

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)

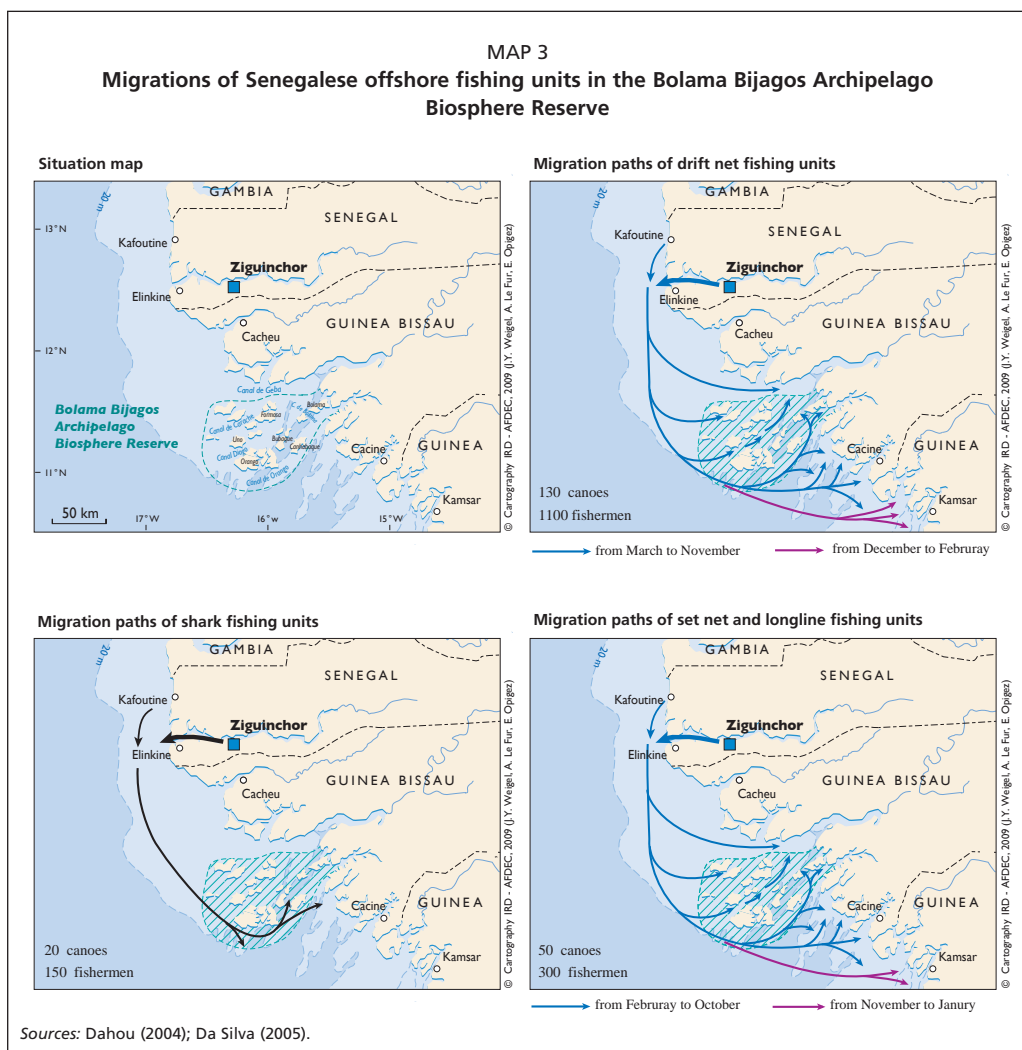
Alfredo Simao Da Silva

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 Lebous 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

