

Governance of marine protected areas in the least-developed countries

Case studies from West Africa



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Preparation of this document

This publication was developed within the framework of FAO Fisheries and Aquaculture Department initiatives to promote a multidisciplinary reflection process on marine protected areas (MPAs) and fisheries management that would take into account distinct issues in least-developed countries (LDCs). This work drew on the participation of the authors in this framework and at the workshop on MPAs and fisheries management held in Rome (12–14 July 2006), in the European research project Coherence of Public Policy of Conservation and Development of Coastal and Marine Protected Areas in West Africa (CONSDEV), and in the project Marine Protected Areas and Fisheries Management through Resource and Ecosystem Optimization (aires marines protégées et gestion halieutique par optimisation des ressources et des écosystèmes – AMPHORE) of the French national research agency (Agence nationale de la recherche, ANR) for which the MPA governance analytical framework was developed.

This work is based on empirical evidence and materials relating to cooperation arrangements and it reflects the methodology implemented by the various disciplines involved. Its successful outcome is the result of the scientific cooperation between researchers from the North and the South and between researchers and managers from LDCs.

The maps for this publication were provided by Anne Le Fur and Eric Opigez of the Institut de recherche pour le développement (IRD).

This work is an adaptation of *Les aires marines protégées d'Afrique de l'Ouest. Gouvernance et politiques publiques*, edited by J.Y. Weigel, F. Féral and B. Cazalet, originally published in French in 2007.

Abstract

The need for effective governance of the marine protected areas (MPAs) in least-developed countries (LDCs) is commensurate with the significant territorial stakes raised by their extensive maritime domain. Another significant challenge is the conservation of biodiversity and of ecosystems whose level of productivity is similar to that of coral reefs (e.g. in East Africa and Madagascar, the Red Sea, Maldives, Cambodia, and South Pacific islands), upwelling systems (e.g. in West Africa and Angola) and estuarine and delta ecosystems (e.g. in West and East Africa, Bangladesh and Myanmar). However, the overriding issue is to reconcile conservation and human presence as, in LDCs, human activities are tolerated in almost all MPAs covered by International Union for Conservation of Nature categories II–VI. Finally, issues related to identity claims and to the process of establishment of property and other legal entitlements on nature are gaining importance.

A review of the literature on fisheries and MPAs governance showed how polysemous and vague the notion of governance was until very recently and how few or oversimplified were the analyses of MPA governance in the LDCs. However, only detailed analyses would allow the characterization of governance systems and identification of their weaknesses with the view to suggesting new governance arrangements and appropriate public policy options. Such analytical deficiencies may be explained by the lack of analytical frameworks capable of taking into account the plurality and intricacy of socio-economic organizations and institutions, the sociocultural features and the role of new mediators and “development brokers” that shape MPA governance in the LDCs. The deficiencies may also be explained by the fact that the dominating hierarchical governance systems tend to underestimate the complexity of MPA governance systems.

Therefore, it has been necessary to develop an analytical framework to study the governance of MPAs in the LDCs, drawing on four sources of inspiration: (i) the interactive fisheries governance approach; (ii) the risk governance approach; (iii) the socioanthropology of mediations and brokerage; and (iv) the governance analytical framework. The framework indicates the five issues that must be addressed in order to operationalize the concept of governance in LDC MPAs: (i) definition of the problem or the issue at stake; (ii) identification of the set of relevant governance norms; (iii) presentation of the actors involved in the governance process; (iv) highlighting the nodes around which actors’ strategies converge; and (v) recalling the processes that have led to the current state of governance. This analytical framework makes it possible to characterize the governance system of each of the MPAs considered and to develop a typology of these systems. The characterization of different governance systems highlights their weaknesses

and paves the way for new public policy options and, more generally, for the restructuring of governance to correct these weaknesses.

However, prior to the development of the analytical framework and the characterization of governance systems, the main MPA governance principles and constraints, as well their legal context, must be clarified. The whole methodology was tested on three West African coastal and marine protected areas, which seemed to provide textbook cases illustrating the difficulties of governance in LDCs: 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. The analysis of demographic and economic constraints in these West African MPAs showed the importance of: (i) increasing population density and mobility; (ii) the intensification of resource exploitation; and (iii) the opening of the MPA economy. The analysis of the legal and institutional contexts showed the international inspiration of the MPA objectives and conservation arrangements, and the syncretism of the legal system.

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Abbreviations and acronyms

AMPHORE	Aires marines protégées et gestion halieutique par optimisation des ressources et des écosystèmes (Marine Protected Areas and Fisheries Management by Resource and Ecosystem Optimization)
CECAF	Fishery Committee for the Eastern Central Atlantic
CERTAP	Centre d'études et de recherches sur les transformations de l'action publique (University of Perpignan Via Domitia, France).
CONSDEV	Coherence of Conservation and Development Policies of Coastal and Marine Protected Areas in West Africa
FIBA	Fondation internationale du Banc d'Arguin (International Foundation for the Banc d'Arguin)
IBAP	Instituto da Biodiversidade e das Areas Protegidas (Guinea-Bissau)
IMROP	Institut mauritanien de recherches océanographiques et des pêches (formerly CNROP)
IRD	Institut de recherche pour le développement (France)
IUCN	International Union for Conservation of Nature
IUED	Institut universitaire d'études du développement
LDC	least-developed country
MPA	marine protected area
NGO	non-governmental organization
PNBA	Parc national du Banc d'Arguin (Banc D'Arguin National Park)
PRCM	Programme régional de conservation de la zone côtière et marine (Regional Programme of Coastal and Marine Zone)
PRODIG	Pôle de recherche pour l'organisation et la diffusion de l'information géographique, UMR 8586
RBABB	Réserve de biosphère de l'archipel Bolama Bijagos
RBDS	Réserve de biosphère du delta du Saloum
RESED	Recherche et études en sociologie et économie du développement
UMR	Unité mixte de recherche
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCPA	World Commission on Protected Areas
WWF	World Wide Fund for Nature

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1. Introduction

Jean-Yves Weigel, François Féral and Bertrand Cazalet

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).

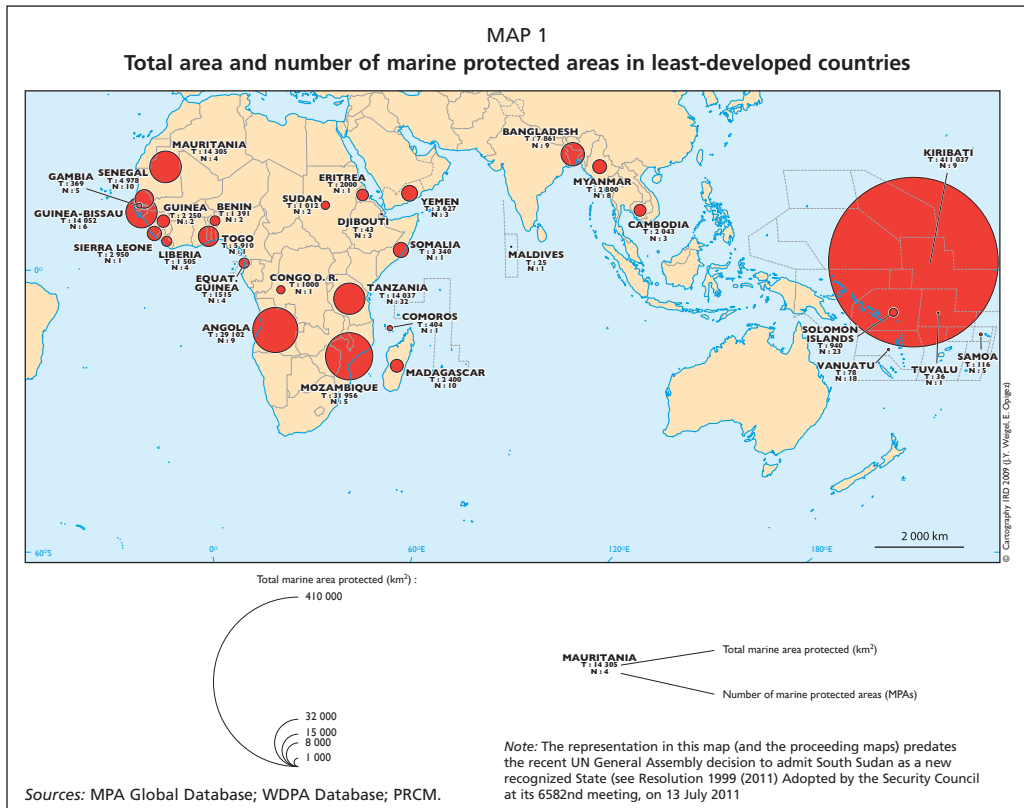
Some years ago, in proposing a social science research programme applied to MPAs and their governance, Christie *et al.* (2003) already stressed the importance of the political, social and economic issues expressed in the concept of governance, insisting on the fact that the social and political dimensions 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 Islands³ (Map 1).



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 nature⁶ 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 residents⁷ 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).

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 nor 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 deconcentration⁹ 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.

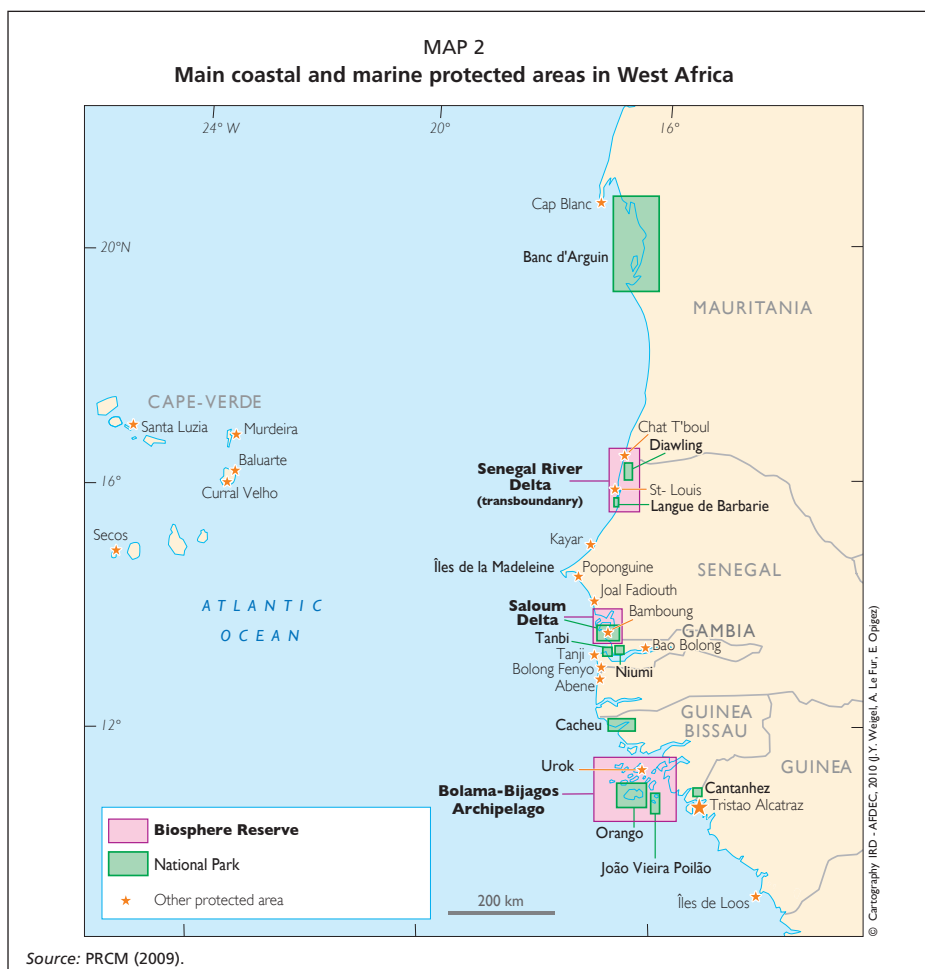
Decentralized institutions (with locally elected staff serving a locally adopted policy) and deconcentrated institutions (with State-nominated staff, implementing State policy) may cohabit in the same area (e.g. a regional assembly). The mayor of a municipality may be both a decentralized authority (when 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 km² 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.



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).

2. Marine protected area governance issues in the least-developed countries

François Féral and Bertrand Cazalet

Many examples show that the objectives assigned to MPAs can be ambiguous, even conflicting. Protected areas are often presented in LDCs as contributing to the conservation of nature and biodiversity and as a tool to overcome underdevelopment. For many years, this ambiguity had no impact on their legitimacy. However, today, the opportuneness and utility of conservation activities face some resistance and are being called into question. Misalignments between rhetorics, institutional practices and management strategies also raise new questions. This new context calls into question the institutional legitimacy of MPAs as it developed in the 1960s. Therefore, one of the first issues for MPA governance in LDCs is the clarification of the objectives assigned to them.

The protected area is not an end in itself but a public policy instrument. It brings significant social changes and is embedded in a particular institutional and social fabric. From a legal and institutional point of view, the protected area project consists in defining a territory with a particular status; it is explicitly indicated that the decision to do so, often centralized, is adopted looking to a project of general national and perhaps even international interest. In LDCs, these policies focus on rural areas where the populations are highly dependent on natural resources. The combination, or even the confrontation, of nature conservation and development policies (e.g. infrastructure, education, trade, health services, and communications) is not without many problems.

Therefore, a more realistic conception of MPAs must be advanced for more efficient governance – it requires synergy between development and conservation. By seeking the well-being of the populations involved as much as biodiversity conservation, the adhesion of the communities concerned by the project can be obtained. Their support is conditioned by the fact that, through the convergence between the conservation project and their own culture, local actors must be the first beneficiaries from the development policy. Such projects should not be undertaken in parallel with the development policy as if it were completely alien. Thus, synergy between conservation and socio-economic development is a fundamental issue in LDC MPA governance.

PRELIMINARY CLARIFICATION OF OBJECTIVES

A succession of ambiguous objectives

The specialist MPA literature distinguishes three main types of objective. The first is biodiversity conservation. Its positive impact is supposed to occur through: (i) a

“reserve effect”, subdivided into a “refuge effect” and a “buffer effect”; or (ii) a “spill-over effect” resulting in more abundant populations outside the protected area. The second objective is fisheries sustainability. The expected benefits are an increase in exploitable biomass and catches together with reduced uncertainty. The third objective is the promotion of non-extractive activities such as recreation and tourism, which allow economic value to be built on conservation benefits (Alban, 2003). Empirical evidence derived from numerous studies shows that the confusion between these objectives is more frequent and more significant in LDCs where an ongoing shift can be observed from natural resources and biodiversity conservation approach to a socio-economic development approach.

Another ambiguity in objectives is that the MPA is sometimes presented as a framework for sustainable development. The protected area would be a political action framework whose aim would not only be to contribute to species and biotope conservation but also to institutionalize a new type of ecological governance towards sustainable development.

Therefore, in order to assess the legitimacy of an MPA and the effectiveness of its governance, it is essential to clarify its objectives. Only then will it be possible to decide if the available management resources are appropriate and efficient in case a resistance to the creation of MPAs develops owing to the resulting upheaval in the livelihood, incomes and traditions of the poorest and most vulnerable populations. In LDCs, the assurance that resident human populations are not adversely affected is required more than elsewhere given the importance of their access to natural resources, which are often their main source of income. Looking for more efficient governance in LDC MPAs, the clarification of objectives brings to the forefront the importance of the goal of achieving synergy between the conservation project and socio-economic development. Emphasis should be placed on the conditions of this synergy that would lead to an appropriation of the conservation project by the resident – and adjacent – populations.

New questions and disagreements

For the last five decades, the formal establishment of protected areas has proceeded without too many difficulties. However, this was often done using a centralized and unilateral process. The MPAs were generally established at the request of the international community following lobbying by the scientific community (which can be seen as the mediator and sponsor of the conservation project). In LDCs, it is quite possible that the populations and public policy-makers involved did not fully realize the scope and the content of the measures accompanying the creation of these administrative circumscriptions called MPAs. Today, in LDCs, it is more difficult to impose on the various actors a protection coming down from the top, given the often difficult relationship between civil society and the State apparatus.

The creation of protected areas is now a long and drawn-out process that generates greater and greater opposition from populations and some actors. Furthermore, the populations involved still do not really understand the meaning and scope of zoning and protection operations. The MPAs may sometimes result

in upheavals in the livelihoods, incomes and traditions of the poorest, most vulnerable and forgotten populations on the planet, while perverse effects such as poaching and seasonal migrations can destabilize societies. As shown below, the effective implementation of protection measures raises logistic and political difficulties.

A gap between the institutional statement and the intentions of actors

Often, the dominant discourse is that the MPA is established in the interest of the populations who live in it, some even speak of a “real chance” for the indigenous people. However, the surveys carried out in West Africa by the authors of this case study show that those most concerned are not necessarily convinced by these arguments and are unaware of the scope and the meaning of these operations. Motivations differ among actors involved. Fishers, traders and artisans, tourism operators, central authorities, local dignitaries and associations for nature conservation do not have the same perception of the operation (CONSDEV, 2003).

There is a contradiction between the positive portrayal of the conservation operation and the resulting changes in habits, traditions and lifestyles of the interested parties. Moreover, the sudden intrusion of technical and scientific assistance and the constitution of a parallel administration can raise the concerns of officials and fuel the greed of the most opportunistic actors. Changing power relationships can be a significant issue for village chiefs, mayors and deconcentrated administrations. Who is to decide and how are they to decide about the future of the village, the family and the business? What will the rules be?

Decentralized or civil-society institutions are not more problem-free than centralized ones: The bureaucratic phenomena are then replaced by the development of administrations that are remote from national policies. These programmes and interventions can even be perceived as being outside of the usual political field, implementing actions that bear no relation to national development projects. If decentralized administrations are given responsibility for managing these areas, they quickly run out of means and become dependent on international technical assistance.

CONFIRMING THE ROLE OF MPAS AS POLICY INSTRUMENTS

The MPA as a vector of social and policy change and of contradictory aspirations

For the decision-maker, the legal expert and the administrator, MPAs normalize a socio-economic space according to objectives formulated, in most cases, by the State within the framework of international agreements. They appear as a process to extend state control on social and economic spaces. However, the different societies who have been populating these spaces, sometimes for very long times, are based on very different traditional societal organizations with their own conception of resource access and exploitation, representations, and principles for distribution of wealth and constraints.

The creation of an MPA regulates space and redefines wealth according to scientific principles, with conservation priorities that can be consensual among elites but can rapidly be distorted by many factors. Conservation regulations put pressure on local populations and, in the end, putting into place protected areas induces a certain “violence” whose economic and psycho-sociological impact should not be underestimated.

Without questioning their political legitimacy, analyses of marine or terrestrial protected areas reveal the following problems. First, repressive policies may accompany the creation of a protected space, to turn it into a space with special regulatory administration and normalize its access and the exploitation of its resources. Second, the MPA administration becomes a new actor in the social life of the area, in various ways that modify significantly the socio-economic landscape. Third, the creation of a protected area accelerates its internationalization and opening to the modern world, which, paradoxically, generates new exogenous pressures – from ecotourism, research programmes, international trade, promotional visits, and commercial media coverage. Such issues call for a new approach to LDC MPAs that need to be necessarily integrated into the development process.

Conservation policies have long been based on a naturalistic vision of marine areas, implicitly excluding the human populations from related projects. However, LDCs populations are not excluded from the global change dynamics. Owing to the multiplication of market information and of consumption models, commercial opportunities are often more powerful and numerous than ecological discourses of moderation. Populations face conflicting aspirations. While worrying about their identity, they seek to improve their well-being and are attracted by models of economic success. Therefore, MPA space and wealth are part of complex economic games. The dominant discourse on conservation and economic moderation tries to convince such populations to maintain their meagre subsistence economy, but, in contrast, it is accompanied by considerable logistic and financial resources for science and conservation.

Diversity and complexity of the institutions involved in MPA governance

Many institutions are involved in MPAs. Their density clouds governance transparency in conservation activities and accompanying policies. Legal experts involved in the analysis of these institutions are sometimes lost in the inextricable “administrative layers”. However, the complexity resulting from the multiplication of institutional actors is not the only issue. Conflicts of interest as well as the absence of leadership and of clear objectives also contribute to the lack of institutional transparency. In fact, the administrative characteristics of LDCs are mimicked in MPA administrative processes notwithstanding the NGO programmes with “offshore” administrations and ad-hoc institutions. The latter take the form of delegated programmes, institutions created at the edge of government bureaucracies, and comanagement arrangements in collaboration with public or private partners.

