

Migration of artisanal fishers in West Africa: 50 years of observation.

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Abstract

This paper presents the migration dynamics of artisanal fisheries in West Africa from 1970 to 2020. It is based on a review of the literature and the results of surveys conducted in the late 2000's and early 2020's. Three main periods characterize the evolution of West African fishermen's migration. From 1970 to 1980, recurrent droughts pushed an abundant labor force to the coast, which the increasing motorization of pirogues allowed to be shipped to distant fishing grounds. However, migrant fishing remains seasonal. From 1980 to 2000, political conflicts and civil wars forced large sections of the population of Casamance, Guinea-Bissau, Sierra Leone and Liberia to leave and open fishing camps in remote or island locations. The overexploitation of coastal fish stocks is also intensifying migratory movements to seek fish where they are still abundant. Migratory fishing has become a permanent activity. From the 2000's onwards, a new dynamic was established due to the increased restrictions on access to fishing areas. Migrant fishermen are increasingly involved in the fish production and processing circuits of the host countries and are gradually disconnecting from their country of origin. Knowing that migrant fishing represents 20% of the total catch in West Africa, understanding the dynamics is a prerequisite for defining a policy and measures to control this unregulated, unreported and often illegal activity.

Keywords: Migration, Artisanal fishermen, Technological change, West Africa, Coastal fish stocks

Introduction

For decades, migratory fishing has occupied an important and very special place in West African artisanal fishing [1]. This dynamism is marked by the high mobility of its catching units [2]. More than 5,000 fishermen are involved in migration in the seven countries of the Sub Regional Fisheries Commission (SRFC). The Guet-ndarians of Senegal, the Fanti of Ghana and the Temnes of Sierra-Leone are the main ethnic groups involved in migratory fishing [3]. The influence exerted by these groups of fishermen in the various host countries, thanks to technological development, led to the emergence in the 1970s of the Soussous of Guinea, the Diolas of Casamance and the indigenous fishermen of the Gambia river. The political, economic, social and environmental context is constantly reshaping the migration pattern. Migrant fishing now represents more than 20% of the total catch in West Africa [4]. Production and processing circuits increasingly involve migrant fishermen. Although this migration of fishermen continues to drive artisanal fisheries, it is currently absent from public policies.

This article aims to present the migration dynamics of artisanal fisheries in West Africa over the last fifty years. The results are based on a review of the literature on the migration of West African fishermen. National and regional reports on the projects "regional capacity building for fisheries management in West Africa (REGARGAO)" and "management and

resilience of small pelagic fisheries in West Africa (GREPPAO)" provided information that is missing from this literature. Surveys carried out in the late 2000's and early 2020's have allowed for an analysis of the migration of artisanal fishers. The added value of this article lies in the juxtaposition of the history of migrant fishing proposed by Chauveau from 1880-1980 and more recent work on the evolution of the migratory processes of African fishermen [5]. Admittedly, for the latter, this is a completely different context, but not to the extent of breaking an intellectual continuity. Presenting a chronological analysis of the migratory dynamics of artisanal fisheries from 1970 to 2020 is a task that has not yet received any particular attention. However, this preliminary step is an imperative one in order to inform and frame public policies on artisanal fishing [6].

The article is divided into three parts. The first part focuses on the method. The second part analyses the migratory dynamics in the light of the political, economic, social and environmental context in which it is embedded. Finally, the third and last part discusses the need to take migrant fisheries into account in public policies.

Literature Review

The documentary sources consulted were taken from electronic databases and concerned in particular the migration of artisanal

fishermen in French speaking countries (Senegal, Mauritania, Guinea-Conakry). The one available for Gambia, Guinea-Bissau and Sierra Leone is sometimes difficult to obtain. This rich documentation on the subject of migrant fisheries focuses for the most part on a limited maritime area [7-10]. The national and regional reports of REGARGAO and GREPPAO have helped to overcome these difficulties. This theoretical work has made it possible, on the one hand, to update knowledge on the issue and on the other hand to carry out a chronological analysis of West African fishermen's migrations.

Interview with migrant fishermen

In addition to the literature review, over 100 migrant fishers were interviewed during the years 2000 and 2020. These fishermen were selected from the main fishing sites visited according to their age, locality of origin and their position within the production unit [11]. They were active fishermen and retired fishermen in order to have a diversity of views on migration. These interviews (individual and collective) were conducted on the basis of an interview guide [12]. The population interviewed was made up of groups of fishermen who migrated from their country of origin to the host country in order to gain a better understanding of the choice of destinations and the context in which the movements were made. These interviews helped to situate the evolution of migration in time and space and to enrich our documentation on migration in recent years. Observations from this article, made in parallel by the authors in the context of their different research work, have also allowed us to better understand the logic and strategies adopted by migrant fishermen [13].