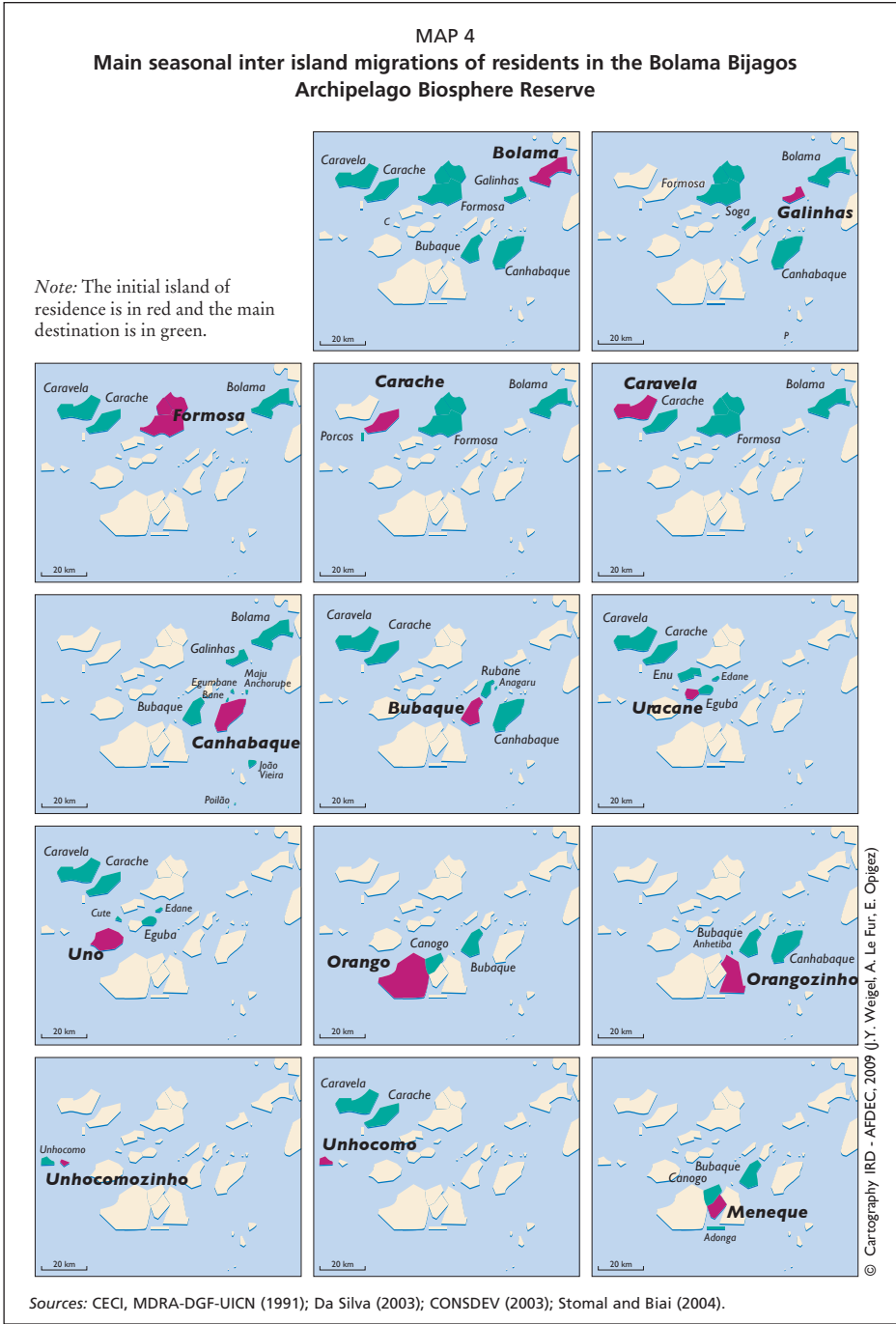
BOX 2

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 (djoŕçon) 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



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).

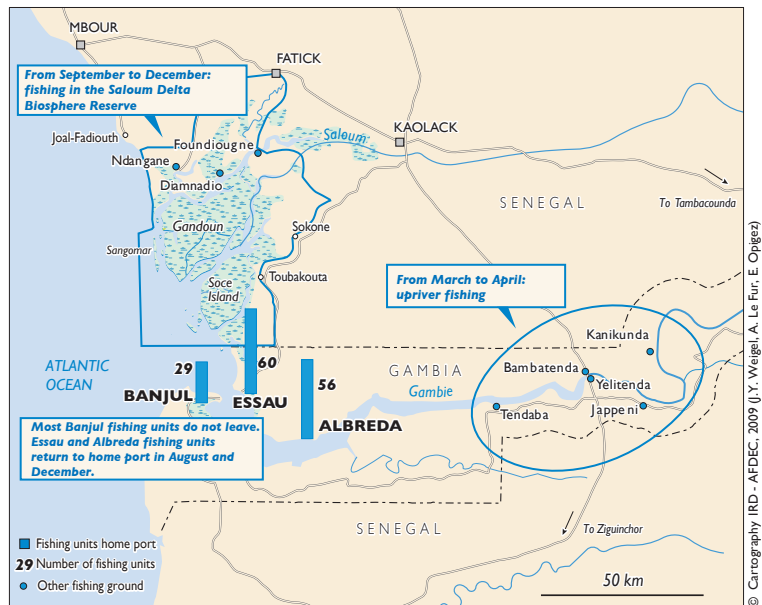
Subalbe migrants are organized into fishing companies that, on average, consist of six men including the company leader and operate a motorized canoe capable of towing several smaller ones. The company leaders, as owners of the motorized canoe and sometimes also of the individual canoes of young fishers, 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

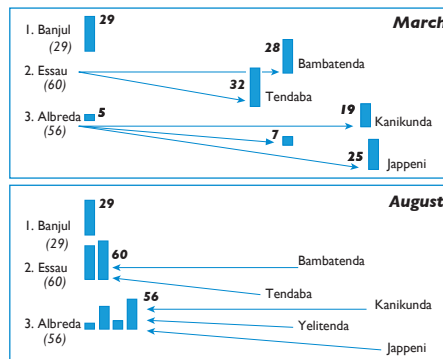
The unchecked increase in exploitation concerns fishery, forestry (lumber, fuelwood and charcoal) and even agricultural or agroforestry resources (cashew trees and oil-palms). In the case of fishery resources, the increased exploitation is the result of the development of artisanal fisheries, amplified 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