The generic term “protected area” covers very different realities in the LDCs. First, it refers to different management systems, as shown by the multiple institutional statuses and very different socio-economic and ecological situations encountered. Second, the rules applied to these areas and the methods used to develop and implement them are determined by very different organizational systems and sets of norms. In such conditions, several factors must be taken into consideration in order to establish a typology of the institutions in charge of MPAs and to clarify the issue of their functional diversity: (i) the degree of societal development and of efficacy of the administrative structure, the legal nature of territorial circumscriptions defined by the texts establishing the MPAs, and the management structure selected to organize these areas, regulate them and implement the related constraints; and (ii) the relationship with the State offices, often responsible for the creation of these areas and possibly for the direct support to regulations implementation as well as for the relationship with local authorities in the territories where protected areas are established. Third, the relationship with nature conservation non-governmental organizations (NGOs) or foundations that support these operations and may substitute for public authorities, using their own funds and technical assistance, must be considered.

Difficulties facing the least-developed countries in relation to MPAs

Administration of an MPA creates several difficulties in LDCs. First, it represents a serious financial and administrative burden as MPAs are costly in terms of administration and monitoring, especially as international recommendations call for their “scientific monitoring” and “participatory governance”. Ministerial administrations are required to concentrate more particularly on these areas. An MPA is, therefore, an area where surveillance is strengthened, requiring more resources and administrative support. The effort is all the greater in that the administration advocated for these areas rests on modern management methods with resources and procedures that are unusual in LDCs. Deconcentration without appropriate resources and capacities to control and constrain forces local government officials to improvise the local public action. Negotiations in the field, between the administration and the actors, become the deconcentrated mode of action.

There is also the difficulty of rallying populations when changes likely to affect their traditions, lifestyles, and incomes are imposed upon them. Their support is all the more difficult to obtain in that constraints are imposed in the name of a public interest that is difficult for them to decipher.

THE SYNERGY BETWEEN CONSERVATION AND SOCIO-ECONOMIC DEVELOPMENT

The need for a more realistic approach

The legal establishment of a protected area leads to the adoption of a set of public decisions and the definition of new strategies established by civil society and the administrative apparatus in a dialectic relation over power takeover and sharing of

new rights and obligations. This corresponds in some sense to a redistribution of societal, political and economic cards in the process of redefining the area.

An MPA project must realistically face the fact that it may cause legitimate misunderstandings and resistance. However, it would also be inappropriate to deny the modernity of the resident populations of the protected areas, their appetite for consumption and change, and the attractiveness of the market and Western models. Therefore, in its relationship with MPA actors, public action for conservation progresses along a narrow line of, on the one hand, resistance to change and, on the other hand, aspirations for globalization types of lifestyles standards.

Population support for MPAs

The protected area containing or surrounded by human populations must combine conservation and development requirements, but the development dimension of MPAs is often absent from conservation projects. If development is not explicitly planned, the market (for natural resources, tourism, science and media), in a context of local economy deregulation, will usually determine its dimensions in the MPA project.

Under these conditions, the scope of regulatory interventions – usually limited to policing fishing, gleaning and hunting operations – puts the conservation burden on the weakest human strata and seems too limited to ensure conservation. Resident populations' aspiration to "well-being" should be considered a mandatory element of the conservation project. If conservation and community well-being went hand in hand, the regulatory constraints associated with MPAs might be more readily accepted.

An approach should focus on the conditions required to integrate the issue of development into the conservation project so that local actors can appropriate the implementation of resource conservation. However, this would imply that customary rights regulating access be recognized at least in the principles if not in their modalities. It is on this basis that dialogue should be opened between biodiversity conservation promoters and the local population, given that, when they are not destabilized by NGO interventions, the government or the market power, community systems of discipline seem to be the most efficient and least costly for the community.

Convergence of local and scientific cultures

The public action project of establishing an MPA is heavily inspired by the conservation scientific community and international pressure and does not have automatic local legitimacy (Marril, 2006). In these conditions, the project promoters must promote convergence between the conservation project and the culture of the populations that are being asked to discipline their practices. In theory, anthropological approaches and social science studies are supposed to make that link and inform managers of the representations, the discipline mechanisms and the ethical values of the populations concerned by the change in

the status of their domestic and traditional space. However, it is undeniable that, while natural science data are overabundant, systematic studies on the human or socio-economic dimensions are relatively absent. Yet, the manager's work aims at matching conservation objectives with the populations' aspirations and principles and this requires that the history and the condition of these populations be scientifically studied. Nonetheless, poorly informed external interventions have been widely observed – by overvaluing certain actors in the communities, such interventions may destabilize societal mechanisms and promote damaging opportunism.

Local actors as the main beneficiaries of an MPA

Notwithstanding the difficulties, the effects of nature conservation policies must benefit the residents, otherwise their positive participation in the conservation project cannot be assured. The principles of distribution of wealth and its appropriation by the communities should be the minimum counterbalancing benefit that populations should expect in exchange for the expectation to control (discipline) their natural resource exploitation practices. Protection against market excesses must also be included in the reflection process, given that the poorest and most vulnerable residents are asked to make efforts while significant wealth is created in the wake of MPAs, often without any consideration of the distribution and solidarity principles governing these groups and explaining their relative productive moderation. For example, banning shark fishing in the Banc d'Arguin National Park illustrates the gap between managers and populations – while fishing for sharks is permitted everywhere around the national park, the Banc's fishers are controlled and subject to special exploitation conditions that hinder their income opportunities. These strategies reveal a lack of coherence between policies inside and outside the MPA.

The consequences of the shortcomings of LDCs for MPA governance

A project for the conservation of natural resources and biodiversity in LDCs cannot be detached from their weak institutional environment; indeed, such a project would highlight contradictions and difficulties. The three most important West African coastal and marine protected areas illustrate, in different ways, the absence or deficiencies of the government, responsible in the first instance for these territorial policies agreed in front of the international community. These shortcomings take different forms in MPAs. First, the inability of the State to intervene directly in these projects, illustrated by the process of implicit delegation of responsibilities to international programme operators, results in derogation-type procedures and the bypassing of normal institutions. Second, because of the low level of resources available to local authorities to achieve the objectives for the protected area, the bulk of official administrative action consists of rhetoric and the production of formal regulations. Third, the negotiation procedures with local actors for the enforcement of laws drafted by the administration are far from being transparent or coherent. Fourth, there is little or no coordination between

administrative interventions and competition among services to monopolize skills, resources and control over resources or populations.

Although these shortcomings could also apply to other LDC administrations in more politically sensitive sectors such as health, education and infrastructure, the aggravating factor in MPAs is that their implementation requires costly and sophisticated administrative methods that contribute only indirectly to development. The MPA establishment requires scientific monitoring and data-based management, and data requiring logistic and financial effort and high-level technical skills. Must it be concluded that LDCs will have to delegate their sovereignty over these protected areas to external operators in order to meet their environmental responsibilities? This is what has been highlighted by the present work on West Africa. The MPAs can only be somehow operational with the financial and logistic contributions of developed countries with, as a result, the marginalization of administrations that are not in a position to fulfil their mandate. These observations mean that proposals to restructure LDC MPA governance are required.

3. Demographic and economic constraints on MPA governance in LDCs

Jean-Yves Weigel, Bozena Stomal, Jean Schmitz, Pierre Morand, Mohamed Ould Saleck and Alfredo Simao Da Silva

Governance of MPAs in LDCs, especially the regulation of access to resources, faces demographic constraints related to the increasing density and mobility of the resident or neighbouring populations. The densification is caused by one of the highest birth rates in the world; for example, in West African LDCs, this rate implies a doubling of the population every 25 years. The increase in mobility during the last 30 years can be explained in part by the expansion of fishing capacity and more specifically by the increase in the number of boats and their motorization.

This governance also faces two main economic constraints related to deregulation. The first one is the unchecked increase in natural resources exploitation in fisheries, forestry, agriculture and agroforestry. Deregulation has resulted in a drastic reduction in management instruments and weakening of public administrations, which no longer have the resources needed to control the intensification of resource exploitation. This illustrates the waning economic role of governments and the lack of public management. The second economic constraint generated by deregulation concerns the economic extraversion of the MPAs or their periphery, reflecting their submission to market logics and their integration into the globalization process. While this constraint concerns all the LDC rural populations, the “indigenous” approach to MPAs has often tended to underestimate or ignore its impact on MPA inhabitants.

POPULATION DENSIFICATION

Natural growth in the resident human population is not specific to coastal and marine protected areas, but it is, generally, a feature of the demographic context of LDCs. On the one hand, the birth rate has remained high while, on the other hand, the mortality rate has decreased significantly as a result of, *inter alia*, vaccination campaigns that reach isolated areas (albeit imperfectly). However, the protected areas discussed have a noticeably higher mortality rate than the rest of the country, except for the Banc d’Arguin National Park, which is in line with the national average.¹¹ Mortality is high as these isolated areas lack basic sanitary

¹¹ The growth rate in the resident population in the coastal and marine protected areas taken into account was estimated at 3.5 percent in 2003: 4.5 percent for the Banc d’Arguin National Park, 3.7 percent for the Saloum Delta Biosphere Reserve, and 2.8 percent for the Bolama Bijagos Archipelago Biosphere Reserve. For all the coastal and marine protected areas taken into account, the birth rate was estimated at 4.7 percent in 2003: 4.2 percent for the Banc d’Arguin National Park, 4.8 percent for the Saloum Delta Biosphere Reserve, and 4.7 percent for the Bolama Bijagos Archipelago Biosphere Reserve (CONSDEV, 2003).

infrastructure and health care; in particular, evacuation of patients towards the nearest urban centres is difficult.

The positive migratory balance observed in West African coastal and marine protected areas shows how attractive they are in LDCs. This attraction can be partly explained by the significant immigration of the peripheral or distant rural populations, attracted by natural resource exploitation opportunities in and around the MPAs. In 2003, the migratory balance in all the coastal and marine protected areas in West Africa was estimated at 0.6 per 100 inhabitants (CONSDEV, 2003). However, this immigration rate is not different from that going to urban centres or western Europe, in the classical pattern of West African rural exodus. This positive migratory balance is particularly significant in the case of the Banc d'Arguin National Park, where it was estimated at 1.8 per 100 inhabitants. It is confirmed by the residents' place of birth, with three-quarters of them born outside the park and one-quarter of them having come into the Park less than ten years ago, primarily to fish. In this protected area, the number of long-term immigrants, four-fifths of whom came in to fish, is five times higher than the number of long-term emigrants (CONSDEV, 2003; Mohamed Ould Saleck, Limam and Weigel, 2005).

However, population densification within a given coastal and marine protected area is not homogeneous. In fact, several non-exclusive densification criteria can be noted. The first criterion relates to the ease with which resources can be accessed and fishery products can be transported outside protected areas, by road or by sea. The second criterion relates to the proximity of equipment facilities or specific infrastructure built by development programmes, in particular fisheries programmes (ice plants, landing docks, processing areas, etc.). The third criterion relates to natural conditions, such as the availability of fish or forest resources or arable land. The fourth criterion is the proximity with the MPA, as communities in "bordering" locations can benefit from the MPA but escape restrictions applied in protected areas.

INCREASED POPULATION MOBILITY

Mobility is principally expressed in terms of seasonal migration, which, in coastal and marine protected areas, takes three main forms. The first form may be called offshore mobility, is characterized by the fact that the fisher's home port is located outside the protected area in which fishing will be eventually conducted, and the functional autonomy of the fishing unit is such that there is practically no need for any contact with the land within the MPA, thus avoiding the controls on access to the protected area and its resources. The second form, internal mobility, is the seasonal migration of residents within a protected area with the view to ascertain their territorial claims and indigenous status. The third form is the seasonal or longer migration of non-residents, the scale of which confirms the attractiveness of protected areas. These three forms are discussed in more detail below.

The first notable form of seasonal migration in LDC coastal and marine protected areas, offshore mobility, is a typical example of the "protected area effect" insofar as its major goal is to avoid the regulations protecting the area.

It is a kind of bypass strategy. This seasonal migration involves operationally autonomous fishing boats that do not have to land their catches in the MPA and can avoid constraints related to resource access and exploitation. Their bases are located along the edge of national parks or biosphere reserves in order to cut access costs to much-coveted resources while avoiding onshore constraints, possibly with the complicity of members of the relevant administrative services. The most obvious West African examples being large-scale fishing by the Niominka and Lebou in the Bolama Bijagos Archipelago Biosphere Reserve in Guinea-Bissau from Ziguinchor in the south of Senegal (Box 1), or motorized artisanal fishing

BOX 1

Transborder offshore artisanal fishing, Casamance (south of Senegal) – Bijagos Archipelago (Guinea-Bissau)

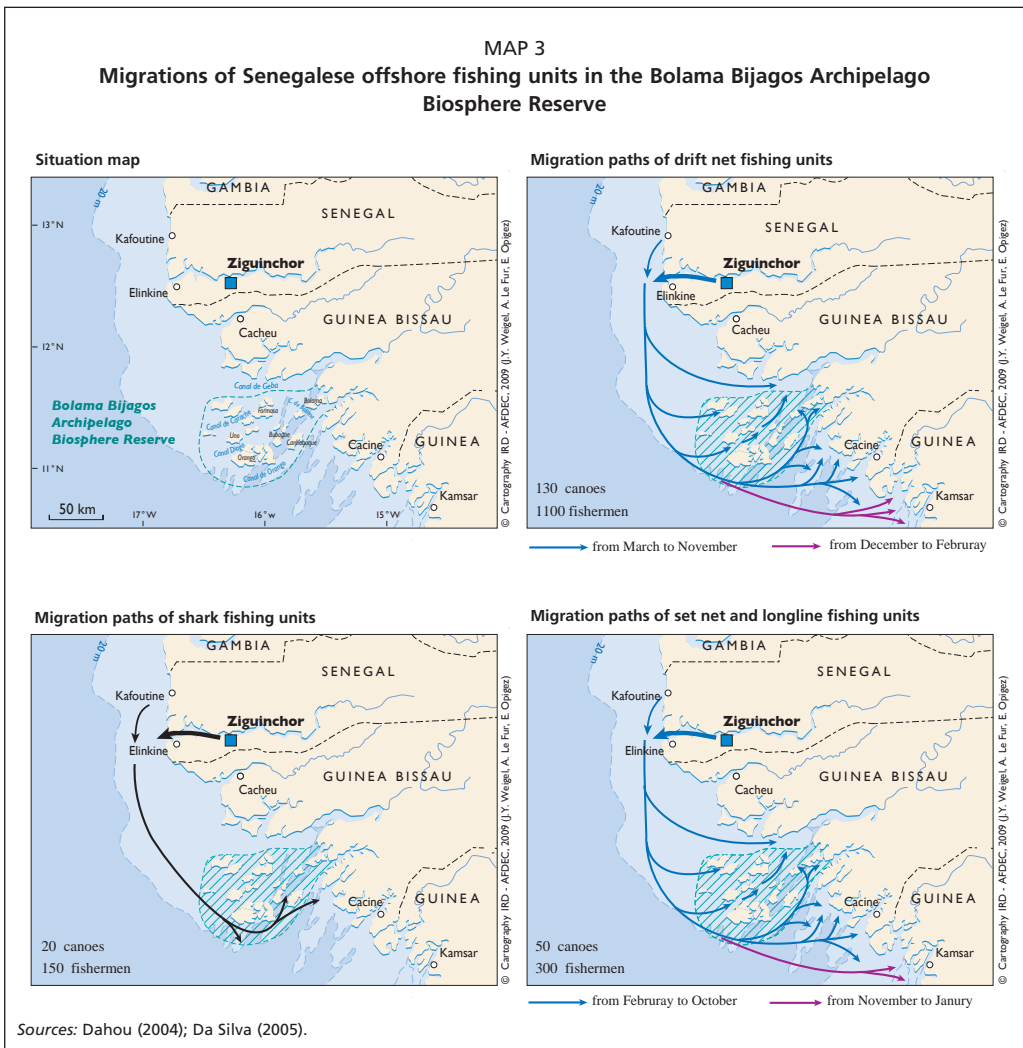
Alfredo Simao Da Silva

The network of transboundary, large-scale, artisanal fisheries in the Bolama Bijagos Archipelago Biosphere Reserve (Guinea-Bissau) is based in Ziguinchor and, to a lesser extent, in Elinkine and Kafountine in Casamance (Senegal). It comprises 20 m canoes with a maximum load capacity of some 30 tonnes, fitted with one or two 40 horsepower engines, using driftnets, set nets or lines. These technical characteristics mean that there is practically no need to land in inhabited parts and that catches can be landed at the home port of Ziguinchor. In 2004, this offshore network consisted of 200 very large fishing canoes, i.e. more than 1 500 fishers operating in the Guinea-Bissau exclusive economic zone, in particular in the Bolama Bijagos Archipelago Biosphere Reserve, renowned for its abundant fish resources, representing a solution to the overexploitation of Senegalese waters. Three main types of fishing may be distinguished (see map).

The most common type is driftnet fishing, the dominant activity for some 130 canoes and 1 100 fishers, for the most part Niominkas from the Saloum Delta islands. They target species of high commercial value such as barracudas, threadfins (*Polynemidae*), jacks (*Carangidae*, etc.) that can be found in different fishing zones depending on the season and require trips of 8–10 days.

Fixed net and handline fishing are the dominant activity of about 50 canoes and fewer than 300 fishers, for the most part Lebois coming from the Cape Verde peninsula or St Louis in Senegal; while fixed net fishing targets principally soles, line fishing focuses primarily on sea breams, African red snappers and groupers in fishing zones that are practically the same as those of driftnet fishing. Only about 20 Niominka fishing units with 150 fishers continue to fish for sharks (there were more than 50 in the 1990s according to Dème and Diadhiou [1990]). This fishery is prosecuted all year round. It involves three-week trips during which the fins and other catches are kept salted. Overexploitation of the various shark and ray species explains the decline in the size of the specialized fleet despite the steady increase in fin prices

Sources: Dahou (2004); Da Silva (2005).



from towns (Mamghar and Nouadhibou) located near the Banc d’Arguin National Park in Mauritania.

