[7] The population using the MPA includes residents non-residents and offshore immigrants. Residents are the long-term (traditional) settlers in the area. They have the legal status of "residents" and territorial claims over the resources. They may emigrate out of the MPA for periods of time, maintaining however their "resident" status. They also migrate seasonally within the MPA to ascertain their territorial claims. Non-residents do not have the same origin and rights as the residents. Some settled in the MPA long ago while others settle only seasonally (seasonal immigrants), in more or less seasonal camps. Offshore immigrants are not MPA dwellers (outsiders). They live close to the MPA and fish outside and inside it with little or no connection to the MPA land.

This polysemic nature of the notion of governance and the fuzziness accompanying it can be explained by the fact that most fisheries scientists focus on the role of MPAs in global governance of marine areas rather than on the content and modalities of governance itself. Relationships between protected area governance, on the one hand, and integrated management of coastal zones or ocean governance, on the other hand, are given priority. Thus, Ehler (2005) suggested a collective reflection on these relationships and set out principles and ways to implement this integration. Cicin-Sain and Belfiore (2005) reviewed the ecological, social and economic links between MPAs and ocean governance, and suggested a series of guidelines for this integration. Chronologically, governance and MPAs were first associated with the broader framework of coastal zone governance (Halim and Morcos, 1995; Cho, 2005), then in the even broader framework of ocean governance (Eichbaum and Agardy, 1995; Costanza *et al.*, 1999). More recently, MPAs have been associated to the large marine ecosystems management framework (National Research Council, 2001; Juda and Hennessey, 2005; Hennessey and Sutinen, 2005; Fanning *et al.*, 2007; Mahon, Fanning and McConney, 2008). At the same time, and following in the footsteps of FAO (2003, 2007), some authors have associated MPAs and governance to the ecosystem-based fisheries management framework (Christie and White, 2007; Pomeroy and Viswanathan, 2003; Carter, 2003; Pomeroy, Mascia and Pollnac, 2007; Charles and Sanders, 2007).

However, in the last few years, the imprecision in the notion of governance has been eliminated in the context of recognition of the multifunctional role of MPAs and the achievements of interactive fisheries governance (Kooiman *et al.*, 2005).[8] The recognition of the multifunctional role of MPAs, which illustrates the evolution from a conservationist to a sustainable development approach, has contributed to focusing research effort on the integration of societal needs and on governance content (Noël and Weigel, 2007). The work on interactive fisheries governance, inspired by work on modern governance (Kooiman, 1993; Rhodes, 1996) led to a definition: "The whole of interactions taken to solve societal problems and to create societal opportunities; including the formulation and application of principles guiding those interactions and care for institutions that enable and control them" (Kooiman *et al.*, 2005, p. 17). This definition can be applied to MPA governance insofar as the constraints on governance are similar: the diversity of fisheries systems and ecosystems; the complexity of human activities (within the fisheries value chain, between fisheries and non-fisheries activities) and of the ecosystem (variability and unpredictability); the dynamics of ecosystems, of markets, of the social, cultural and political environment; and the multiple temporal and spatial scales of activities (Kooiman *et al.*, 2005).

Three research breakthroughs have helped to clarify the notion of governance. The first, in the wake of works on interactive fisheries governance, is the systemic analysis of MPA governance that presents it as a relationship between two systems:

[8] For Kooiman *et al.* (2005, p. 19), governance is neither top-down not bottom-up but is related to the totality of the interactions between those governing and those governed – it is itself an interaction.

The first system combines management institutions and mechanisms. The second system consists of an ecological element (an ecosystem and the resources it hosts) and a social element encompassing users and stakeholders forming coalitions (Jentoft, van Son and Bjørkan, 2007).

The second breakthrough is in highlighting the importance of the local governance conditions: First, the geographical proximity of those who govern and those who are governed in an identified, delimited space (the MPA) has a social dimension (Talbot, 2006). Second, there is the institutional proximity created by the decentralization and deconcentration[9] of public administrations, which requires maintaining coherence between local and regional levels (Portman, 2007) and controlling transaction costs (Chaboud and Galletti, 2007). Finally, there is the organizational proximity that promotes deliberative practices towards achieving common objectives as well as collective compromises between diverging interests (Boncoeur *et al.*, 2007).