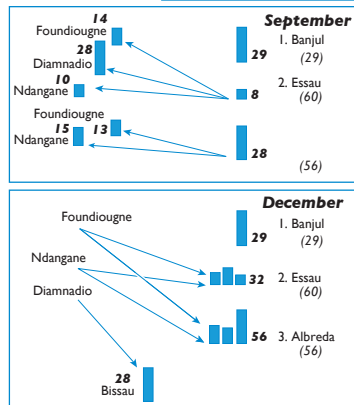


Sources: Herry (2003); Weigel et al. (2001); Schmitz (2003).

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 (Bousso, 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



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

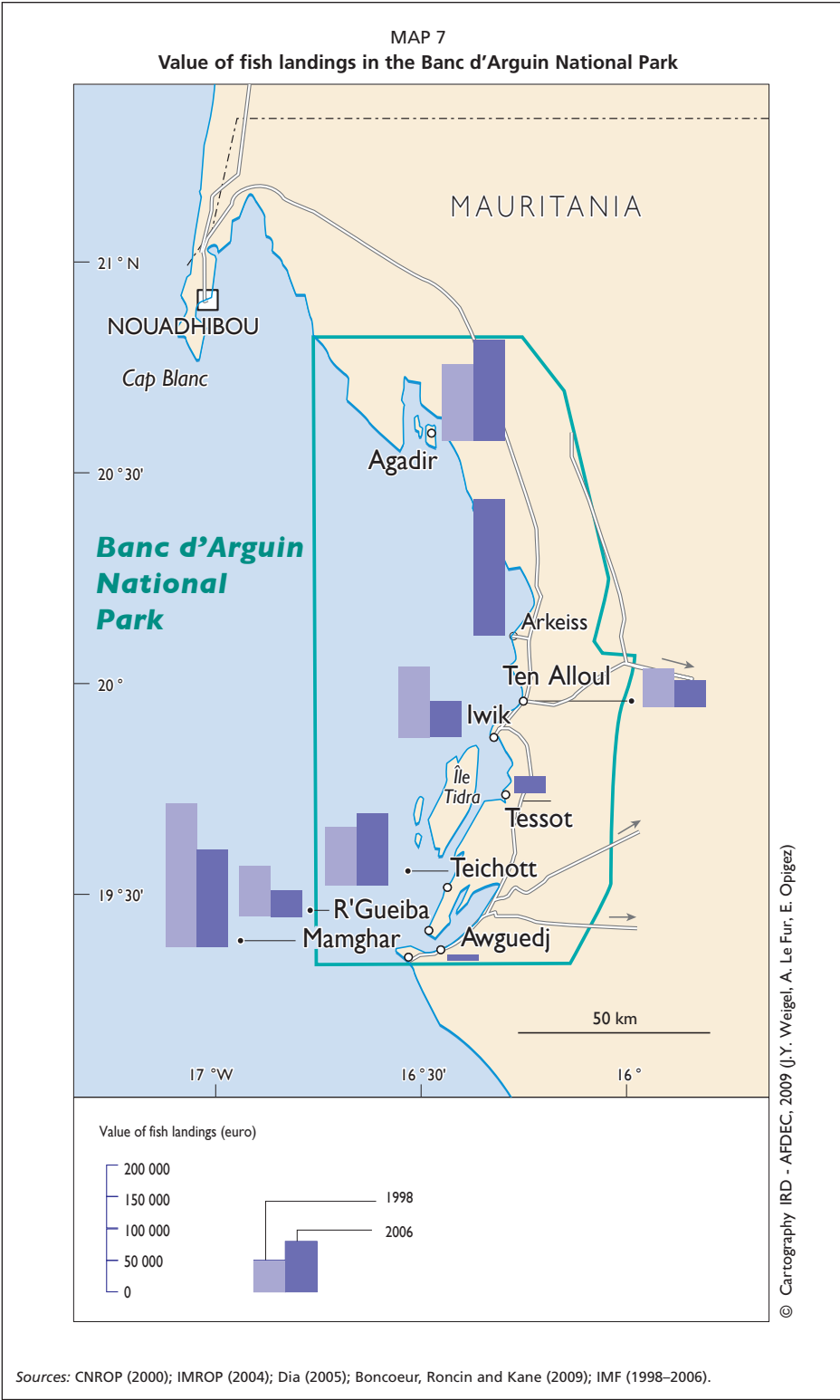
Abdelkader Ould Mohamed-Saleck and Jean-Yves Weigel

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.

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Edited by

Jean-Yves Weigel

Economist

IRD Research Director

UMR PRODIG

France

François Féral

Professor of Public Law

CERTAP, University of Perpignan

France

and

Bertrand Cazalet

Legal expert

CERTAP, University of Perpignan

France