The second notable form of seasonal migration in LDC coastal and marine protected areas is the internal mobility of the residents (Box 2), who, in this way, reaffirm their territorial claim over fishing grounds and fishing itineraries or transhumance over the claims of non-residents (seasonal or longer-term immigrants); the “resident” status is another expression of this claim for indigenous rights. This mobility is related to the history of the settlements in these areas and of the emergence of affinities and geopolitical entities. Residents’ claims are grounded principally on ancient migratory patterns based either on territorial “proximity” of fishing or grazing itineraries, or of agricultural land, or on geopolitical affinities dictated by family, clan or tribal ties. Population densification leads to increased mobility, which results in the increased occupation of ancient but little-used

BOX 2

Inter island mobility of the residents of the Bolama Bijagos Archipelago Biosphere Reserve*Bozena Stomal and Alfredo Simao Da Silva*

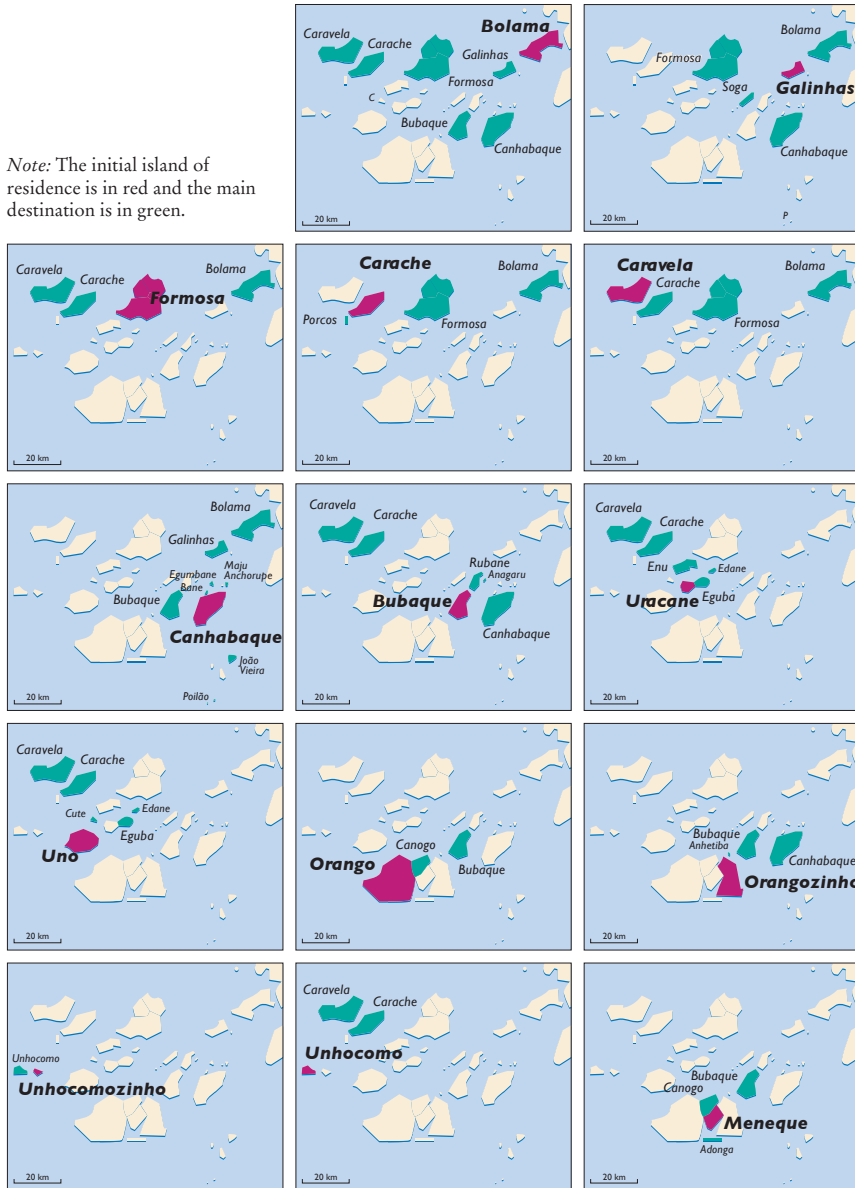
Residents' internal mobility relates to the "proximity-based" territorial claim of a village over an island or part of an island. Nineteen villages of the archipelago claim land rights over islets or parts of islands with the view to develop seasonal farming or fishing activities or else negotiate the establishment of tourist facilities. However, the interisland mobility is not limited solely to this proximity-based territorial claim as it is also organized according to clanic affiliation. Each Bijogo belongs to one of the four matrilineal clans (djørçon) of the archipelago (Oraga, Oracuma, Ogubane and Ominka). This connection contributes to structure family ties and hence to broaden internal mobility on the basis of five geocultural and linguistic Bijogo entities: the first one concerns the islands of Bubaque and Canhabaque; the second one consists of the islands of Soga and Galinhas; the third comprises ten islands situated in the south of the archipelago (Orango, Orangozinho, Canogo, Meneque, Imbone, Unhocomo, Unhocomozinho, Uno, Uracane and Eguba); the fourth is the island of Formosa; and the fifth covers the islands of Caravela, Canache, Nago and Chedia (Cardoso, 2002). Such strong traditional internal migrations can be explained by the dynamism of ancestral production systems as traditional activities such as paddy-field or slash-and-burn rice cultivation (47 percent), palm wine tapping (9 percent), straw gathering (8 percent), palm plantation work (4 percent) and agriculture (4 percent) still employ three-quarters of resident seasonal migrants. However, new economic opportunities, such as the picking of cashew nuts (13 percent) from plantations of the cashew tree (*Anacardium occidentale*) and to a lesser extent, fishing (9 percent) and tourism (3 percent), already employ one-quarter of the resident seasonal migrants and a much higher proportion of non-resident seasonal migrants (CONSDEV, 2003). These activities are beginning to change traditional patterns, with a growing importance of cashew nut plantations especially in the islands of Carache and Caravela and that of fishing in Uno and Uracane. The main interisland migratory patterns of residents are shown on the accompanying map.

fishing or agricultural areas and sometimes even to seasonal camps becoming permanent settlements. New opportunities related to market demands and trade liberalization also contribute to this increase as they promote the development of new insular migratory patterns. This pressure increases the stakes for control of territories also claimed, in particular, by non-residents, and contributes to an increase in the mobility of residents with the view to reaffirm their own control over the spaces concerned.

The third notable form of seasonal migration in LDC coastal and marine protected areas, the seasonal migration of non-residents (Box 3), shows the attraction exerted by MPAs. Like the internal mobility of residents, it can claim to follow ancient

MAP 4
Main seasonal inter island migrations of residents in the Bolama Bijagos Archipelago Biosphere Reserve

Note: The initial island of residence is in red and the main destination is in green.



Sources: CECI, MDRA-DGF-UICN (1991); Da Silva (2003); CONSDEV (2003); Stomal and Bai (2004).

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migratory cycles and itineraries. Overall, the flow of non-resident seasonal migrants towards protected areas is higher than the flow of resident seasonal migrants out of them. Non-resident seasonal migrants prefer activities related to new fishing opportunities or market openings leading to their exploitation of any possible new

BOX 3

Seasonal migration of non-resident Subalbe fishers in the Saloum Delta Biosphere Reserve*Jean Schmitz*

The seasonal migration of Subalbe shrimp fishers in the Saloum Delta is a good example of seasonal migration of non-residents insofar as it shows that coastal and marine protected areas are features of the migratory pathways of migrant communities that are increasingly settled in multiple locations. The “multilocalization” of Subalbe fishers’ activities covers three distinct areas: (i) an agricultural homebase in the Senegal River valley; (ii) home ports all along the Gambia Estuary (Essau, Banjul and Albreda); and (iii) the shrimp fishing grounds in the Saloum Delta Biosphere Reserve. The comparative advantage of the reserve for Subalbe shrimp fishing enterprises only lasts for three months, from the end of August to the beginning of December. The monitoring of Subalbe fishing enterprises based in the Gambia has highlighted their significant mobility in three periods (Herry, 2003): (i) roughly, from mid-March to mid-August, fishing enterprises, all based in the lower part of the Gambia Estuary in Essau, Albreda or Banjul go up to 150 km upstream as far as Kaur; (ii) from the end of August till the beginning of December, half of the fishing enterprises travel to the intermediate part of the Saloum Delta Biosphere Reserve between Ndangane and Foundiougne and the other half travel towards the lower part of the estuary; (iii) finally, from mid-December to the beginning of March, almost all the fishing enterprises return to their home ports in the lower part of the Gambia River Estuary (see map).

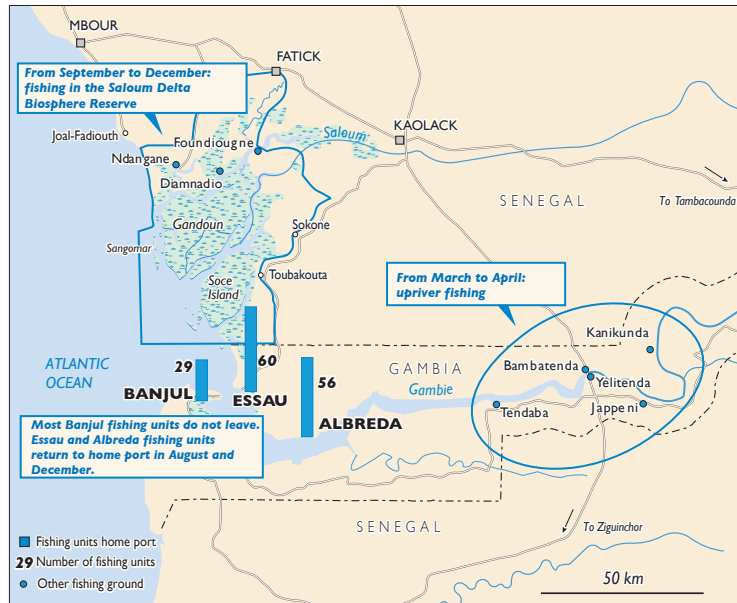
Subalbe migrants are organized into fishing companies that, on average, consist of six men including the company leader and operate a motorized canoe capable of towing several smaller ones. The company leaders, as owners of the motorized canoe and sometimes also of the individual canoes of young fishers, decide and allocate the fishing effort and negotiate resource access with local or administrative authorities, including inside the protected area. Thanks to their common understanding, company leaders control the various anchorage points along the estuaries and organize the migratory cycles and fishing pathways, including in the Saloum Delta Biosphere Reserve, according to a community-based organization of migration characterized by the multiple locations of the lineage segments to which they and the fishers belong.

niche. This opportunistic strategy calls for diversification, e.g. of the range of fishing gear and sites in order to adapt fishing to the seasonal distribution of the resource.

INCREASED EXPLOITATION OF NATURAL RESOURCES

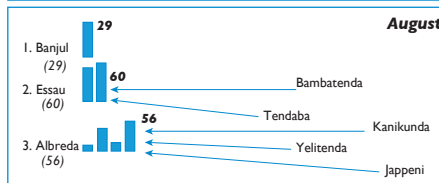
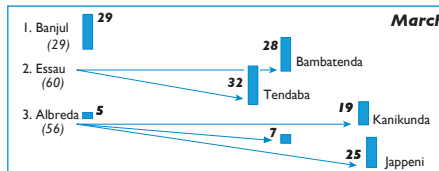
The unchecked increase in exploitation concerns fishery, forestry (lumber, fuelwood and charcoal) and even agricultural or agroforestry resources (cashew trees and oil-palms). In the case of fishery resources, the increased exploitation is the result of the development of artisanal fisheries, amplified by the many projects funded within the framework of bilateral or multilateral aid to LDCs. At the

MAP 5
Seasonal migrations of Subalbe fishers in the Saloum Delta Biosphere Reserve

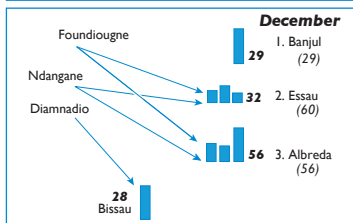
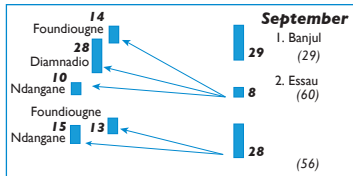


Sources: Herry (2003); Weigel et al. (2001); Schmitz (2003).

Upriver Gambia



Saloum Delta



periphery of coastal and marine protected areas, and sometimes within them, these projects have often promoted a so-called “artisanal” fishery actually following a semi-industrial logic, as shown by the West African example, with: (i) fishing units more than 20 m long, powered accordingly; (ii) enough onboard storage capacity to allow trips of several days; (iii) nets that may be more than one kilometre long; (iv) catches processed and marketed beyond the local level; and (v) crews that are dependents of boat owners or fishmongers (Weigel, Féral and Cazalet, 2007).

This development of artisanal fisheries at the periphery and within LDC coastal and marine protected areas has led to a considerable increase in fishing effort, in ways that differ between areas. In the West African case, this includes: higher number of fishing trips, diversification of techniques (Box 4), and increase in both artisanal fishing and processing capacity (Box 5).

BOX 4

Increasing fishing trips and diversifying techniques in the Banc d’Arguin National Park

Jean-Yves Weigel and Adelkader Mohamed Ould Saleck

Fishing in the park is characterized by: (i) a limit on the number of fishing craft (“lanches”) powered by lateen sails to about 90 units; (ii) a limit on the number of motorized canoes based in Mamghar; (iii) the banning of some types of fishing gear or techniques; and (iv) the restriction on the number and length of nets carried on board. As regards fishing effort, the near total ban on motorized fishing vessels and the use of sail power can be seen as an emblematic success for the protection of the fish resources of the Banc d’Arguin National Park.

However, this apparent success must not hide the fact that, since the creation of the park, there has been an increase in fishing effort. The absence of any restriction on the number of fishing trips and the diversification of types of fishing gear led to an increase in catch of about 90 percent between 1998 and 2006, now exceeding 2 000 tonnes (CNROP, 2000; IMROP, 2004; Boncoeur, Roncin and Kane, 2009). In addition, the non-governmental organizations and bilateral cooperation organizations, heavily involved in funding and managing the park, are responsible for having distributed unselective gillnets for capturing meagres – responsible for the bycatch of sharks and rays – as well as sea bream and sole nets, fishing lines and preservation equipment (ice boxes) within the framework of a reorientation of fishing effort away from sharks and rays and towards the meagres and other demersal species.

The result of this diversification is that fishing activity is now sustained all year round. Seasonal mullet fishing from July to January is followed by fishing for meagres (with bycatches of sharks and rays) and giant guitarfish. Then sole, gilt head, red sea bream and grouper fishing fill the gaps in lean periods. Finally, diversification has resulted in a geographical redistribution of the fishing effort to the benefit of some villages (Arkeiss, Agadir and Teichott) and to the detriment of others (R’Gueiba, Mamghar and Iwik)

Source: Weigel, Féral and Cazalet, 2007.

BOX 5

Increase in artisanal fishing and processing capacity: the case of the Saloum Delta Biosphere Reserve*Jean-Yves Weigel*

The increase in fishing effort in the Saloum Delta Biosphere Reserve reflects not only an increase in fishing capacity (with the increase in the number of motorized fishing vessels and gear) but also increased artisanal processing and trading capacity. A comparison of the last two censuses carried out in 1999 and 2003, respectively, in the main fishing grounds of the reserve and its close surroundings shows that, in four years, there was an increase of 12 percent in the number of motorized boats and of 17 percent in fishing gear and 15 percent in the number of fishers during the dry season (Dème, Diadhiou and Thiam, 2000; CONSDEV, 2003). Thus, in the 2003 dry season, the number of fishing units was estimated at 3 500, the number of fishers at about 6 000 and that of women gathering oysters and shellfish at 2 000. The fishing units operate from almost 100 villages and fishing camps. The increase in fishing capacity relates to the diversification and the versatility of fishing units as there are no fewer than 20 “metiers” (a French term broadly equivalent to “fishing strategies” and relating to practices involving the deployment of a specific gear, in a specific area, during a particular season, to target a given species or set of species and sizes) in the Saloum Delta Biosphere Reserve depending on bio-ecological and seasonal factors (Boussou, 1996; Dème, 2004). One intensification factor has been development aid that has contributed significantly to the increase in fishing capacity by funding development projects in the delta or its immediate surroundings, or by funding for mutual savings and loans institutions (e.g. as provided by some international non-governmental organizations).

In the Saloum Delta Biosphere Reserve, increased artisanal processing and trading capacity contributes to the increase in fishing effort insofar as it leads to increased opportunities for value-added fisheries products. Indeed, the artisanal fish-processing system continues to employ the great majority of female workers (estimated at more than 2 000). In this sector too, development aid has contributed to increased trading capacity through the funding of ice-making plants in Missirah and Djifère and of a shrimp processing factory in Foundiougne in 2003 (Dème, 2004); it has also helped to develop artisanal processing, for example in Diamnadio, on the periphery of the reserve (downstream from Foundiougne) by funding smoking and drying facilities (see map).

ECONOMIC EXTRAVERSION OF MARINE PROTECTED AREAS

The opening of coastal and marine protected area economies is reflected by the value of its “exports”: fish (fresh or artisanally processed), cashew nuts, palm oil, and lumber. In the West African case, a conservative estimate of these exports amounted to EUR13 million (about US\$16 million) (Mohamed Ould Saleck, Limam and Weigel, 2005; Weigel, 2005; Duarte *et al.*, 2005). Such exports from

MAP 6
Main fisher and fish-processing villages and settlements in the Saloum Delta Biosphere Reserve



-  Saloum Delta National Park (gazetted in 1976)
-  Saloum Delta Biosphere Reserve (gazetted in 1981)
-  Saloum Delta Biosphere Reserve Management Plan Area
-  Main villages (more than 2000 inhabitants)
-  Main fishers villages (more than 2000 inhabitants)
-  Main fishers settlements (more than 100 fishing units)
-  Main fish processor settlements (more than 100 processors)

Sources: CONSDEV (2003); Dème (2004); Weigel (2005).

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coastal and marine protected areas are in constant demand, varying according to the type of product or market, so that these “exports” are best categorized by destination: peripheral or national markets, regional markets, European or Asian markets.

The trade flows from West African protected areas towards peripheral, national or regional markets encompass a wide range of products: (i) fisheries (fish, shellfish, cephalopods, oysters and other molluscs); (ii) forestry (fuelwood and lumber, roots, bark and leaves for pharmaceutical use); (iii) apiculture; (iv) agroforestry (palm oil and wine); (v) arboriculture (fruit, cashew nuts and wine); agriculture (groundnuts, millet and sorghum); (vi) horticulture (vegetables and Cucurbitaceae); (vii) cattle raising (bovine, ovine and caprine animals, and camels); and (viii) salt. As regards fisheries products, these markets focus on fish of low commercial value to fulfil the demand for cheap proteins in order to contribute to the food security of urban (and, to a lesser extent, rural) populations. Artisanal processing contributes to meeting this demand insofar as it increases the shelf-life of these products and hence enhances the value of landings (Box 6) in the most isolated fishing camps. In the West African case, “exports” from coastal and marine protected areas to peripheral national and regional markets were estimated at EUR8.5 million (about US\$9.4 million) for 2003 (Mohamed Ould Saleck, Limam and Weigel, 2005).

“Exports” from West African coastal and marine protected areas to European and Asian markets show that these areas are an integral, albeit modest, part of the global economy. Far from the cliché of indigenous populations living in closed-economy autarchy, they probably reached EUR5 million (about US\$5.6 million) in 2003 (Mohamed Ould Saleck, Limam and Weigel, 2005; Weigel, 2005; Duarte *et al.*, 2005). These “exports” were galvanized by trade liberalization with the lifting of formal restrictions on trade transactions in application of a European Union facilitation mechanism for exports and imports together with preferential tariffs. Such “exports” have promoted trade development and the diversification of trade flows. Exports from West African coastal and marine protected areas to the European Union have increased significantly in the last ten years, in parallel with the increased value of fish landings from the West African exclusive economic zone and in response to the strong European demand for fishery products. The exports essentially concern species of high commercial value such as demersal fish (soles, gilthead sea breams, threadfins [polynemidae], barracudas, red snappers, meagres, etc.), cephalopods, crustaceans (shrimps, lobsters), frozen and generally unprocessed. Exports from West African coastal and marine protected areas to Asian markets principally concern cashew nuts produced in the Bijagos Archipelago, shark fins and ray wings for the Chinese market, and frozen cephalopods for the Japanese market.

The share of fish landings that is exported illustrates the economic extraversion: more than 70 percent of the 30 000 tonnes fished in West African coastal and marine protected areas are sold outside these areas, the rest being consumed by resident populations. Finally, the last aspect of their extraversion relates to

rice imports that place MPAs residents in a relation of food dependency, even though they contribute significantly to securing the cereal supply. In 2003, the rice imports to these protected areas compensated for the cereal deficit of about 10 000 tonnes affecting the resident population, which has grown substantially and faces worsening cultivation conditions (Mohamed Ould Saleck, Limam and Weigel, 2005; Weigel, 2005; Duarte *et al.*, 2005).

Paradoxically, in LDCs, economic extraversion of MPAs can be accompanied by a strengthening of community organization and traditional social hierarchies.