The third breakthrough is the identification of governance indicators used to measure the achievement of pre-established objectives (Abrams *et al.*, 2003; Pomeroy, Parks and Watson, 2004; Pomeroy and Rivera-Guieb, 2006; Heylings and Bravo, 2007). However, the normative and prescriptive approach underlying the use of indicators does not remove the need for an analytical framework in which governance is considered as a social fact and not as an end in itself (Hufty, 2007).

THE NEED FOR AN ANALYTICAL FRAMEWORK OF MPA GOVERNANCE

However, despite such progress, a review of the literature on MPA governance showed that, in LDCs, detailed analyses of their governance were rare and practically non-existent (Weigel *et al.*, 2008). However, only detailed analyses make it possible to characterize the governance system of an MPA (or a network of MPAs), to evaluate it against its stated objectives and its deficiencies, and finally to suggest new governance systems and appropriate public policy options. Such shortcomings can first be explained by the complexity of governance systems in LDCs, and the diversity and intertwining of social and institutional organizations:

[9] Decentralization reflects the recognition (often an institutional one) of a proper sphere of competence (e.g. in a district or commune) by the central power (i.e. the State). The decentralized institution is hierarchically and functionally autonomous (self-governing). The State cannot interfere with its functioning except to dissolve it in serious circumstances, and to organize new elections. In a decentralized mode, the State "lets other selected autonomous institutions do its job".
Deconcentration implies a delegation by the State or a centralized institution of the State (e.g. a ministry) to one of its lower-level representative institutions (e.g. a regional or local division of that ministry) of the responsibility to implement the State policy or a specific part of it. A deconcentrated institution has no policy of its own. It implements the State's policy. It is the State's conveyor belt of the central policy.
Decentralized institutions (with locally elected staff serving a locally adopted policy) and deconcentrated institutions (with State-nominated staff, implementing State policy) may cohabit in the same area (e.g. a regional assembly). The mayor of a municipality may be both a decentralized authority (when implementing the town council's policy and budget) and a deconcentrated authority (maintaining social peace and public order, or when marrying people in the name of the State).

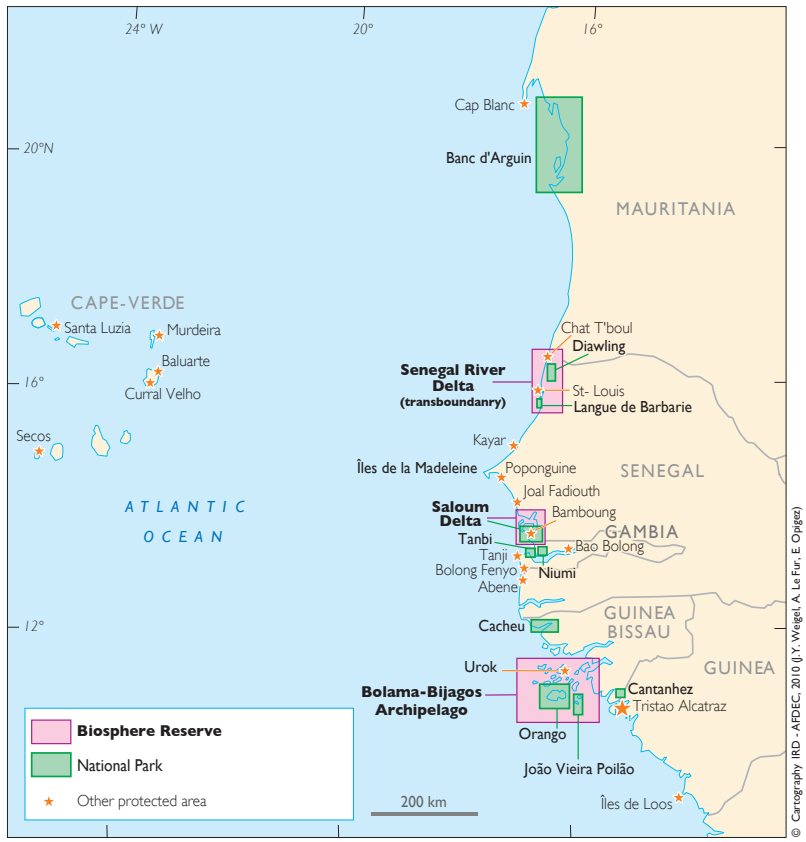
multiple actors (clanic, tribal, lineage and customary hierarchies; development brokers); specific sociocultural or legal standards (cosmogony, legal syncretism) and nodal points (council of elders, jamâ a). They can also be explained by the fact that the systemic analysis of MPA governance and the work on local governance or on governance indicators does not easily convey this complexity. Finally, these shortcomings could be explained by the dominance of normative hierarchical frameworks (not in line with good governance principles) that underestimate the complexity of MPAs governance, the need for a diversity of benchmarks and the difficulties in reaching consensus.