BOX 6

Trends in value enhancement of fisheries products from the Banc d'Arguin National Park

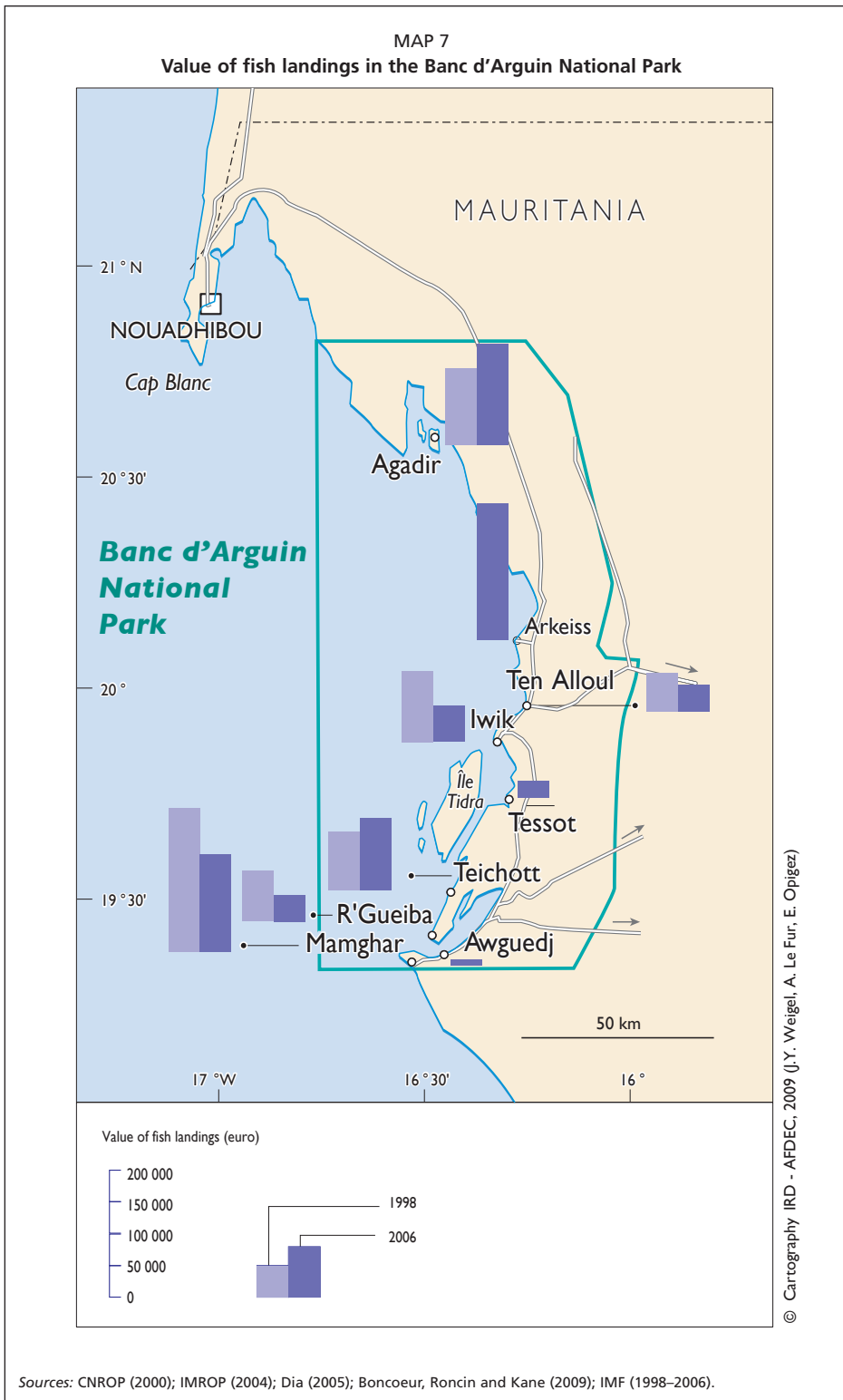
Abdelkader Ould Mohamed-Saleck and Jean-Yves Weigel

The evolution in the value enhancement of fisheries products from the Banc d'Arguin National Park in the last 30 years illustrates how trade has developed and commercial flows have diversified in marine protected areas. From the park's creation in 1976 to the end of the 1980s, almost the entire catch was processed into tishtar (dried mullet), lekhlia (ground tishtar), fish oils (essentially mullet and meagre) for the national market, or into poutargue (salted and pressed mullet roe) for the Mediterranean market. Communication problems explain why only a small amount of fish was commercialized fresh, most of the time from Agadir to Nouadhibou or from Mamghar to Nouakchott (Chérif, 2002).

The 1990s saw the massive development of shark and ray fishing as fins and wings were exported to Asia via the Gambia. Recent years have been marked by greater access to the park, and a significant increase in catches and their estimated deflated value from EUR440 000 (about US\$520 000) in 1998 to almost EUR1 million (about US\$1.3 million) in 2006 (CNROP, 2000; CONSDEV, 2003; Mohamed Ould Saleck, Limam and Weigel, 2005; Boncoeur, Roncin and Kane, 2009).

The increased value addition of landings is due to the improvement of the connection with national, regional, European and Asian markets. The national market connection has benefited from the increase in four-wheel-drive vehicles with which traders can transport fresh fish towards the cities of Nouakchott and Nouadhibou, which have grown exponentially in the last 30 years. The connection to the regional market has been improved by the development and the diversification of artisanal processing with the export of shark and ray carcasses dried and in brine, and of fermented and dried catfish. The connection to the European market is guaranteed by the export of species of high commercial value, the most important of which are sea breams and meagres. Finally, the connection to the Asian market persists with the export of shark fins and ray, which contributes to the profitability of the fishing units concerned.

The shore colonization, illustrated by the creation of Tessot and Arkeiss villages and the increased trader mobility with the multiplication of four-wheel-drive vehicles, has led to a relocation of fishing effort and landings. In the last two decades, there has been a geographical redistribution of landed values and fishing incomes (see map).



This tends to increase the community bounding and to slow down the acquisition of autonomy by individuals and households. This is confirmed by the analysis of access regulation to sites and resources or of productive relationships (Cheikh, 2003; Dahou and Weigel, 2003; Da Silva, 2003; Stomal and Biai, 2004). The first reason behind this strengthening is the explicit legal recognition, by the State, of the role of resident communities and of traditional authorities in the management and the exploitation of resources in protected areas, sometimes going as far as a formal devolution of rights. The second reason is the capture by the traditional social hierarchies of the role of guarantor of a rational exploitation of the resources, devolved to them by external international actors. In fact, these hierarchies show a remarkable capacity to adapt to the opportunities offered by deregulation and trade liberalization as, encouraged by the ways in which donor agencies intervene, they are perceived as the guarantors of self-sufficient fisheries or agricultural production systems.

4. The legal context of governance of marine protected areas in the least-developed countries: a syncretic legal system

François Féral and Bertrand Cazalet

The analysis of the legal context reveals the international inspiration behind the conceptual framework, the objectives and the conservation procedures of LDC MPAs. This analysis also leads to the legal definition of an MPA, in most cases, as the circumscription of an administered and regulated area. The study of the legal context shows that state and societal law coexist in these areas. This coexistence not only reflects the law applied in the protected areas but also, more broadly, the law applied in most LDCs where the State and its administration negotiate with the civil society as to how the law should be applied in order to achieve its objectives. Research undertaken in West Africa shows that an MPA is the manifestation of a strong legal state control of social space encountering a revival of traditional societal rights. This dual nature generates a new type of original negotiated right, neither state-based nor societal, reflecting a legal syncretism.

THE INTERNATIONAL INSPIRATION BEHIND THE OBJECTIVES AND PROCEDURES

The international origin of conservation policies

National conservation policies are widely inspired by international processes that make heavy demands on LDCs. These processes illustrate the expansion towards countries of the South of nature conservation theses developed in Western countries, triggered by the awareness-raising in LDCs of the rapid deterioration of their natural wealth. Hence, in all these countries, the centralized State apparatus relays the demands formulated in international conferences and conveyed by European or North American NGOs. It is in the wake of large conferences dealing with protected areas that the LDCs party to these large events have committed themselves to MPAs.

International inspiration is present not only in the adoption of the broad nature conservation and sustainable development principles but also in the identification of areas that must be protected given their ecological interest. The legal and institutional analysis of West African coastal and marine protected areas has made it possible to retrace the trends in this international inspiration – a nature conservation concept based on the integration of populations into the management project has replaced a unilateral and centralized one. A double importation, legal and institutional, has been observed: the new importation of international

conservation principles and objectives, and the older importation of administrative intervention methods inherited from colonizing countries.

The integration of international operational principles for MPAs in LDCs is not without its share of difficulties as this supposes the establishment of regulatory administrations having sophisticated means for scientific research and management, while the state apparatuses of these countries have been seriously weakened by structural adjustment plans.

Dependence on international assistance

The analysis of the legal functioning of West African coastal and marine protected areas shows that, on the whole, their management is based on a system of coadministration between the State and international institutional donors or NGOs involved in environmental conservation. This coadministration may be explained, in part, by the need for expert assistance in setting up institutions, nature conservation standards and management measures, which induces a dependence on international institutions or NGOs, or developed countries, via their cooperation mechanisms.

Thus, the study of these protected areas highlights an original aspect of their governance: States do not cooperate so much with their own civil society as they do with an “imported civil society” comprising international networks of conservation researchers and NGOs. The weight of the international policies is reflected in the multiplication of general or specific conservation programmes. Lacking the necessary means, the various national administrations, most often, depend on Western programmes and each of them can operate as intermediaries (relays) in operations funded by international NGOs, international cooperation agencies, and cooperation services of developed countries (Galletti, 2002). Therefore, the issue is that a sustainable conservation policy based on own initiatives of responsible LDCs would require a minimum of autonomy in resources and decision-making.

THE LEGAL DEFINITION OF A MARINE PROTECTED AREA AND THE LEGAL ACTS

Legal definition of a marine protected area

From a legal and administrative viewpoint, an MPA is the circumscription of a regulated and administered area where legal competence is allocated to the various administrative authorities involved in the processes of creation, management and coercion. Protected areas are generally administered by deconcentrated and specialized structures under the authority of central administrations. Regulatory powers are usually established by a law that is the foundation for conservation and management measures and signals the takeover of a particular space by the state administration in order to implement policies most often conceptualized at the international or national level. Then, depending on its traditions and its constraints, each State puts in place the measures and resources needed for a successful implementation of these policies.

The first founding legal act in setting up a protected area is a framework law that establishes, on the national territory, the concept of the circumscription of an administered space where special regulatory measures will apply, modifying the more general rights of persons and, incidentally, of businesses. The creation of numerous institutions holding regulatory powers disrupts the normal administrative process in these spaces. On the one hand, this introduces specialized deconcentrated area management authorities that compete with the “normal” communities or state-delegated administrations. On the other hand, it leads to transfers of responsibility and power towards the government, possibly in contradiction with rules concerning decentralization or territorial deconcentration.

The second fundamental legal act is to define specific protection areas. The principle consists in defining parts of the national territory where a particular legal system will be applied to private activities and administrative institutions. According to the new international conception, the creation and definition mechanisms must organize the interaction with the populations and actors involved in the operation. Studies undertaken in West African coastal and marine protected areas tend to show that the lower degree of organization of populations and actors does not allow the same type of negotiation undertaken in developed countries, i.e. a public inquiry carried out by independent authorities with reasonable resources and deadlines so as to provide a firm basis for the decision of state authorities.

Zoning – the process of defining subareas within the MPA – depends essentially on geographical and ecological complexity as well as on the size of the population, and it illustrates the growing complexity of MPA administration and regulation. However, generally, in LDCs, this complexity owes more to the results of scientific work than to a lengthy interaction process with local populations and actors, and it does not facilitate the understanding and management of these spaces. An example of this complexity is the zoning of the Bolama Bijagos Archipelago Biosphere Reserve, which includes Joao Vieira and Poilao National Park, Orango National Park and the Urok community-based MPA. The large number of special spaces with different regimes and particular rules confuses conservation policies even further: parks with ecological sanctuaries and sacred forests, conservation zones, buffer zones, sustainable development zones, and controlled exploitation zones. These various perimeters within the biosphere reserve should be coherently organized around a core zone where conservation and integral protection are priority objectives. Then, there are sustainable development buffer zones, with restrictions on the amount and type of activity authorized, and transition zones, where potential for development is accepted within an integrated management framework. Finally, restoration zones are established to rebuild the landscape, cultural or environmental potential of degraded parts of the protected area.

Administrative and jurisdictional acts

Legal competencies result in administrative measures that regulate private activities and ownership and in judicial sentences or administrative penalties to enforce

the rules imposed in an MPA. The example of West African coastal and marine protected areas shows that, in LDCs, regulatory measures are implicitly based on the principle of prohibition and also on that of tolerance of some traditional activities provided that certain practices are abandoned.

Hence, in the Banc d'Arguin National Park in Mauritania, the aim of measures is to control the number of residents and the ways in which resources are exploited by establishing a total ban on all activities, with a dispensation for indigenous people. Therefore, persons and groups are tolerated that “usually do... usually practice ... have traditional cultivation rights... to satisfy domestic needs... and subsistence fishing” (cf. Article 11 of Law no. 2000-24 of 19 January 2000), even though their activity is thoroughly regulated (Fall Ould Mouhamedou, 2003). Thus, the regulation of fishing operations in the park is almost obsessional, while it has been shown that fishing by the Imraguens is connected to national, regional and international markets, and that the flows of goods generated by this connection, as well as tourism activities, are poorly regulated or unregulated.

In the Bijagos Archipelago, traditional lifestyles appear to be well preserved. This is confirmed when reading the decree establishing the Orango National Park, as it defends the traditional activities and lifestyles of resident populations insofar as they do not harm the ecological heritage or resident communities' well-being so as not to affect the natural and cultural values of the protected area (cf. Articles 4, 5 and 6 of Decree 11/00 of 4 December 2000 establishing the Orango National Park). The activities in the archipelago are divided into prohibited and conditional. Prohibited activities are those potentially harmful for the environment and the natural equilibrium of ecosystems, e.g. human settlements and other constructions, infrastructure or any activity likely to alter the physiognomy and the topography of the area. Conditional activities are subject to authorizations from park officials in sustainable development zones (Articles 2, 9 and 32 of Decree 11/00 of 4 December 2000 establishing the Orango National Park) (Quade, 2003).

In LDCs, the implementation of MPA management norms is difficult in a context of low-level financial resources and the limits of a governance model that is often centralized. In theory, all violations of prohibitions and police recommendations are subject to penalties within a legal regime – police reports, prosecutions, court referrals, sanction fines and prison sentences are specified in the various legal texts. Nonetheless, the example of West African coastal and marine protected areas shows that the enforcement of these norms is dealt with practically exclusively at the level of the administrations of the protected areas (as indicated by the small number of court judgements) rather than at the national level.

The marine protected area as an institutional system

The creation of control, management and decision-making structures constitutes an institutional process. Here again, governments inspired by models from developed countries have created bodies in charge of the different coastal and marine protected areas. These bodies are primarily state structures, e.g. public

institutions or decentralized administrations, and their legitimacy in the eyes of populations as well as the type of relationship that they must maintain with decentralized institutions are central issues.

The institution designated to implement MPAs may be a public body. Created by the State to fulfil a specialized mandate of the State, the public body has a legal status and management autonomy. Its state character is highlighted by the fact that: (i) its director is nominated by the State; (ii) its funds are under public management; (iii) the staff consist of civil servants; and (iv) it has exclusive legal competence. The public body is considered to be an “operational deconcentration of the State” but the choice of this legal terminology reflects the centralized nature of the conservation project, e.g. in the Banc d’Arguin National Park in Mauritania. Operational and territorial deconcentration can also be entrusted to a simple territorially deconcentrated service, such as in Senegal where the National Parks Directorate (*Direction des parcs nationaux*) is in charge of the Saloum Delta Biosphere Reserve, the Saloum Delta National Park and the Bamboung Community-based MPA. However, the weakness in this formula may be the lack of an operational and hierarchical link between the National Parks Directorate and all the other deconcentrated state services operating in these areas. The result is inextricable “administrative layering”, which does not appear to be effective.

Paradoxically, decentralization occurs in a context of increasing state control over the protected areas. Fortunately, in practice, the state system is softened either by participatory procedures or by the granting of a degree of independence of local administrations from the central authority. Generally, administrative and consultative bodies have recently increased in number. All the committees and councils that gravitate around conservation issues foresee the participation of the actors involved in the protected areas. It is not only an approach based on negotiation and participation, but also a legitimization process. The State can no longer impose its solutions from above, based on its technocratic information. However, decentralization may induce relational problems between management institutions, decentralized authorities and deconcentrated institutions, and it can lead to genuine issues of legitimacy. Lacking the resources to combat poaching and illegal logging, the State switches from repression to a subtle game of awareness-raising and negotiation with local leaders and dignitaries through the creation of committees or the adoption of codes of conduct.

As regards the legitimization of national control of MPAs, the strong influence of conservation NGOs in LDCs cannot be ignored. Countless administrative tasks are undertaken by these organizations. The funding of surveillance services, scientific evaluations, development of management plans, and technical assistance at all levels demonstrate their presence and availability in the field, legitimizing their statements on sustainable development. The joint commitment of bilateral and multilateral cooperation agencies strengthens the legitimacy of national control through the injection of material or financial resources and strengthening of collective organization within the protected areas.

A SYNCRETIC LEGAL SYSTEM

State legal control versus a diversity of customary laws

Whatever the legitimacy of the operation, the establishment of an MPA is, in most cases, a process of increased state legal control over a given space. At an institutional level, the implementation of MPAs implies an intensified state and administrative activity and the resident populations are usually confronted with a stronger normative and prescriptive state presence. The use of the natural wealth is the main focus of the legal regime, which is also concerned with the regulation of for example: economic activities and opportunities; the habitat; the use of equipment or the implementation of practices; waste management.

However, these norms cannot be applied mechanically and the administration cannot always achieve its objectives given the predominance of local practices and societal mechanisms, which can be upset when the administrations in charge applies the state norms. Lacking resources, often abandoned by their line authority, the staff on the ground have no option but to construct a mixed administrative model combining the application of state norms and a support of local practices. Therefore, the application of norms is negotiated in a context of multiple legal systems. The administrations undertake to control the area and its activities, to an extent depending on means available and local circumstances. This negotiated right looks rich, ingenious, pragmatic and, in the end, quite efficient given the resources available.

The coexistence of several judicial systems, in negotiation and dialectic opposition, leads to a legal system that can be described as syncretic. First, the state and formal legal system produces a corpus of special policies within a circumscription. It interferes directly or indirectly with traditional patterns of wealth distribution, e.g. with rights of access to fisheries resources that are traditionally allocated within the framework of local authorizations and rules, or with land ownership rights governing the exploitation of pastoral, forestry or agricultural resources. Second, traditional rules that dictate access and use rights often remain decisive. The syncretic dimension of legal systems confirms the vitality of the various actors.

Three illustrations of legal syncretism

Legal syncretism manifests itself differently depending on the protected area considered, both in the way rules are applied and in how their content is elaborated. Although there are relatively marginal differences between the various legal systems adopted by States, the administrative practices create the distinction between three forms of administration: (i) an administration seeking consensus with local authorities (Box 7); (ii) an administration negotiating the application of state norms (Box 8); and (iii) a validation of village powers by the State (Box 9).

BOX 7

An administration seeking consensus with local authorities: the case of the Banc d'Arguin National Park

François Féral and Bertrand Cazalet

Concertation between the administration and local populations is emblematic of the Banc d'Arguin National Park. Concertation workshops are organized annually and have enabled the relatively consensual adoption of measures to restrict fishing activities since 1998. This process of concertation and facilitation is well organized, as shown by the strong support for proposed measures, the strong administrative presence in situ, the organization of compensation and accompanying measures at manageable levels, and the surveillance of the population despite its dispersion over a vast area. However, the issues at stake in value enhancement of fish resources have “woken up” tributary systems that govern resource access and wealth distribution. A change in the composition of tribal hierarchies and allegiance systems has been noted, with leading figures seeking to control tribal territories, framed by a permanent administrative presence (Cheikh and Mohamed Ould Saleck, 2002). At the same time, the concertation process has contributed to the emergence of what might be called an infratribal legal level, evident in the organization of fishing activities within and between villages that establish by themselves a strict zoning, in particular during the mullet fishing season. This organization is influenced by an ancient traditional discipline (Worms and Mouloud Ould Eida, 2002). Thus, the concertation process contributes both to the resurgence of tribal organization and to the strengthening of the traditional discipline system, counterbalancing the weight of the park administration and of international non-governmental organizations. It results in a fragile consensus on the control of fishing effort.

BOX 8

Negotiating the application of state norms: the case of the Saloum Delta Biosphere Reserve

François Féral and Bertrand Cazalet

In the Saloum Delta Biosphere Reserve, which includes the Saloum Delta National Park and the Bamboung Community-based MPA, villagers are flexible and negotiate regulatory rules with local officials in a context characterized by multiple legal references and by an “administrative layering” that leads to open competition between the different state administrations. In reality, the societal organization of the local area and the resulting socioethnic equilibria are relatively impervious to administrative conservation rules. This situation is illustrated by the “Beach Committee”, which can be equated to a mechanism of professional discipline insofar as its main function

Continues

Box 8 continued

is to control fishing effort, but which in fact represents the Village Council. The perpetual negotiation of the administration with village chiefs can be explained by the few resources available to the officials of this reserve and of the park to implement compensation measures, especially as administrative control and the surveillance of a large and heterogeneous population are difficult to organize given the very high demographic pressure and the inextricable ethnic or community interweaving. This negotiation leads to management complexity, which explains why state control can only be maintained through implicit power delegations. Thus, “Beach Committees” illustrate this delegated power and simply reflect the recognition of the “administrative” power granted to the village chief to regulate access to fish resources

Source: Guèye, 2003.

BOX 9

Validation of village powers by the State: the case of the Bolama Bijagos Archipelago Biosphere Reserve

François Féral and Bertrand Cazalet

The rules relating to the sacred zones that are included in the state conservation texts and in the administration of the parks are an example of the confirmation of village powers in this reserve, which comprises Joao Vieira and Poilao National Park, Orango National Park and the Urok Community-based Marine Protected Area. The State has integrated societal norms into traditional foundations, facilitating the assimilation of environmental regulatory norms. Another example is provided by the validation of access authorizations delivered by traditional chiefs, who, in the absence of a state administration, negotiate resource access with foreigners in a contractual framework in which, however, the reference to resource conservation is not always explicit. These village authorizations are validated by the provisions of Article 32 of the decree concerning the organization of the Orango National Park; the concession of the right being considered valid if the administration has not responded within 90 days. The integration of societal norms implicitly acknowledges traditional Bijogo hierarchies such as the clan (djorçon), the “king”, the council of elders and the age classes. The council of elders, bringing together the “great men” (the initiators), grants use and settlement rights; the 30s and 40s age groups organize work within the production units. Hence, in this biosphere reserve, the marginal presence of the State of Guinea-Bissau leads to informal governance where village hierarchies hold genuine jurisdictional power ratified by the state administration

Source: Quade, 2003).

5. Governance systems of marine protected areas in least-developed countries: analytical framework, characterization and weaknesses

Jean-Yves Weigel, Abdel Wedoud Ould Cheikh, Jean Schmitz and Alfredo Simao Da Silva

In order to identify MPA governance issues in LDCs and propose suitable public policy options, a comprehensive examination of governance in each MPA or MPA network is required. A review of the literature has shown the dominance of normative and prescriptive texts advocating good governance and the relative scarcity of thorough scientific analyses, and this to the detriment of thorough analyses (Weigel, 2008). This leads to the conclusion that an analytical framework for MPA governance is lacking and that such a framework should take into account governance specificities in LDCs.

Therefore, an analytical framework has been developed, drawing inspiration from four sources. The first source is the interactive fisheries governance approach, largely developed by the Centre for Maritime Research (Kooiman *et al.*, 2005), which stresses public and private interactions to solve societal problems and create societal opportunities. The second is the risk governance approach developed by TRUSTNET,¹² a European pluralistic think-tank, which identifies two paradigms of risk governance: top-down, and mutual trust. The third source is the socioanthropology of mediations and brokerage, mainly developed by the École des hautes études en sciences sociales (Olivier de Sardan, 1998), which highlights the plurality and the intricacy of socio-economic organizations and institutions, the sociocultural features, and the emergence of new mediators and “development brokers” in LDCs. The fourth is the governance analytical framework, developed at the initiative of the Institut universitaire d’études du développement (Hufty *et al.*, 2007), which suggests a system based on five main components.

The analytical framework adopted, which should provide the basis for a comparative approach applicable to all governance systems, indicates five main components that should be explored to give operational content to the governance concept: (i) define governance problems; (ii) describe the norms with which governance should comply; (iii) classify the governance actors; (iv) identify the nodal points where actors’ strategies clash; and (v) reconstruct the process that led to the current governance system.

¹² www.trustnetinaction.com

This analytical framework makes it possible to characterize the different MPA governance systems in LDCs. It has been applied to the two most important West African coastal and marine protected areas: the Banc d'Arguin National Park in Mauritania, and the Bolama Bijagos Archipelago Biosphere Reserve in Guinea-Bissau. Two governance systems have been identified: a hierarchical and instrumentalized¹³ system and a community-based concession system.

The characterization of governance systems highlights their weaknesses, making it possible to suggest how to restructure them and propose new public policy options. The main weaknesses concern: the limits of fisheries management; the absence of financial sustainability; the disproportionate role of international NGOs and institutions; an incomplete decentralization process; and the fragmentation of the State and civil society.

AN ANALYTICAL FRAMEWORK TO CHARACTERIZE GOVERNANCE SYSTEMS

Definition of governance problems

Actors address the problems of governance in different ways according to their place in society, their objectives and the pressures they are under. Therefore, the first stage is to acknowledge the diversity of viewpoints. Hence, in considering what the major issue is in an MPA, ecologists see fish resource overexploitation. Indigenous populations see access to these resources and the control of fishing grounds. State authorities focus on the balance between conservation and economic development and the maintenance of social harmony. In order to be functional, the analytical framework should be able to express the problems identified (e.g. falling fish catches, population densification or non-equitable resource access) in sociopolitical terms. Actors are brought to go beyond what they consider to be a problem and see it, *inter alia*, as a sociological and political issue.

The case of the Banc d'Arguin National Park illustrates the diverse ways in which governance problems are addressed. For scientists, the governance problem is the low capacity of the management institution to persuade a dependent and heterogeneous population – whose tradition does not require, as a main task, the forecasting and planning of natural resource use – to accept the principles of regulation and conservation of a fragile environment. For the administration of the MPA and its partners (NGOs and international donor agencies), the governance problem is that of improving the legal and institutional framework, strengthening the management plan, building mutual trust and understanding, and making participatory mechanisms part of the institutional system. For residents, who may not have a unified vision of the problem posed by governance (given the diversity of interests at stake and the heterogeneity of the actors concerned), the governance problem is defined in terms of opportunity benefits: What is the compensation for loss of income caused by the regulation of fishing and, more generally, of natural

¹³ An “instrumentalized” governance system is a system that those to be governed take opportunity of, and use, to reach objectives of their own, different from (or in addition to) those aimed at by the administration.

resource exploitation? For non-resident users, particularly tourists, the objective of governance is that of biodiversity and landscape conservation (Cheikh, 2009).

Generally, demography stands out among the most important governance problems in LDC MPAs. In the first place, the issue is to curtail population growth, which requires including areas that are often isolated into governmental family-planning programmes. A second problem is to limit the seasonal migration of non-residents and prohibit uncontrolled offshore fishing, which requires the strict and complete application of resource access regulations to all the actors in the value chain (from the fisher to the trader).

Another major problem affecting governance of LDC MPAs is the considerable development of artisanal fisheries in the last 30 years. This has usually meant fishing overcapacity and has led, as in West Africa, to full exploitation and to the overexploitation of certain stocks since the end of the 1990s (Gascuel and Laurans, 2001; CEEAF, 2004). The case of West Africa illustrates the considerable increase in artisanal fishing effort and processing within and at the periphery of MPAs at the instigation of development projects funded within the framework of bilateral or multilateral development aid. The solution to this problem requires the integration of MPAs into sectoral policies, for example in fisheries policy, in order to anticipate the problems related to artisanal fisheries development projects at the periphery of MPAs or induced by the mobility of non-residents.

Finally, a governance problem for most LDC MPAs is the significant extraversion of their economies owing to trade deregulation and liberalization. The analysis of the modalities of the deregulation and economic extraversion of these areas showed that overriding market forces operate within them, affecting the residents of protected areas and increasing pressure on natural resources. In order to counteract this negative impact, one option for the public authorities is to mediate and to restore the regulation of flows of goods between protected areas and non-protected zones.

Description of governance norms

Three types of norms can be distinguished, each relating to a different analytical level: (i) meta norms, relating to principles guiding the “social contract” and to broadly shared values that may be of international inspiration (sustainable development, responsible fishing, and participatory management) or of local inspiration (clan, tribe and lineage affiliation); (ii) constitutive norms, which define organizational and institutional mechanisms; and (iii) regulatory norms, which define rules of conduct specifying what is appropriate in terms of behaviour from a social point of view.

Norms can be formulated at different levels and transferred to other levels, for example from the international level to the national or local level. At each level, there is a process of reaction, rejection or acceptance and adaptation. The norms may be formal (recognized by the authorities of the relevant society) or informal (produced by actors’ practices). These various norms may overlap, compete or coexist in a given society, and this normative plurality may become a major source of conflict.

For example, in the Banc d'Arguin National Park, norms are produced by the park authorities using the meta norms from relevant international NGOs as well as norms from tribal hierarchies. This unicity in norm production is clear even though some competition develops between ministries and state agencies concerning park governance. However, a deeper analysis of norm production reveals that natural-resource access and use regulation is far more administered by the State, via the park authorities, than contracted out with control mechanisms, confirming the fact that regulatory activities are undertaken solely by the authority of the State. The unicity in norm production (an exclusive mandate of the park authorities) is made possible by deliberation mechanisms that are instrumentalized by tribal hierarchies, and which tend to reinforce a potentially deleterious patron–client¹⁴ relation between the park populations and their representatives or delegates.

Tribal hierarchies are placed at the centre of the decision-making mechanisms, but the contemporary context is also characterized by the restructuring of tribal territories, in particular with the creation of new human settlements. Although authority is expressed through a strong state presence and traditional hierarchies throughout the different levels of governance, it also emanates from external partners that, in a context of insufficient state resources, more or less deliberately increase the dependence of the populations on them (Cheikh, 2009).

Classification of the governance actors

In order to analyse the interactions between actors involved in MPA governance, a typology can be made from their classification, according to: their origin (civil society, formal or informal sector, State); the community they belong to (affiliation, membership, administration); their organization (deliberative or not, bureaucratic, market-based); and their social commitment (voluntary or hierarchical).

The typology can be enriched by a supplementary classification. Strategic actors are any individual, organization or group with sufficient power resources to prevent or hinder the application of rules or the decision-making process and the implementation of solutions for collective conflicts. Relevant actors are those involved in the institutional framework and have the resources required for playing a role. Finally, secondary actors are those that lack sufficient power to have an impact on the rules of the game (Prats, 2001).

Based on this typology, some civil-society actors can be identified. Within and around MPAs, the major active actors from civil society are coastal or island communities (mainly fishers, farmers and informal sector workers) organized into village committees, as well as sector-based associations and local and international NGOs. Coastal and island communities can be considered as complex and deeply embedded arrangements of people with kinship, generational, religious, economic and political ties. Residents of an MPA are defined by their unintentional belonging

¹⁴ The term “patron” is used in a negative sense to stress that fact that the assistance, or provision of services or advantages, is given to people in return for their support, creating a dependence between “patrons” and “clients” that may deviate the institutions from serving societal, collective objectives to serving particular interests.

to coastal or island communities, their intentional and voluntary membership in village committees, and their market-related and voluntary membership in producer associations. The local and international NGOs involved (e.g. the World Wide Fund for Nature [WWF] and the IUCN supported by international donors) are very focused on conservation policies and development or cultural heritage policies for local communities. Local NGOs can be likened to mediators or, in some cases, to “development brokers”.

In the Arabian-Muslim countries and in the Horn of Africa (e.g. Djibouti, Eritrea, Mauritania, Somalia, the Sudan and, Yemen), in MPAs where human activities are tolerated, the strategic actors are the tribal chiefs, as tribal affiliation plays a decisive founding role in natural-resource-use rights and, more generally, is a key element of governance. Human communities identify themselves with one “tribe” (qabîla) defined as a group, of varying size, of persons whose members are linked by kinship, solidarity or allegiance. The unity of the tribal group is conveyed through a number of common prerogatives, such as the claim to ownership or control of the same territory or the participation of adult males in collective obligations, as well as in the assembly that deliberates on community affairs including those related to access to natural resources.

In a few sub-Saharan African LDCs, in MPAs that are not classified as strict natural reserves, the clans, chiefs and age classes are the strategic governance actors. These traditional hierarchies continue to play an important role in the coastal and marine protected areas of Angola, Benin, the Democratic Republic of the Congo, Equatorial Guinea, Guinea, Guinea-Bissau, Liberia, Madagascar, Mozambique and Sierra Leone. Affiliation to groups such as clans, chiefs and age classes is the basis for natural-resource access and use rights and for MPA governance in general.

The same applies to MPAs in the South Pacific LDCs (Kiribati, Samoa, Solomon Islands, Tuvalu and Vanuatu). For example, in the Aleipata and Safata MPAs in the Samoan islands, the governance system highlights the role played by the clans (aigai) and the lineage chiefs (matai) who are responsible for the natural resources and represent the clan in the village council (fono). The fono is responsible for community order and the organization and development of the village. The national government adds to this structure by appointing a village mayor (pulenu’u) who presides over the village council. This governance system is strengthened by the 1990 Village Fono Act, which acknowledges the delegation of legal, judicial and executive powers to village councils (Techera, 2006). The village council appoints a coordinating committee to manage the conservation area. Meanwhile, as in other South Pacific island countries, the church is another major governance institution, and pastors or priests have considerable influence over village life. In addition, the Women’s Committee and the Untitled Men’s (taulelea) Association are also involved.

In other MPAs, traditional hierarchies such as clans, age groups and chiefs have been significantly undermined. This is the case of sub-Saharan LDC MPAs (Comoros, Equatorial Guinea, the Gambia, Senegal, Togo and the United

Republic of Tanzania) and of South or Southeast Asian LDC MPAs (Bangladesh, Cambodia and Myanmar).

Identification of nodal points where actors' strategies may clash

Nodal points are spaces, either physical (e.g. a community council or a negotiating table) or virtual (e.g. an Internet conference), where problems converge, actors interact, decisions are made, agreements are concluded and norms are established. The nodal point is an observation space where the actors' distinct visions and interests meet. This notion is close to the notion of "arena" developed by the socioanthropology of mediations and brokerage (Olivier de Sardan, 1998). Governance may involve several nodal points, or a principal nodal point with inter-related secondary ones. For example, during negotiations on the allocation of access rights, each represented group holds internal discussions to determine the group's strategy, during which different actors argue but end up aggregating their demands or positions in preparation for the main negotiation. Identifying and characterizing the different nodal points is part of the analysis of existing governance conditions. The main governance nodal points in West African coastal and marine protected areas are the governing boards and the management committees, the village or community committees, the customary assemblies, the professional associations, and the concertation workshops. It may be noted that, on the whole, the nodal points tend to evolve from the traditional to a more formalized framework.

Among the most identifiable nodal points of the governance of the Banc d'Arguin National Park are the concertation workshops periodically organized by the park management in order to discuss with the representatives of the MPA populations the issues that require their involvement or their consent, e.g. related to regulations or local development initiatives. The concertation workshop is the crossroads where the whole variety of local ideas and interests of resident populations meet and face the resolve of the administration with the view to integrate these ideas and interests into the process of ownership, with the aim of contributing and ensuring the conservation of the natural heritage on which they live and their livelihood depends. The divergent expectations emerging from these workshops are central to the difficulties faced by the governance of the Banc d'Arguin National Park. The workshop is precisely the place where these difficulties are brought out and debated. Connected to this first nodal point, the cooperative is another focal point between divergent interests that acts as the "transmission shaft" between projects and MPA resident populations.

In the Bolama Bijagos Archipelago Biosphere Reserve in Guinea-Bissau, there has not been such a clear formalization of the customary framework. In each village or geopolitical entity, the nodal points remain the council of elders and other traditional assemblies, during which decisions are made. These are accompanied by ritual ceremonies, which play a role in social regulation and in particular in exorcizing conflicts (Henry, 1994). However, these ceremonies also play their part in maintaining the gerontocracy that perpetuates the domination of the elders

through the control of resource access and especially of the labour force (Da Silva, 2003). The evolution of nodal points towards a more formalized framework remains localized and depends mainly on the efforts made towards participatory management; as a result, it is more noticeable in the islands of Formosa, Nago and Tchedia, which constitute the Urok Community-based MPA.

Reconstruction of the process that led to the governance system

The process is seen here as a succession of states through which the governance system evolves. One method of analysing the process is to identify the sequences of governance, introducing a temporal dimension.

For example, 1998 was a pivotal year in the case of the Banc d'Arguin National Park. It marked the transition from a barely and only seasonally occupied marine area governed on the basis of a top-down paradigm, to a governance system integrating concertation mechanisms potentially capable of dealing with threats such as: increasingly sedentary (less migratory) populations; greater fishing effort (motorized outside the park and non-motorized inside it) owing to regional and international market pressure; greater access to the park facilitated by the increase in four-wheel drive vehicles and, more recently, the tarring of the road between Nouakchott and Nouadhibou; and the threat of offshore oil and gas drilling. Since 1998, the concertation mechanisms, the objectives of which relate to resource access and sharing new fisheries wealth, have awakened the traditional tribal organization.

Another method to analyse the governance process is to draw the web of interactions between actors. The drawing combines four types of interactions: (i) bargaining transactions, which determine the collective rules related to the transfer of a right (e.g. the access to fish resources); (ii) managing transactions, which organize the production of goods and services (e.g. the exploitation of resources); (iii) rationing transactions, which organize the distribution of the wealth produced based on the principle of allegiance to the authority; and (iv) reciprocity transactions, which strengthen the social fabric and are the foundations of the social capital (Beaurain and Bertrand, 2009).

One example of such transactions are those observed in April 2003 during the installation of a fishing camp in Ancopado in the Orango National Park (Guinea-Bissau) between Diola fishers coming from the northern coast of Guinea-Bissau and the indigenous populations of the village of Eticoga, who claimed territorial control (Da Silva, 2003). The negotiation transaction concerned the composition of the committee bringing together decision-makers from both sides and the modalities of decision-making and transfer of rights. It was decided to establish a committee of five representatives, three from the indigenous village and two from the non-native fishers, and that the transfer of a right of access or exploitation of a resource would occur during ceremonies presided over by the priestess of the village. The managing transaction led to limiting the number of canoes and fishing gear according to the target species, the definition of zones where fishing was prohibited, and to designation of compulsory days of rest in keeping with

Bijogo cosmogony. Rationing transactions dealt with the quantities to be given to the village chief and the council of elders as well as the species and quantities over which the women of the village would have commercial monopoly. An example of reciprocity transaction related to the settlement authorization is given by the rental of canoes at preferential rates – allowing the village women to trade their processed fish on the weekly market of Bubaque, the main town of the Archipelago – and the provision, at the request of the council of elders, of a large canoe from the fishing camp to evacuate the sick and injured to Bubaque.

The case of a hierarchical and instrumentalized governance system: the Banc d'Arguin National Park

The Banc d'Arguin National Park is an example of an MPA where governance is strongly influenced by tribal affiliation. The Imraguens who inhabit the Park were originally a dominated class, once comprising former slaves, tributaries and artisans holding their use and access rights (including maritime rights) from a tribal framework. The tribe continues to determine mentalities, to foster exclusions (in particular matrimonial ones) and to establish powers. The way in which the park's resident households are formed and composed is provided in the general tribal system, which presides over resource access. Within the tribal framework, access regulation is based first and foremost on the assertion of a use right for water points, pastoral itineraries and fishing grounds based on the claim of the past dependence of Imraguens who used to occupy the coast on a seasonal basis to fish for mullet. The strategic actors, who are the chiefs of tribal groups or their representatives, make commitments and decisions in the name of others, taking their authority from within the tribal framework. These are also the actors who draw the most benefit from means and resources provided by external interventions, even though redistribution mechanisms generally temper the predatory behaviour of these “development brokers” (Cheikh, 2003).

However, even though the State, through the park administration, exercises its duty of regulation by delegating some of its functions to traditional hierarchies of the MPA, it has the final say, particularly when tribal conciliation fails. This is especially the case because the State is in charge of the control function, exclusively undertaken by park or state officials, while social organizations have no recognized competence in this domain. It is the park administration and state services that transmit the meta norms advocated by international NGOs. The administration is tempted to operate according to the prevailing top-down paradigm, the only one it really “masters”, but it often runs up against the weight of networks of influence and counterbalancing powers of tribal and regional origin from which this administration draws (more or less covertly) some of its legitimacy (Cheikh, 2003; Dahou *et al.*, 2004).

Because of its financial importance, the International Foundation for the Banc d'Arguin (FIBA) can be seen as an informal supervisor of the park administration. The residents of the Banc d'Arguin National Park are tempted to deal directly with the FIBA because of its strong presence on the ground, possibly bypassing

the administration. As regards bilateral cooperations, the residents deal practically only with the park central administration but they compete with one another and with the FIBA and this does not always foster coherence among the different projects on the ground. Finally, the “experts”, especially those who manage to stay for long periods in Mauritania and are, in principle, serving a rational and ecological vision of local realities, cannot escape from a patronizing reading of the problems.

The arguments of legitimacy or the justifications used by the different actors reveal divergences, convey antagonisms, and mobilize solicitations and odd alliances, which gives the governance system of the Banc d’Arguin National Park its specificity as a hierarchical and instrumentalized governance system. The Imraguen populations work towards strengthening their position of recipients of international aid, stressing sometimes the “compensations” they feel entitled to for the loss of earnings resulting from the statutory constraints enacted by the administration (Cheikh, 2009).

The main governance weakness is the truncated representation of dependent groups that are nonetheless the direct users of the natural resources. This representation tends to marginalize many actors that are neither visible in the tribal organization nor in the representation systems initiated by international NGOs and institutions. Thus, the participatory methods promoted by donor agencies do not always lead to a true associative movement. The poor visibility of resident populations can contribute, ultimately, to increased pressure exerted on the resources by actors located at the park’s periphery, in particular artisanal fishers, who claim fishing rights in the park’s waters inasmuch as no significant mobilization contrasts their predatory intentions (Cheikh, 2003; Dahou *et al.*, 2004).