A methodology developed by researchers from the Institut universitaire d'études du développement (IUED – University Institute for Development Studies) partially mitigates these deficiencies in proposing a governance analytical framework intended to provide the foundation for a comparative and generalizable approach. Applied to MPAs, this methodology (combined with an approach based on interactive fisheries governance, risk governance and socioanthropology of mediations and brokerage) enables the development of an analytical framework for the governance of LDC MPAs that captures the complexity of interactions stemming from multiple and intertwined social and institutional organizations, the sociocultural characteristics affecting the formulation of norms, and the emergence of development brokers. This integration of new theoretical and methodological benchmarks marks a shift from environmental or fisheries science towards political science and developmental socioanthropology.

This analytical framework makes it possible to characterize the governance system for each MPA and to develop a typology of governance systems. The characterization of different governance systems highlights their weaknesses and paves the way for public policy options and, more generally, for the restructuring of governance to alleviate these weaknesses. The methodology was tested on three West African coastal MPAs that seemed to provide textbook cases to illustrate the difficulties of characterizing governance in LDCs. Features of these areas are the complexity of their social and institutional organizations and the strong human pressure that make appropriate governance particularly difficult to implement; they cover 27 000 km^2 for 170 000 inhabitants. The three MPAs are: the Banc d'Arguin National Park (in Mauritania), the Saloum Delta Biosphere Reserve (in Senegal), and the Bolama Bijagos Archipelago Biosphere Reserve (in Guinea-Bissau) (Map 2).

However, the elaboration of an analytical framework and characterization of the governance systems required, first, the highlighting of demographic and economic constraints, followed by the legal context of MPA governance in the LDCs. More precisely, in the West African context, the following constraints had to be analysed: increasing density and growing mobility of human populations; intensified resource exploitation; globalization of the economies of MPAs; international inspiration of objectives and protection procedures; and syncretism of the legal system.

MAP 2
Main coastal and marine protected areas in West Africa



Source: PRCM (2009).

THE AIM OF THIS PUBLICATION

This publication aims to present the result of a collective reflection process by social science researchers on an operational analytical framework for the governance of LDC coastal and marine protected areas, to characterize governance systems and to suggest appropriate public policy options. It is aimed at researchers and managers and was developed within the framework of FAO Fisheries and Aquaculture Department initiatives to promote a multidisciplinary reflection process on MPAs and fisheries management that would take into account LDC specificities.

The work reflects the wealth of empirical evidence and materials actively collected through cooperative arrangements, the breadth of the disciplines invited to contribute, and the analytical framework used. It is the scientific cooperation between researchers of the North and of the South and between researchers and managers of LDCs that has allowed the successful conduct of the reflection process. The disciplines involved include: law and political science, history and

sociology, economics and geography, ecology and statistics. The material was collected in four phases: (i) a bibliographical phase; (ii) a fieldwork phase in the form of a sample-based survey and village-based monographs, and research on the legal and regulatory framework;[10] (iii) a processing phase of surveys focused on the decision-making process, access and resource-use regulations, administrative and institutional processes, the creation and application of norms, and the demographic and economic situations; and (iv) an analytical phase, which generated the structure of this publication, covering issues related to MPA governance in LDCs, demographic and economic constraints on governance, the legal context, the analytical framework and the characterization of governance systems, and the restructuring of governance and public policies.

[10] Within the framework of the CONSDEV project, 75 habitat sites and 790 and 783 natural resource users were surveyed, 24 village monographies were produced; for sampling strategy and survey method used, please refer to Morand (2003) for data entry, Weigel *et al*. (2004) for data exploitation and CONSDEV (2003) for the statistics. Within the framework of the project Marine Protected Areas and Fisheries Management by Resource and Ecosystem Optimization (AMPHORE): 39 questionnaires including 85 percent of (village or sector) stakeholder representatives distributed across 14 villages on the perimeter of Bambourg community-based MPA included in the Saloum Delta Biosphere Reserve (Weigel, Schmitz and Fontenelle, 2009), 32 questionnaires including 70 percent of identified (village or sector) stakeholder representatives distributed across 8 villages in the Banc D'Arguin National Park (Weigel *et al*., 2009).

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