The case of a community-based concession system: the Bolama Bijagos Archipelago Biosphere Reserve

The governance system of the Bolama Bijagos Archipelago Biosphere Reserve is based on the devolution of regulatory powers concerning resource access and use to traditional institutions. These institutions refer to the social organization of Bijogo society – every villager belongs to a clan and to one of eight age groups, the last of which provides members of the council of elders. The identification with an insular geopolitical entity relates first of all to the village, which is the property of one of the four matrilineal clans of the archipelago. The “king”, assisted by the priestess, heads the hierarchy of the village or group of villages and “possesses”, in the religious sense of the term, the collective assets of the village: the land, the beach and the proximate aquatic spaces. He also chairs the council of elders, which brings together the “great men” (the oldest age group) to grant land-use rights or to authorize the settlement of foreign fisher communities (Mendes Fernandes, 1984, 1989; Henry, 1994).

The rights to access and use fishery resources are granted and implemented in various ways. Use rights for fish resources located near the villages are only

regulated: (i) when large fish traps are built; (ii) for specific fisheries, in the form of technical restrictions concerning hooks or mesh sizes for mullet nets; and (iii) for certain ceremonies during which the “elders” forbid canoe owners from fishing in the coastal zone surrounding the sacred sites. As regards the use rights of purely maritime fish resources, the customary hierarchies have no recognized role, as the State is supposed to exercise its sovereignty over the maritime space of the exclusive economic zone. The fishing rights in the intertidal zone are set aside for the women of the village and give rise to seasonal collective harvesting led by the “elder women”.

This community-based concession system, based on the prevailing mutual trust paradigm characterized by a broad involvement of the stakeholders in the management process, is encouraged by the public authorities insofar as a land law recognizes and endorses all the customary rights. On the other hand, state governance in the reserve is practically absent – deconcentrated administrations seem broadly absent from insular territories and maritime zones. This situation is not specific of the archipelago, as, given the lack of state resources, the administration of citizens remains relatively loose over the whole territory of Guinea-Bissau. Therefore, this is definitely a case of the principle of the devolution of access rights to territories and resources to local populations, with no guarantee, however, from any higher authority, as to their public nature. Incidentally, the process is enhanced by the numerous interventions by national and international NGOs, first by the IUCN and the FIBA, heavily involved in the governance of the reserve and directly financing some of the archipelago communities.

In the case of fishing, this community-based concession system is ambiguous insofar as the traditional institutions are unable to control efficiently the access to and the exploitation of fish resources. Both autochthonous and non-autochthonous fishing coexist in the case of Bijagos. These two types of resource exploitation operate either together or separately depending on the fishing sites. One of the reasons is the absence of the State to enforce the law and guarantee the settlements authorized by law and to call into question illegal ones. As a consequence, some fishing camps develop into proto-urban settlements that threaten the reserve environment. Even when such tensions are moderate, e.g. in particular in the case of offshore fishing from Senegal in MPAs, out of any community control, the State’s lack of resources is indirectly responsible for the increase in predatory fishing.

This highlights the main weakness in the governance of this community-based concession system: the lack of resources of traditional institutions to exercise control over the maritime territory, together with the weak linkages between traditional and state powers. To remedy this weakness, norms for resource access and use could be jointly established by the residents and the State. Such cooperation could be supported by international NGOs and institutions that have the resources to generate the necessary mechanisms (Da Silva, 2003; Dahou *et al.*, 2004).

WEAKNESSES OF MPA GOVERNANCE SYSTEMS IN LEAST-DEVELOPED COUNTRIES

The limits of fisheries management

Conventional fishery management generally limits the stakes of governance to a functional mechanism whose objective is to conserve fishery resources (Hatcher and Robinson, 1999). Analyses in terms of fisheries management usually bring only technical or economic solutions to problems involving power struggles between actors that, in that approach, remain neglected. On the contrary, a political economy or political science approach to management would be more willing to address the conflicts between the divergent interests that characterize the governance of MPAs.

Therefore, fisheries managers usually think of the management of an MPA only in terms of appropriate or inappropriate economic incentives or bioecological properties and/or issues and do not pay sufficient attention to the power struggles along the value chain that largely determine the way in which socio-economic issues are appropriated and norms are applied.

The non-recognition of territorial access and use rights¹⁵ of MPA residents by highly mobile migrant fishers is another limit to the fisheries management approach, which only rarely takes into account the overlapping of different fishers' territories or migration paths. For example, the fishing migrations and interactions between MPAs show the difficulty of establishing territorial limits, and yet, the management of these migrations and interactions represents one of the principal challenges for local governance that has to integrate the various scales and manage interactions between the groups operating within and at the periphery of MPAs.

In West Africa, the governance of an MPA is usually only analysed in terms of its fisheries management dimensions. This governance model focuses on understanding the biological, and perhaps the economic or ecosystemic, impact of measures specific to these areas, which reduces the possibility to integrate any elements other than the "catch" and gear dimensions into the analysis. It is difficult for such a narrow approach to integrate the impacts of trade on removals, or in social, economic or political terms (increased inequality, redistribution of value-added, etc.). The conventional "fishery" management model turns out to be too narrowly sectoral to "capture" properly the complex scope of this type of area.

By modelling essentially the removals taken from ecosystems, the fishery management approach to MPA management promotes only the functions needed to control those removals. By characterizing exploitation systems simplistically, if at all, this approach prevents understanding of the practices of the group of actors and of the degree of equity in these systems. As a result, this approach alone cannot suggest how to achieve environmental, economic and social sustainability objectives.

¹⁵ The term used in French is "déterritorialisation".

The lack of financial sustainability

In LDCs, MPA governance is usually hindered by low, unsustainable and unstable levels of funding. Several funding sources can be distinguished (Reid-Grant and Bhat, 2009). The low level of government subsidies can be explained by the fact that it chooses as a priority to finance the basic needs or to clear its international debt. The unsustainable nature of the funding is the mark of foundation grants given to NGOs working on MPAs for specific projects of fixed duration and that cannot usually be used for daily management activities.

The interannual instability of funding is illustrated by donations, which are an important source of funds for some of the West African coastal and marine protected areas. Other MPA funding sources, such as concessions and biodiversity enterprise, remain marginal in LDCs. Concessions granted to private entrepreneurs provide revenue for the running of MPAs but may open the way to legal appropriations that could then be difficult to reverse. The funds from private firms interested in biodiversity originate generally from pharmaceutical companies searching for chemicals or ready to pay for conservation of their potential sources.

The best guarantors of some longer-term funding are international assistance agencies, debt swaps and trust funds. The Global Environment Facility, for example, is intended for governments and not for NGOs, meaning that funds transit through government bureaucracies. As noted in Senegal, this may lead to lower efficiency. International financial assistance can also take the form of debt swaps,¹⁶ which supposes that the benefiting MPA has the qualified personnel to follow through on the agreement. Finally, the trust funds, which are a relatively long-term source of funding, require that the following conditions be met: the existence of a planning process and a management plan with regular budgeting, annual reporting, business plan, institutional and organizational development plan; and a consolidated and transparent accounting system including externally audited annual accounts. A recent development in LDC MPAs are trust funds. One of the best known in West Africa is that of the Banc d'Arguin, implemented on the initiative of the FIBA and of the Government of Mauritania (FIBA, 2008).

Finally, the introduction of user fees clashes with the low income of fishers and other users who often generate only a low, perhaps even negative, resource rent, explaining why such fees are practically never applied to residents of LDC protected areas. However, several studies have shown that the potential of entrance fees, licences and permits were often underestimated and that they could make a significant contribution to management costs (in particular surveillance costs) provided that the flow of tourists were substantial and the area to protect not too extensive (Depondt and Green, 2006; Thur, 2010).

¹⁶ A debt swap is the conversion of an old debt into a new debt, a new equity, or a series of transactions where debts are exchanged between two entities. Here, the suggestion is that some part of the sovereign debt of an LDC could possibly be swapped for a long-term financing by that State of its management of MPAs.

The disproportionate role of international NGOs and institutions

The analysis of LDC MPA governance systems highlights the disproportionate role of international NGOs and foundations (the IUCN, WWF, FIBA, etc.), and of other international institutions that, through their programme funding, effectively establish themselves as power holders in the environmental field.

The logic behind the development activities of these international NGOs and institutions is to promote deliberative bodies with the view to promote a group of actors. As a result, they do not usually strengthen government-based management of these areas. They try to limit the weight of the top-down governance paradigm by focusing their resources on the organization of local populations. While strengthening community organizations, they do not appear to bother about balancing power relationships within and between communities. This can lead to deficient regulation of conflicts over resource access and use and incoherent management. Thus, these international NGOs and institutions sometimes tend to promote a conservationist approach to the detriment of a wider vision of sustainable development by not providing the necessary resources to mitigate or compensate the restrictions.

Incomplete decentralization and institutional fragmentation

In LDCs, MPA governance is strongly influenced by the general institutional context of decentralization. Initiated by international institutions and relayed by bilateral cooperation agencies, the decentralization policy was implemented in almost all LDCs in the 1990s. However, one can speak of incomplete decentralization insofar as the administration of local communities has not been wholly empowered and decentralization has been limited to certain areas of competence, within the framework of a relationship with the central power based on deconcentration or sometimes even on sheer centralization (Galletti, 2003). Hence, LDC MPA governance stumbles, on the one hand, on absent or incomplete decentralization, as shown by the lack or insufficient fiscal prerogatives of local authorities, and, on the other hand, the insufficient deconcentration processes by a State tending to keep all strategic decisions at this level, helped by its grip over most of the fiscal resources.

In LDCs, MPA governance is also hindered by excessive fragmentation of the State and the civil society. State fragmentation emerges in three ways: (i) in the adoption by state institutions of norms that may be contradictory, e.g. in environmental protection and poverty reduction strategies; (ii) in interministerial competition at the national level, leading to compartmentalized projects; and (iii) in the coordination problems emerging at the local level between deconcentrated administrative services, reducing the development of complementarities. State fragmentation is a serious obstacle to the promotion of a sustainable development, as the different administrations constantly oscillate between conservationist and developmental approaches.

The multiplication of local NGOs and associations illustrates the fragmentation of civil society. Their diverse objectives and difficult coordination seriously

compromise the horizontal governance that should be based on the mutual trust paradigm. In the three areas studied, coordination problems may be identified at the heart of these two power structures (i.e. the State and civil society) that undermine the efficiency of the current concertation mechanisms (Weigel and Dahou, 2007).

6. The reconfiguration of MPA governance and public policies

Bertrand Cazalet

There is an urgent need to restructure LDC MPA governance given the weaknesses highlighted in governance systems. First, such restructuring should begin by reviewing all the various authorities and sources of law that, de facto, define MPA governance. Second, law-based governance should be formalized, which involves the necessary reform of the State and the emergence of civil society in order to compensate for governance weaknesses. The changes required in the ways in which governance functions concern not only the adjustment of legal and institutional statuses but also the means of implementation, endorsing the decentralization processes and recognizing and guaranteeing territorial-use rights. The restructuring of governance must allow protected areas to become a strategic tool in national environment policies. Hence, the following sections discuss the integration of the management of these areas into other sectoral policies and the development of planned and managed ecotourism.

THE AUTHORITIES AND SOURCES OF LAW

State authorities

The analysis of their objectives and functions has highlighted the fact that MPAs are usually defined as state-controlled circumscribed spaces. The act of creating a protected area includes the definition of the geographic limits of its territory and the constitution of a public institutional management structure whose main mission is to administer the protected area with the power at its disposal. The management system may be completed by policing prerogatives granted to other state services that produce regulations in support of conservation (authorizations, bans, restrictions, coercions and sanctions). The analysis of governance systems in West African coastal and marine protected areas identifies functional decentralization (e.g. in the Banc d'Arguin National Park), administrative deconcentration (e.g. in the Saloum Delta Biosphere Reserve), and territorial decentralization with a weak supervisory institutional structure (e.g. in the Bolama Bijagos Archipelago Biosphere Reserve).

Customary and decentralized authorities

In LDCs, the existence of traditional authorities is sometimes recognized given their unquestionable legitimacy and influence, but these authorities have little legal power. In the case of West Africa for example, customary property and related uses appear as a division of the collective property usually established at the village level. At the heart of this socio-economic entity, traditional authorities regulate, control and ensure access to, and the use of, land and sea areas. The exploitation

of natural resources for food determines the distribution of territories with an initial goal of achieving balance and equity between inhabitants. The ancient origin of villages and the delimitation of their territories go back to the settlement of a founding clan claiming ownership over a site based on the right of first clearer or first occupant. This results in very complex land appropriation rules, subject to interpretation within the village society, but also between several neighbouring communities as well as with external migrants seeking seasonal or permanent settlement. Furthermore, traditional land regimes do not concern only the strict “land” domain, and have to be understood in the broader sense of the term “land”, including watercourses, lagoons, and coastal, insular and maritime zones. Hence, they often govern all economic activities: agriculture, agroforestry, cattle-raising, hunting, fisheries and so on.

In the light of this situation, how can these traditional institutions be recognized and allowed to acquire *de jure* the prerogatives that they exercise *de facto*? Officially, the State promotes territorial decentralization through which it gives up some of its functions, transferring them to elected local authorities. These constitutional reforms are intended to provide extra credit to the traditional arena, while modernizing the relationships between central and peripheral institutions in the nation’s interest and future. In reality, however, decentralized institutions were often put into place with the objective of strengthening the presence of the State in the peripheral territories and to isolate further the traditional powers. When dealing with MPAs, it is very important to take this issue of incomplete decentralization into account, especially in a context where local governance is presented as a new ideal of sustainable resource-use management. The State is quite often intrinsically reluctant towards any initiative that is geographically and politically removed from its influence and domination.

Ambiguous authorities

“Ambiguous” authorities are authorities that do not derive their influence from an official or direct legal competence or from a particular traditional legitimacy, but rather from their political and, especially, financial, power. In the first place, they are the many private economic operators, such as the influential stakeholders, groups and cooperatives, and other agents in the fisheries, agriculture and tourism value chains. Second, there are the NGOs and the international pressure groups, mainly concerned with the environmental aspects and whose stance guides the managers of protected areas. They have two decisive arguments that give them very significant lobbying power: (i) a scientific expertise and research capacity that gives them scientific credibility; and (ii) an omnipresent financial contribution. The systematic motto of these NGOs and international pressure groups is to “pull conservation down towards the grassroots”, which is one of the leitmotifs of good MPA governance, as defined during the World Parks Congress of September 2003. Principle 2 and Operational Guideline 4 of the Man and Biosphere Committee of the United Nations Educational, Scientific and Cultural Organization (UNESCO) also recommends decentralizing “the initiative as much as possible towards

the base” (UNESCO, 2000). This constitutes one of the foundations for the ecosystem approach presented by UNESCO as “solving the puzzle” of biosphere reserve management. The movement towards some form of subsidiarity and the introduction of new community, or community-based, principles provides strong guidance for ongoing and future projects.

LEGAL FORMALIZATION OF GOVERNANCE

Necessary reform of the State

Stressing the inefficiency of LDC governance systems, the promoters of good governance recommend working with other structures and other methods in order to share skills and confer new powers to civil society. In short, good governance aims to reform the state apparatus well beyond the strict framework of protected areas. Nonetheless, the issues that are special to MPAs require further research and the practical testing of good governance objectives. The transformations of the state apparatus aim at changing the organization of politico-administrative arrangements. From a political point of view, the aim is an effective separation of powers while, quite often, the situation of power accumulation persists. From the point of view of administrative organization, centralization is criticized as responsible for heaviness and sluggishness of conceptualization, elaboration and implementation of political decisions. Therefore, the aim is to end centralization in order to strengthen the efficiency of public action and to increase the neutrality of the State in public management.

In the environmental domain, and specifically as regards protected areas, the ideology of good governance reduces the role and place of the State in the decision-making process. International statements increasingly tend to minimize the capacity of States to act for environmental and biodiversity conservation. The issue of governance poses clearly the problem of the evolution of the place of the State in the decision-making process. Governance, including that of MPAs, should be stable and part of a dynamic process changing the balance and weighting in the distribution of skills towards lower levels of decision-making.

The necessary consolidation of civil society

In all LDCs, a duality persists between the “applied” (real) law that has always existed and resisted since the colonial period, and state, legal and constitutional (formal) law. This situation may be observed in many circumstances, and the original models derived from this law constitute forms of governance. The unilateral nature of state norms, patronage, and the fact that executive powers have the monopoly over administrative “violence” are all factors of dissent that promote the emergence and consolidation of the civil society.

Research undertaken in West African coastal and marine protected areas has highlighted a legal syncretism that is not an exclusive property of the law applied in protected areas but is instead a phenomenon observed in most LDCs. In these countries, the State and its administration negotiate with the civil society in order to achieve their objectives. This negotiation illustrates the revival of societal rights

and, more generally, the vitality of a civil society that is confronted with the state legal takeover of the social space. This negotiated law illustrates the transformation of management models imported from the West. Proposals for MPA governance must take into account the syncretic nature of the legal system and the underlying need to consolidate the civil society.

THE NECESSARY CHANGES IN GOVERNANCE MODUS OPERANDI

Adjustment of institutional and legal statuses

The adjustment of institutional and legal statuses of protected areas does not mean that these should be radically called into question. These are, on the whole, well established, comprehensive and, in theory, have the legal means needed for their implementation. The main problem is the applicability of “top-down” management measures imposed by authorities whose legitimacy and efficacy are called into question. The direct involvement of populations and their representatives should help to re-balance the governance processes.

Breaking down the barriers between conservation and economic activities should be encouraged: (i) through the adoption and application of texts and decrees that regulate downstream economic activities (e.g. fish processing and trade) to avoid negative impacts on exploitation rates or distribution of benefits; (ii) through the redefinition of the role of cooperatives or producer associations as vectors of conservation and socio-economic development, and the revision of their responsibilities; (iii) through the creation of socio-economic observatories of MPAs in order to assess their capacity to adapt to conservation-related constraints, and to understand the social dynamics in order to better aim ongoing and future projects.

It seems desirable to institute a planning structure in order to bring together all the actors and to strengthen governance coherence in each MPA. Within this structure, representatives from central administrations can play a significant role, correcting the lack of relationship and cooperation with actors from the civil society, which often prefer to turn to external donor agencies to develop their local projects. However, in order to position itself as a leader, the State must first regain its legitimacy and its efficiency. Its efficiency is directly related, on the one hand, to its human, logistical and financial capacities – and the example of West Africa shows how impoverished States are – and, on the other hand, to reducing an omnipresent bureaucracy that overburdens procedures and strains an already very limited efficiency. In order to recover greater legitimacy, the functions of administrations, including MPA administrations, must evolve beyond their present control and repression focus (imposed by their lack of resources), opening up to local development programmes and facilitating participatory management projects.

New means of action

Complete decentralization

Incomplete decentralization is particularly obvious in all LDCs where the process is hampered by a solid tradition of state control that rejects traditional

rural communities in favour of technocratic institutions, and leads neither to genuine decentralization nor to a return to ancestral land traditions. Some MPAs are affected by this failure to complete the decentralization process. Thus, in the Saloum Delta Biosphere Reserve in Senegal, the new local authorities have the autonomy to manage administrative and financial affairs and can design local development plans comparable with territorially based public policies. However, they do not have the fiscal resources to match their areas of competence, still less to fulfil their ambitions.

Another unfinished decentralization process can be observed concerning the limits of territorial control. An example is the Bolama Bijagos Archipelago Biosphere Reserve in Guinea-Bissau, where the Bijogo communities of the archipelago manage, for the most part, their land and coastal areas but do not control the maritime zones and the tourism activities, which are managed and controlled by the State using fishing licences as well as permits and other taxes on tourism. The inadequacy of state control resources means that the fisheries sector is dominated by non-resident seasonal migrants who are present in this MPA. Although the installation of a fishing camp by immigrants must be authorized by the local traditional powers, this constraint has little impact on the management of the fishery sector.

Hence, there is a need to complete decentralization and empowerment by delegating fiscal powers to the management authorities of MPAs and recognizing their terrestrial and maritime territorial control, enabling them to regulate fishing capacity and effort when faced with the growing pressure of regional, national or international demand for fisheries products.

Recognized and protected territorial-use rights

In LDCs, MPAs aim to achieve simultaneously the objectives of conserving biodiversity, maintaining the sustainable economic activity of indigenous communities and preserving their culture and heritage. To this end, recommendations concerning MPA governance prescribe the implementation of local mechanisms that increase the responsibility of direct actors, one element of which is the recognition of territorial-use rights.

Exercising use rights must be understood in the broad sense, i.e. with all the legal distinctions applicable to maritime, coastal and territorial areas, as a protected area covers a multitude of miscellaneous uses, which may be complementary, competitive or even conflicting. Most territorial-use rights belong to the category of informal rights and are, therefore, vulnerable as they suffer from a lack of legal “security” – they can disappear or their nature may change during the establishment of an MPA.

A concession can be a way to provide improved legal security for territorial-use rights. It can be defined as a unilateral (authorization or licence) or bilateral (convention and/or contract) legal act whereby the administration grants to an individual or a community the benefits of special rights or privileges. The concession may concern specific areas, and the term “conceded” territory may

then be used. The aim is for territorial-use rights to benefit from both state and traditional legitimacy so that beneficiary communities may legally defend their rights against non-qualified external actors. A concession is of interest as a means to establish community discipline in return for the acquisition of new rights under the conditions defined in its specifications. Formalizing disciplinary principles is fundamental for enforcement, the surveillance of the activity, the resolution of internal conflicts and the fairer distribution of incomes. Often, all these measures already exist in MPA regulations but their design, implementation and enforcement still depend today essentially on the managing administration.

The first difficulty in reconciling territorial-use rights and economic activities concerns the non-recognition of territorial-use rights of residents by the most highly mobile segments of the fishing sector. Such canoe fishing activity with no traditional territorial linkage is no longer artisanal (for subsistence or small commercial production) but follows a commercial and industrial logic.

The second difficulty in reconciling territorial-use rights and economic activities is related to cooperative structures that have been promoted in some protected areas as they were supposed to convey principles of community discipline. Research conducted with the fishers' cooperatives of West African coastal and marine protected areas has shown that they had the tendency to "escape" their founding members and to drift significantly towards institutions encouraging a poorly controlled increase of resource exploitation.

In order to reconcile territorial-use rights and economic activities, it seems desirable to set up fishing concessions, to develop and respect a code of conduct, to control offshore fishing and to promote small cooperatives or producer associations that can be controlled by their members.

MARINE PROTECTED AREAS AS TOOLS OF ENVIRONMENTAL POLICIES

Integration of MPA management into public policies

The term "public policy" must be understood in the broad sense, for example, the national policy regarding the environment or land-use planning. As for MPAs, their management is closer to sectoral management that is part of a wider public policy. External donor agencies (governmental or from NGOs), who are real comanagers of MPAs given their missions, resources and contribution, are the main sponsors of these ad-hoc approaches that support the choices of those in charge. However, the resulting control is more of an internal nature, involving verifying that the acts of the institutions comply in their substance, form and procedure, contributing only indirectly to the analysis of MPA public policies. The integration of MPA management into other public policies calls for the participation of local populations.

Another consequence of the affiliation of MPAs with sectoral programmes is the weak integration of their management into regional or national public policies. At a national level, the integration into poverty reduction strategy papers that determines the directions of LDC development policies must be given priority. At the regional level, many things work against this integration, such as the lack

of harmonization of institutional frameworks, the disparity in natural resource conservation policies, or the hindrances to economic integration. For example, in West Africa, the absence of regulatory arrangements applicable to migratory flows of transboundary populations highlights the weakness in the regional coordination of MPA management. Integration would require the development of a greater coherence between each programme and regional public policies and an improved coordination between the various programmes. It leads to supported and structured interstate regional coordination as exemplified by the Sub-Regional Fisheries Commission, or to a network-based cooperation such as that developed within the framework of the Regional Programme of Coastal and Marine Zone Conservation (PRCM).

Governance of MPAs is not limited solely to state action for the general public interest outside of the market field of action. Initially, the conservation of the environment through the State gradually taking control of a site can be envisaged as a mission of general interest. From this viewpoint, the State remains the main reference for protected area management policies, and its special responsibility should not be underestimated. However, this role is then confronted with the very strong dynamics of these protected areas and all the economic and social actors present within and outside them. Under their impact, the MPA situation evolves continuously and induces, by retroaction, a transformation of the modus operandi of the State that is favourable to mutations in the law and the institutions. Thus, the integration of MPA management into public policies requires taking into account the role of these areas in the transformation of the workings of the State, in the law and in the institutions, which is all part of restructuring of their governance.

Development of planned and comanaged ecotourism

Since the beginning of the 1990s, ecotourism has appeared as an ideal component of a strategy for the sustainable development of MPAs (Agardy, 1993). It is presented as an alternative and viable complement to traditional activities, as the wealth of fauna and flora in these protected areas, as well as their cultural and heritage manifestations, offer an undeniable potential for contemplation and discovery.

The development of ecotourism in LDCs remains at an embryonic stage. It has a marginal role when compared with the classical tourism organized and controlled by external operators. An overview of ecotourism in West African coastal and marine protected areas showed that ecotourist initiatives often remain the prerogative of specialized external actors. As a result, direct financial benefits generally escape the local populations of these areas and are limited to the returns on provision of raw materials of little value, the sale of artisanal products and other souvenirs, and seasonal employment as tourist guides or assistants (Deheunynck *et al.*, 2004).

The first condition for LDC ecotourism to be seen as an option for public policy is for it to be included in a national tourism policy with the objectives of removing administrative obstacles and reducing taxation, which is often

disproportionately high. The second condition is for ecotourism to take into account local needs in terms of education, health and public hygiene, infrastructure and telecommunications. Finally, a last condition for ecotourism to become a component of a sustainable development strategy in MPAs is the comanagement of ecotourism operations that would comply with the respect of indigenous population rights in line with Recommendation 25 of the Durban World Parks Congress in 2003.

From this perspective and at the national level, the development of ecotourism in LDCs must benefit from investments and credit lines in order to strengthen its offer and the organizational capacity of MPA residents. It may require the implementation of a self-funding mechanism based on an evaluation of the willingness-to-pay of visitors to the MPA or of compensation for environmental services rendered by MPA communities (Depondt and Green, 2006; Asafu-Adjaye and Tapsuwan, 2008; Thur, 2010).

7. Conclusion

Jean-Yves Weigel, François Féral and Bertrand Cazalet

The need for adequate governance of MPAs in LDCs is commensurate to the significant territorial stakes created by their extensive maritime zones. Already, a significant part of this domain is officially protected as no fewer than 207 marine areas cover more than 563 000 km², with an average area of 2 720 km². The number of MPAs increases every year, mainly with the multiplication of community-based MPAs, particularly in the South Pacific and to a lesser extent in West Africa. Other challenges are biodiversity conservation (variety and productivity of coral, upwelling, estuarine or delta ecosystems) and issues related to identity claims based on the process of nature ownership development. However, the overriding issue is to reconcile conservation and human presence because human activities are tolerated in almost all LDC MPAs.

Prior to characterizing governance systems, the demographic and economic constraints faced by the governance and legal context of LDC MPAs must be highlighted. Governance of MPAs is subject to a number of constraints, the most important of which are demographic and relate to population densification and the growing mobility of populations residing inside or at the periphery of the areas. This densification is the result of one of the highest birth rates in the world; for example, in West African LDCs, at current rates, the rural population will double every 25 years. The increased population mobility over the last 30 years can be explained in part by the expansion in fishing capacity and in particular by the increase in the number of boats and by motorization.

However, in LDCs, MPA governance also faces two main economic constraints related to deregulation. The first one is the unchecked intensification of natural-resource exploitation (in fisheries, forestry, agriculture and agroforestry). Deregulation has resulted in a drastic reduction in public intervention tools and in administrations that now lack the resources to control this intensification. This illustrates the weakening economic role of States and the absence of management of a public nature. The second economic constraint on MPA governance concerns the growing openness of their economies, which leads to the imposition of a market systems logic and the integration of these areas into the globalization process. This constraint concerns all rural populations in LDCs, but an approach based on a supposedly “indigenous” nature of the populations concerned has often tended to play down and even deny the globalization impact on MPA residents.

The analysis of the legal context reveals the international inspiration behind the conceptual framework, the objectives and the conservation procedures of LDC MPAs. This analysis also leads to the legal definition of an MPA as, in most cases, the circumscription of an administered and regulated area. The study of the legal context shows that, in most LDCs, state and societal law coexist in these protected areas, as they indeed do more broadly in most LDCs where the State

and its administration negotiate with the civil society about how the law should be applied in order to achieve its objectives. Research undertaken in West Africa shows that an MPA is usually the manifestation of a strong legal state control of social space clashing with the resurgence of societal rights. This dual nature generates a new type of original negotiated law, neither entirely state-based nor purely societal, reflecting legal syncretism.

Constraints and legal context are characterizing elements of governance systems. However, such characterization requires the adoption of an analytical framework that draws on four sources of inspiration: (i) the interactive fisheries governance approach largely developed by the Centre for Maritime Research of the University of Amsterdam; (ii) the risk governance approach developed by TRUSTNET; (iii) the socioanthropology of mediations and brokerage, mainly developed by the *École des hautes études en sciences sociales*; and (iv) the governance analytical framework at the initiative of the IUED. The analytical framework presented aims to provide the foundation for a comparative approach applicable to all governance systems. It points to five essential themes that should be explored in order to give operational content to the governance concept:

- definition of governance problems;
- description of the norms with which governance should comply;
- classification of the governance actors;
- identification of the nodal points where actors' strategies clash;
- reconstruction of the process that led to the current governance system.

This analytical framework makes it possible to characterize the different MPA governance systems in LDCs. It has been applied to the two most important West African coastal and marine protected areas: the Banc d'Arguin National Park in Mauritania; and the Bolama Bijagos Archipelago Biosphere Reserve in Guinea-Bissau. Two governance systems have been identified: a hierarchical and instrumentalized system; and a community-based concession system.

The governance system of the Bolama Bijagos Archipelago Biosphere Reserve is based on the devolution of regulatory powers concerning resource access and use to traditional institutions belonging to the social organization of Bijogo society. This community-based concession system, based on the prevailing mutual trust paradigm, is encouraged by the authorities, insofar as a land law recognizes and ratifies all the traditional rights but no higher authority guarantees its public nature. This highlights the main deficiency of this governance system: the lack of resources of traditional institutions to exercise control over the maritime territory together with the weakness of the linkages between traditional and state powers. To remedy this weakness, norms for resource access and use could be jointly established by the residents and the State. Such cooperation could be supported by international NGOs and institutions that have the capacity to generate the necessary mechanisms.

The Banc d'Arguin National Park is an example of an MPA where governance is very strongly influenced by tribal affiliation. The strategic actors, who are the tribal faction chiefs or their representatives, contract obligations and make decisions in

the name of others, placing their authority within the tribal framework. However, the State has the final say, especially when tribal conciliation fails. Therefore, the administration is tempted to operate according to the prevailing top-down paradigm, the only one it really “masters”, but it often runs up against the weight of networks of influence and counterbalancing powers of tribal and regional origin that give the administration (more or less covertly) some of its legitimacy. In particular, the Imraguen populations claim the “compensations” to which they would be entitled given their loss of earnings owing to statutory constraints enacted by the administration. The arguments of legitimization or justification used by these actors reveal divergences, convey antagonisms, and mobilize support, which gives the governance system of the Banc d’Arguin National Park its specificity: a hierarchical and instrumentalized governance system.

The characterization of governance systems highlights their weaknesses, facilitating suggestions about how to restructure governance and the proposal of new public policy options. The main weaknesses concern: the limits of conventional fisheries management; the lack of financial sustainability; the disproportionate role of international NGOs and institutions; an incomplete decentralization process; and the fragmentation of the State and civil society.

The formulation of problems in conventional fisheries management terms does not promote the analysis of the various actors’ practices and interests, and this leads to little or no compliance with the fishery management restrictions. In LDCs, MPA governance is also hampered by the poor, unstable and unsustainable nature of their funding; the best guarantors of long-term funding are international assistance agencies, debt swaps and trust funds as well as an increase in entrance fees, licences and permits. The disproportionate role of international NGOs and institutions must be mentioned. These groups can be seen as eroding the regulatory power of the State rather than strengthening the public management of these areas. Incomplete decentralization is another weakness of MPA governance in LDCs. It manifests itself in the fact that local authorities have few or no fiscal prerogatives in the protected areas. Finally, the fragmentation of the State and civil society hinders local governance of MPAs – the former leads to compartmentalized international aid projects and coordination problems between deconcentrated administrative services within the protected areas; the latter is illustrated by the multiplication of associations, producer groups and local NGOs with very diverse and essentially irreconcilable objectives that undermines the efficacy of the concertation mechanisms.

Restructuring MPA governance in LDCs is essential in order to alleviate its current weaknesses. The two stages needed might be: (i) formalize law-based governance; and (ii) transform the way in which governance functions. Finally, restructuring governance should enable protected areas to become a strategic tool of national environmental policies.

Formalizing law-based governance can be achieved through the creation of coordination structures and the rehabilitation of “lead” administrations, which implies that state authorities recover their legitimacy by simplifying their

administrative processes, improving transparency and developing their functions. Formalizing law-based governance within the framework of the emergence of civil society must promote the participation of the residents of these protected areas in decision-making and public management.

Transforming the way that MPAs in LDCs function requires adapting their legal and institutional statuses and simultaneously adapting the means of action. Adapting the legal and institutional statuses aims at breaking down the barriers between conservation and socio-economic development. It consists, first of all, in establishing and implementing regulatory texts and decrees relating to economic control rules. Three actions can be distinguished. The first is to update the notion of “traditional fishing”, seasonal access rules and the regulation of trading activities and artisanal processing. The second is to redefine the role of cooperatives, producer groups and associations in order to extend their responsibilities in the organization of production and marketing. The third is the creation of socio-economic observatories to help improve the assessment of the systems’ capacity to adapt to conservation constraints on the production and the value enhancement of natural resources and, more generally, to advance understanding of social dynamics so as to better guide ongoing and future conservation projects.

Adapting the means of action requires that decentralization processes, currently incomplete, be finalized. To compensate for the fact that the process remains unfinished, residents’ local authorities should be allocated their own fiscal resources, and genuine administrative deconcentration should be undertaken. The completion of the decentralization and deconcentration process should contribute to removing a major obstacle, i.e. the weak relations between residents of these protected areas and the deconcentrated services. However, adapting means of action also requires the recognition and the guarantee of territorial-use rights in line with the recommendations of international conferences. Concession models, in the legal sense of the term, seem the most appropriate to the notion of territory building in the protected space. Concession gives territorial-use rights a double (State and traditional) legitimacy so that beneficiary communities may legally exercise their rights over a territory against non-qualified external actors. The interest of a concession is to establish community discipline in return for the acquisition of new rights under the conditions set out in the area specifications or in a code of conduct.

By transforming the way MPAs function in LDCs, this restructuring of governance should enable protected areas to become a strategic tool of national environmental policies. Integrating conservation projects into other sectoral policies requires that they be considered a part of a wider public policy and that the strong social and economic dynamics that characterize them are taken into account. These dynamics result in the MPA situation evolving continuously, and this, in turn, would cause a transformation in how the State functions that is favourable to mutations in both the law and the institutions.

A specific option of environmental public policy, ecotourism development, is often presented as an alternative and a viable complement to traditional

activities, especially given the great potential offered by the rich fauna and flora of these protected areas. However, this overview of West African coastal and marine protected areas reveals more or less serious weaknesses in the planning, integration and organization of ecotourism, and leads to the recommendation that its development should be community-based. Depending on the protected area, the assessment leads to stressing either the modalities for ecotourism community development, planning and comanagement or integration into the prevailing tourism pattern.

More generally, MPA governance in LDCs is hampered by the absence of a system to monitor public actions and policies, and this contributes to the weaknesses observed. However, the World Commission on Protected Areas has identified monitoring as one of eight critical factors in MPA performance. It questioned, on the one hand, the modalities for monitoring and assessing the efficiency of biodiversity conservation and management efforts *in situ* and, on the other hand, the modalities for communicating this information to citizens and public decision-makers. Data should be collected regularly and processed in order to show the true efforts deployed in management and their efficacy in terms of achieving objectives concerning ecosystem conservation and the improvement of the well-being of the local population.

References

- Abrams, P., Borrini-Feyerabend, G., Gardner, J. & Heylings, P. 2003. *Evaluating governance. A handbook to accompany a participatory process for a protected area.* Draft for field testing. Parks Canada and TILCEPA. IUCN CEESP/WCPA.
- Agardy, M.T. 1993. Accommodating ecotourism in multiple use planning of coastal and marine protected areas. *Ocean and Coastal Management*, 20(3): 219–239.
- Alban, F. 2003. *Contribution à l'analyse économique des aires marines protégées. Applications à la rade de Brest et à la mer d'Iroise.* Université de Bretagne Occidentale. (thèse de doctorat)
- Asafu-Adjaye, J. & Tapsuwan, S. 2008. A contingent valuation study of scuba diving benefits: case study in Mu Ko Siliman Marine National Park, Thailand. *Tourism Management*, 29: 1122–1130.
- Beaurain, C. & Bertrand, E. 2009. La transaction dans l'économie institutionnaliste américaine: de Commons à Coase. *Pensée Plurielle*, 20: 13–24.
- Boncœur, J., Roncin, N. & Kane, A. 2009. *GP2 : Indicateurs socio-économiques. État d'avancement des travaux sur le site du Parc National du Banc d'Arguin.* UBO (UMR ARMURE)/IMROP.
- Boncœur, J., Noël, J-F, Sabourin, A. & Tsang King Sang, J. 2007. La gouvernance des aires marines protégées : le projet de parc marin en mer d'Iroise, un exemple de processus participatif ? *Mondes en développement*, 35(108): 77–92.
- Bouso, T. 1996. *La pêche artisanale dans l'estuaire du Sine-Saloum. Approches typologiques des systèmes d'exploitation.* Université de Montpellier II. (thèse de doctorat)
- Cardoso, L. 2002. *Criação e evolução da RBABB, povoamento e fluxo migratorio, entidades geopolíticas e gestão do espaço.* CONSDEV Documento de trabalho/WP1/04. Bissau, INEP/UICN. 20 pp.
- Carter, D.W. 2003. Protected areas in marine resource management: another look at the economics and research issues. *Ocean & Coastal Management*, 46: 439–456.
- Centre national de la recherche océanographique et des pêches (CNROP). 2000. *Rapport scientifique 1997–1998. Evaluation de la ressource halieutique du Parc National du Banc d'Arguin.* Projet ACGEBA. Nouadhibou, Mauritanie.
- Chaboud, C. & Galletti, F. 2007. Les aires marines protégées, catégorie particulière pour le droit et l'économie ? *Mondes en développement*, 35(108): 27–42.
- Chakalallah, B., Mahon, R., McConney, P., Nurse, L. & Oderson, D. 2007. Governance of fisheries and other living marine resources in the Wider Caribbean. *Fisheries Research*, 87: 92–99.
- Charles, A.T. & Sanders, J. 2007. Issues arising on the interface of marine protected areas and fisheries management. In *FAO. Report and documentation of the Workshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations*, pp. 301–332. FAO Fisheries Report No. 825. Rome, FAO. 332 pp.

- Cheikh, A.W.O.** 2003. *Modes d'accès et de régulation de l'accès aux ressources naturelles renouvelables. Le Parc National du Banc d'Arguin*. CONSDEV Document de travail/WP3/01. Nouakchott, PNBA/IRD. 54 pp.
- Cheikh, A.W.O.** 2009. *Rapport de mission au Parc National du Banc d'Arguin du 5 au 17 avril 2009. Observations préliminaires sur la gouvernance du PNBA*. Projet AMPHORE, GT4.
- Cheikh, A.W.O. & Mohamed Ould Saleck, A.** 2002. *Approche historique. Création et évolution du PNBA, peuplement et identité Imraguen, gouvernance locale*. CONSDEV Document de travail/WP1/02. Nouakchott, Université de Nouakchott/PNBA. 28 pp.
- Chérif, A.M.** 2002. *Étude de marché et rentabilité de la transformation des produits de pêche artisanale dans les villages imraguen*. Nouakchott, GTZ/PNBA/UICN/DEARH/FIBA. 97 pp.
- Cho, L.** 2005. Marine protected areas: a tool for integrated coastal management in Belize. *Ocean and Coastal Management*, 48: 932–947.
- Christie, P. & White, A.T.** 2007. Best practices in governance and enforcement of marine protected areas: an overview. In *FAO. Report and documentation of the Workshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations*, pp. 183–220. FAO Fisheries Report No. 825. Rome, FAO. 332 pp.
- Christie, P., McCay, B.J., Miller, M.L., Lowe, C., White, A.T., Stoffle, R., Fluharty, D.L., Talaue-McManus, L., Chuenpagdee, R., Pomeroy, C., Suman, D.O., Blount, B.G., Huppert, D., Villahermosa Eisma, R.L., Oracion, E., Lowry, K. & Pollnac, R.B.** 2003. Towards developing a complete understanding: a social science research agenda for marine protected areas. *Fisheries*, 28(12): 22–26.
- Cicin-Sain, B. & Belfiore, S.** 2005. Linking marine protected areas to integrated coastal and ocean management. A review of theory and practice. *Ocean and Coastal Management*, 48: 847–868.
- Coherence of Conservation and Development Policies of Coastal and Marine Protected Areas in West Africa (CONSDEV).** 2003. *États statistiques de l'enquête*. CONSDEV Working Documents. Trans-Work packages/03/04/05 Document de travail/Enquête statistique. Dakar, IRD/PNBA/DPN/UICN. 1437 pp.
- Cole, H.** 2003. Contemporary challenges: globalisation, global interconnectedness and that 'there are not plenty more fish in the sea.' Fisheries, governance and globalisation: is there a relationship? *Ocean and Coastal Management*, 46(1–2): 77–102.
- Costanza, R., Andrade, F., Antunes, P., van den Belt, M., Boesch, D., Boersma, D., Catarino, F., Hanna, S., Limburg, K., Low, B., Molitor, M., Gil Pereira, J., Rayner, S., Santos, R., Wilson, J. & Young, M.** 1999. Ecological economics and sustainable governance of the oceans. *Ecological Economics*, 31(2): 171–187.
- Dahou, T.** 2004. *La grande pêche artisanale offshore basée à Ziguinchor (Rapport de mission)*. CONSDEV Document de travail/WP2/11. Dakar, IRD. 8 pp.
- Dahou, T. & Weigel, J.-Y.** 2003. *Modes d'accès et de régulation de l'accès aux espaces et aux ressources naturelles renouvelables: la réserve de biosphère du delta du Saloum*. CONSDEV Document de travail WP3/02. Dakar, IRD. 32 pp.

- Dahou, T., Weigel, J.Y., Mohamed Ould Saleck, A., Da Silva, A.S., Mbaye, M. & Noel, J-F. 2004. La gouvernance des aires marines protégées : leçons ouest-africaines. *Vertigo*, 5(3) [online].
- Da Silva, A.S. 2003. *Modos de regulacao do acesso aos recursos naturais renovaveis. à Reserva da Biosfera do Arquipelago Bolama-Bijagos*. CONSDEV Documento de trabalho WP3/03. Bissau, UICN/IRD. 67 pp.
- Da Silva, A.S. 2005. *Enquête par échantillonnage dans les campements de pêche de la réserve de biosphère de l'Archipel Bolama-Bijagos*. CONSDEV Document de travail/WP2/13. Bissau, UICN/IRD. 14 pp.
- Deheunynck, A., Da Silva, A.S., Biai, J., Mohamed Ould Saleck, A., Ould Mohamed Saneh, M. & Diémé, S. 2004. *L'écotourisme dans les aires marines protégées d'Afrique de l'Ouest: bilan et modalités d'une alternative de développement et de politique publique (PNBA, RBDS, RBAB)*. CONSDEV Document de travail/WP6/01. Dakar, IRD/UICN/PNBA/DPN. 75 pp.
- Dème, M. 2004. *Les systèmes de production et de valorisation des ressources halieutiques. La réserve de biosphère du delta du Saloum*. CONSDEV Document de travail/WP2/07. Dakar, CRODT. 50 pp.
- Dème, M. & Diadiou, H.D. 1990. *Pêche des pirogues glacières à la ligne en Casamance. Aspects biologiques et socio-économiques*. Dakar, CRODT. 28 pp.
- Dème, M., Diadiou, H.D. & Thiam, D. 2000. *Recensement des unités de pêche dans les zones géographiques du fleuve Sénégal et du complexe deltaïque du Sine-Saloum en 1999*. Dakar, CRODT/ISRA/UICN. 42 pp.
- Depondt, F. & Green, E. 2006. Diving user fees and the financial sustainability of marine protected areas: opportunities and impediments. *Ocean and Coastal Management*, 49(3-4): 188-202.
- Duarte, A, Biai, J., Da Silva, A.S. & Weigel, J.Y. 2005. *Dinamica demografica, economica e social*. CONSDEV/Document de travail/WP2/10. Bissau, UICN/IRD. 18 pp.
- Ehler, C.N. 2005. Integrating management of marine protected areas with coastal and ocean governance : principles and practices. *Ocean and Coastal Management*, 48(11-12): 843-846.
- Eichbaum, W.M. & Agardy, T. 1995. *The Role of Marine Protected Areas in Comprehensive Marine Governance. Proceedings of the Second International Symposium and Workshop on Marine and Coastal Protected Areas: Integrating Science and Management*. Washington, DC., Office of Ocean and Coastal Resource Management, NOAA, and the U.S. Man and the Biosphere Program.
- Fall Ould Mouhamedou, M. 2003. *Analyse des politiques publiques liées aux aires marines protégées. Le parc national du Banc d'Arguin*. CONSDEV Document de travail/WP4/01. Nouakchott, Université de Nouakchott. 37 pp.
- Fanning, L., Mahon, R., McConney, P., Angulo, J., Burrows, F., Chakalalla, B., Gil, D., Houghton, M., Heileman, S., Martinez, S., Ostine, L., Oviedo, A., Parsons, S., Phillips, T., Santizo Arroya, C., Simmons, B. & Toro, C. 2007. A large marine ecosystem governance framework. *Marine Policy*, 31(4): 434-443.
- FAO. 2003. *Fisheries management. The ecosystem approach to fisheries*. FAO Technical Guidelines for Responsible Fisheries No 4, Suppl. 2. Rome. 112 pp.

- FAO. 2007. *Report and documentation of the Workshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations*. FAO Fisheries Report No. 825. Rome. 332 pp.
- Fondation internationale du Banc d'Arguin (FIBA). 2008. *Rapport d'activités 2008*. Gland, Switzerland.
- Fishery Committee for the Eastern Central Atlantic (CECAF). 2004. *Report on the third session of the Scientific Committee. Lomé, Togo, 24–26 February 2004*.
- Galletti, F. 2002. *Les transformations de l'État et du droit public en Afrique francophone*. Université de Perpignan. (thèse de doctorat de droit public)
- Garcia, S.M. & Charles, A.T. 2008. Fishery systems and linkages: implications for science and governance. *Ocean and Coastal Management*, 51(7): 505–527.
- Garcia, S.M. & Hayashi, M. 2000. Division of the oceans and ecosystem management; a contrastive spatial evolution of marine fisheries. *Ocean and Coastal Management*, 43(6): 445–474.
- Gascuel, D. & Laurans, M. 2001. Évaluation des stocks par l'approche globale et évolutions d'abondance. Synthèse du groupe de travail 'Analyses monospécifiques' de Mindelo, octobre 2001. In FAO. *Évaluations des stocks démersaux en Afrique du Nord-Ouest. Travaux du Groupe «Analyses monospécifiques» du projet SIAP*. Rome, FAO. 117 pp.
- Gibbs, M.T. 2008. Network governance in fisheries. *Marine Policy*, 32: 113–119
- Gladstone, W., Krupp, F. & Younis, M. 2003. Development and management of a network of marine protected areas in the Red Sea and Gulf of Aden region. *Ocean and Coastal Management*, 46(8): 741–761.
- Grafton, R.Q. 2005. Social capital and fisheries governance. *Ocean and Coastal Management*, 48(9–10): 753–766.
- Grafton, R.Q., Hilborn, R., Ridgeway, L., Squires, D., Williams, M., Garcia, S., Groves, T., Joseph, J., Kelleher, K., Kompas, T., Libecap, G., Lundin, C.G., Makino, M., Matthiasson, T., McLoughlin, R., Parma, A., San Martin, G., Satia, B., Schmidt, C.-C., Tait, M. & Zhang, L.X. 2008. Positioning fisheries in a changing world. *Marine Policy*, 32(4): 630–634.
- Gray, T., ed. 2005a. *Participation in fisheries governance*. Dordrecht, Netherlands, Springer.
- Gray, T. 2005b. Theorising about participatory fisheries governance. In T. Gray, ed. *Participation in fisheries governance*, pp. 1–25. Dordrecht, Netherlands, Springer.
- Guèye, A. 2003. *Projet politique des aires marines protégées au Sénégal*. CONSDEV Document de travail WP4/02. Dakar, UCAD. 35 pp.
- Halim, Y. & Morcos, S., eds. 1995. *Workshop on Oceanographic Input to Integrated Coastal Zone Management in the Red Sea and Gulf of Aden. Jeddah, Saudi Arabia, 8 October 1995*. Paris, UNESCO.
- Hanna, S.S. 1997. The new frontier of American fisheries governance. *Ecological Economics*, 20: 221–233.
- Hatcher, A. & Robinson, C. 1999. Overcapacity, overcapitalisation and subsidies in European fisheries. In: *Proceedings of the first Concerted Action workshop on economics and the Common Fisheries Policy. Portsmouth, U.K. 28–30 October 1998*. CEMARE Misc. Paper M44.

- Hennessey, T. & Sutinen, J.G., eds. 2005. *Sustaining large marine ecosystems: the human dimension*. Elsevier.
- Henry, C. 1994. *Les îles où dansent les enfants défunts. Age, sexe et pouvoir chez les Bijogo de Guinée-Bissau*. Paris, CNRS-Editions.
- Herry, C. 2003. *Les pêcheurs de l'estuaire du fleuve Gambie. Projet FAC "Dynamiques de gestion, d'exploitation et de valorisation des pêcheries estuariennes des États Membres de la CSRP"*. Dakar, novembre 2003, PEAO/3. Paris, CNRS-Editions.
- Heylings, P. & Bravo, M. 2007. Evaluating governance: a process for understanding how co-management is functioning, and why, in the Galapagos Marine Reserve. *Ocean and Coastal Management*, 50(3–4): 174–208.
- Hufty, M. 2007. La gouvernance est-elle un concept opérationnel ?, *Fédéralisme régionalisme*, Volume 7: 2007 Numéro 2 - Société civile, globalisation, gouvernance: aux origines d'un nouvel ordre politique ? [online]. <http://popups.ulg.ac.be/federalisme/document.php?id=635>
- Hufty, M., Dormeier Freire, A., Plagnat, P. & Neumann, V. 2007. *Jeux de gouvernance. Regards et réflexions sur un concept*. Paris, Karthala-IUED. 242 pp.
- Institut mauritanien de recherches océanographiques et des pêches (IMROP). 2004. *Description de l'activité de pêche au niveau du parc national du Banc d'Arguin*. Projet VDPI. Nouadhibou, Mauritania, Institut mauritanien de l'océanographie et des pêches.
- Jentoft, S. 2005. Fisheries co-management as empowerment. *Marine Policy*, 29: 1–7.
- Jentoft, S. 2006. Beyond fisheries management: the phronetic dimension. *Marine Policy*, 30(6): 671–680.
- Jentoft, S., van Son, T.C. & Bjørkan, M. 2007. Marine protected areas: a governance system analysis. *Human Ecology*, 35(5): 27–42.
- Juda, L. & Hennessey, T. 2005. Government profiles and the management of the uses of large marine ecosystems. In: *Large Marine Ecosystems*, Volume 13, pp. 83–109
- Kooiman, J., ed. 1993. *Modern governance: new government–society interactions*. Sage, London.
- Kooiman, J., Bavinck, M., Jentoft, S. & Pullin, R., eds. 2005. *Fish for life: interactive governance for fisheries*. Amsterdam, Netherlands, Amsterdam University Press.
- Mahon, R., Fanning, L. & McConney, P. 2008. A governance perspective on the large marine ecosystem approach. *Marine Policy*, 33: 317–321.
- Mendes Fernandes, R. 1984. *La problématique du changement de la structure familiale chez les Bijagos*. Université de Paris VIII Saint-Denis. (mémoire de maîtrise)
- Mendes Fernandes, R. 1989. O espaço e o tempo no sistema político bidjogó. *Soronda*, n° 8 Julho 89, INEP: 3–24.
- Mohamed Ould Saleck, A., Limam, A. & Weigel, J.Y. 2005. *Démographie et économie du PNBA*. CONSDEV Document de travail/WP2/11. Nouakchott, PNBA/IRD. 18 pp.
- Morand, P. 2003. *Stratégie d'échantillonnage et méthode d'enquête* [online]. IRD. Ref.: CONSDEV Working Document/Trans-Work Packages/01. MPA Global. www.mpaglobal.org
- National Research Council. 2001. *Marine protected areas: tools for sustaining ocean ecosystem*. Washington, DC, National Academy Press. 272 pp.

- Noël, J.-F. & Weigel, J.-Y. 2007. Marine protected areas: from conservation to sustainable development. *International Journal of Sustainable Development*, 10(3): 233–250.
- Olivier de Sardan, J.-P. 1998. *Anthropologie et développement: Essai en socio-anthropologie du changement social*. Paris, APAD-Karthala.
- Pomeroy, R.S. & Rivera-Guieb, R. 2006. *Fishery co-management. a practical handbook*. Ottawa, IDRC.
- Pomeroy, R. & Viswanathan, K. 2003. Experiences with fisheries co-management in South-East Asia and Bangladesh. In D. Wilson, J. Nielsen & P. Degnbol, eds. *The fisheries co-management experience: accomplishments, challenges and prospects*, pp. 99–115. London, Kluwer Academic Publishers.
- Pomeroy, R.S., Mascia, M.B. & Pollnac, R.B. 2007. Marine protected areas: the social dimension. In FAO. *Report and documentation of the Workshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations*, pp. 149–181. FAO Fisheries Report No. 825. Rome, FAO. 332 pp.
- Pomeroy, R., Parks, J.E. & Watson, L.M. 2004. *How is your MPA doing? A guidebook of natural and social indicators for evaluating marine protected area management effectiveness*. Gland, Switzerland, IUCN. 215 pp.
- Portman, M. 2007. Coastal protected area management and multi-tiered governance: the Cape Cod Model. *Journal of Coastal Conservation*, 11:121–131
- Prats, J. 2001. *Gobernabilidad democrática para el desarrollo humano* [online]. Inter-American Development Bank. www.iadb.org/etica/documentos/pra_gober.pdf
- Quade, D. 2003. *Projet politique et fonctionnement juridique d'une aire marine protégée. La réserve de biosphère de l'Archipel Bolama Bijagos*. CONSDEV Document de travail /WP4/03. Bissau, UICN/Université de Perpignan. 44 pp.
- Reid-Grant, K. & Bhat, M.C. 2009. Financing marine protected areas in Jamaica: an explanatory study. *Marine Policy*, 33: 128–136.
- Rhodes, R.A.W. 1996. The new governance: governing without government. *Political Studies*, 44(4): 652–667.
- Symes, D. & Phillipson, J. 1999. Co-governance in EU fisheries: the complexity and diversity of fishermen's organisations in Denmark, Spain and the UK. In J. Kooiman, M. van Vliet & S. Jentoft, eds. *Creative governance: opportunities for fisheries in Europe*, pp. 59–93. Aldershot, UK, Ashgate.
- Talbot, D. 2006. *La gouvernance locale, une forme de développement local et durable? Une illustration par les pays, développement durable et territoire* [online]. Dossier 7: Proximité et environnement, mis en ligne le 29 avril 2006. URL:<http://developpementdurable.revues.org/document2666.html>.
- Techera, E.J. 2006. Samoa: law, custom and conservation. *New Zealand Journal of Environmental Law*, 10: 361–379.
- Thur, S.M. 2010. User fees as sustainable financing mechanisms for marine protected areas: an application to the Bonaire National Marine Park. *Marine Policy*, 34(1): 63–69.

- Townsend, R.E. 1995. Fisheries self-governance: corporate or cooperative structures? *Marine Policy*, 19: 39–45.
- UNESCO. 2000. *La solution du puzzle: l'approche écosystémique et les réserves de biosphère*. Paris.
- Weigel, J.Y. 2005. *Démographie et économie de la Réserve de Biosphère du Delta du Saloum (RBDS)*. CONSDEV Document de travail/WP2/12. Dakar, IRD. 13 pp.
- Weigel, J.Y. 2008. *La gouvernance des aires marines protégées dans la littérature halieutique*. Projet AMPHORE. Document de travail 4.1. 14 pp.
- Weigel, J.Y. & Dahou, T. 2007. La gouvernance locale et ses impasses. In J.Y. Weigel, F. Féral, & B. Cazalet, eds. *Les aires marines protégées d'Afrique de l'Ouest. Gouvernance et politiques publiques*, pp. 141–166. Perpignan, France, Presses Universitaires de Perpignan.
- Weigel, J.Y., Féral, F. & Cazalet, B., eds. 2007. *Les aires marines protégées d'Afrique de l'Ouest. Gouvernance et politiques publiques*. Perpignan, France, Presses Universitaires de Perpignan. 232 pp.
- Weigel, J.Y., Mohamed Ould Saleck, A. & Mint Harbi, V. 2009. *Les indicateurs de gouvernance des aires marines protégées. Application au Parc National du Banc d'Arguin (Mauritanie)*. Communication à la réunion du Projet AMPHORE. (IFREMER Nantes, 2-4 novembre 2009).
- Weigel, J.Y., Schmitz, J. & Fontenelle, G. 2009. *Les indicateurs de gouvernance des aires marines protégées. État de l'art, sélection et application à l'aire marine protégée communautaire de Bamboung (Sénégal)*. Communication à la réunion du Projet AMPHORE. (IFREMER Nantes, 2-4 novembre 2009).
- Weigel, J.Y., Morand, P., Féral, F., Da Silva, A.S., Mohamed Ould Saleck, A., Diémé, S., Stomal, B. & Cazalet, B. 2004. *Achievements and methodological lessons of a sample survey for the Governance of Coastal and Marine Protected Areas in West Africa*. CONSDEV Synthesis/Trans-Work Packages. IRD/Université de Perpignan/UICN/PNBA/DPN/RESED.
- Wilson, D.C., Raakjær Nielsen, J. & Degnbol, P., eds. 2003. *The fisheries co-management experience. accomplishments, challenges and prospects*. Dordrecht, Netherlands, Kluwer Academic Publishers. 348 pp.
- World Commission on Protected Areas (WCPA)/International Union for Conservation of Nature (IUCN). 2007. *Establishing networks of marine protected areas: a guide for developing national and regional capacity for building MPA networks*. Non-technical summary report.
- World Database on Protected Areas. 2011. *World Database On Protected Areas* [online]. www.wdpa.org
- Worms, J. & Mouloud Ould Eida, A. 2002. *Savoirs traditionnels des Imraguen liés à la pêche (PNBA)*. CONSDEV Document de travail /WP1/05. Nouakchott, PNBA. 14 pp.

This document is a synthesis of *Les aires marines protégées d'Afrique de l'Ouest. Gouvernance et politiques publiques* (Weigel et. al, 2007) which proposes an analytical framework to study the governance of MPAs in the LDCs, drawing on four sources of inspiration: (i) the interactive fisheries governance approach; (ii) the risk governance approach; (iii) the socioanthropology of mediations and brokerage; and (iv) the governance analytical framework. The framework indicates the five issues that must be addressed in order to operationalize the concept of governance in LDC MPAs: (i) definition of the problem or the issue at stake; (ii) identification of the set of relevant governance norms; (iii) presentation of the actors involved in the governance process; (iv) highlighting the nodes around which actors' strategies converge; and (v) recalling the processes that have led to the current state of governance. This analytical framework makes it possible to characterize the governance system of each of the MPAs considered and to develop a typology of these systems. The characterization of different governance systems highlights their weaknesses and paves the way for new public policy options and, more generally, for the restructuring of governance to correct these weaknesses.

In order to develop an analytical framework and the characterization of governance systems the main MPA governance principles and constraints, as well their legal context, were clarified. This was done by testing the proposed methodology in three West African coastal and marine protected areas, which illustrated the difficulties of governance in LDCs: 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. The analysis of demographic and economic constraints in these West African MPAs showed the importance of: (i) increasing population density and mobility; (ii) the intensification of resource exploitation; and (iii) and the opening of the MPA economy. The analysis of the legal and institutional contexts showed the international inspiration of the MPA objectives and conservation arrangements, and the syncretism of the legal system.