Framework of the study

The maritime area of West African countries is approximately 2,160,000 km². It includes waters under the jurisdiction of coastal and island states. These physical and biological characteristics explain the strong presence of fisheries resources [14]. Sometimes, some of these species such as small pelagic are characterized by a wide distribution and dynamics along the West African coast. Migratory behavior (mostly small pelagic) and the availability of species at a given time and place (e.g. during the cool season) seem to explain the migration of fishers. This migration is mainly practised in marine fisheries by the Guet-Ndarians, Lebous and Nyominkas of Senegal, the Temnés of Sierra Leone and the Fanti of Ghana, the Soussous of Guinea, the Diolas of Casamance, the indigenous fishermen of the Gambia River and the Wolofs of N'Diogo in Mauritania (Figure 1).

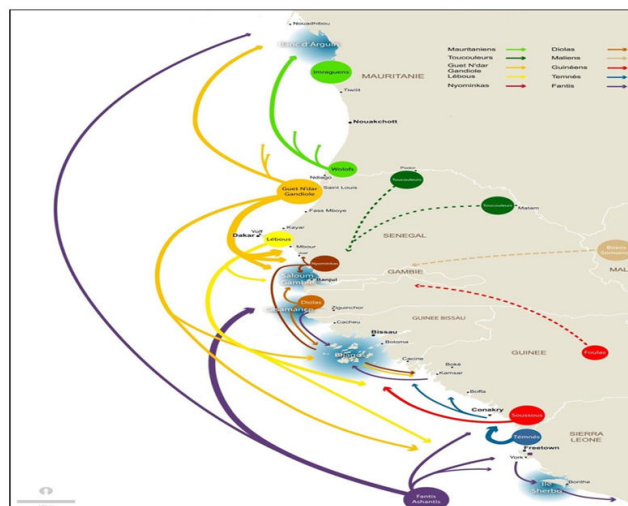


Figure 1. Migration map of fishermen in West Africa.

In order to highlight them, we focus on the choices made by these communities in terms of access strategy to the resource and on their positioning in relation to technological innovations and the tensions caused or not by the fishing crisis. These various elements partly condition the evolution of fishermen's migration and their adaptation to changes in the ecological, social, economic and political environment.

Migration and technological change (1970-1980)

In the 1970's and 1980's, marine fisheries were no longer the sole preserve of specialised communities, but also affected former peasant fishermen or estuarine fishermen and sometimes even peasants. The drought of the 1970's led to the massive conversion of the Wolofs of N'Diogo, farmers in southern Mauritania, to fishing activities. The Diolas of Casamance, originally 'landlubbers', increasingly turned to deep sea fishing, under the influence of the Guet-Ndarian migrants from Saint-Louis, the Lébous from the Petite Côte and especially the Nyominkas from Saloum. The Gambian fishing centres (Banjul, Bultut), secondary departure points for these fishermen, frequently served as stopover points on the migration routes. Marie Christine Cormier Salem puts forward two hypotheses for the exploitation of the sea by the Diolas. The first is 'event-driven', in the sense of Braudei, linked to crises such as the drought and consequently the decline of the rice fields. It takes place in a short period of time. The second is rather an adaptation to ecological changes over a long period of time. The project for the development of small scale maritime fishing in the Ziguinchor region (PAMEZ) and the programme to support small scale fishing in Casamance (PROPAC) have thus contributed to the conversion of farmers into fishermen. The Casamance appears to be a new fishing ground, with fishery resources that are still under exploited. Migrant fishermen are very attracted to this site for lobster and sole fishing. They arrive after the rainy season (September or October) and return to their villages in June for their agricultural work. The populations of the deltas, from the north of Senegal to the north of Guinea Bissau are moving because hypersalination, due to the low hydrometry, makes the

traditionally cultivated soils infertile, which amplifies the rural exodus.

Several development projects will encourage migrant fishermen in areas where local communities are not inclined to fish (Mauritania, the Petite Côte and Casamance in Senegal, Guinea-Bissau). Ice factories, petrol pumps, etc. have been invested in these fishing sites which are almost exclusively frequented by migrant fishermen. The presence of such infrastructures has intensified migrant fishing activities. National fisheries development policies, which began during the same period, facilitated the purchase of engines or new fishing gear and also facilitated the equipping of large pirogues for distant destinations. The motorisation of pirogues contributed to reinforcing this image of migration. With faster boats, the sea appears more than ever as an open environment to be conquered through well targeted movements in time and space. The introduction of the purse seine by the FAO in 1972 is also part of this development dynamic of the sector. Today, this gear is very present in West Africa (mainly on the small Senegalese coast and in Nouadhibou and Nouakchott). It is the fishing method with which the largest quantities of small pelagic fish are caught for the domestic market, but also for export. With the adoption of this fishing technique, there have been significant changes in the recruitment of crews 20 or more people but also the employment of young fishermen with significant muscle strength. With this new fishing technique, strength is indeed more in demand than knowledge and technical skills specific to the sea. These young people without a maritime tradition, who are originally farmers or traders, are increasingly coming to be employed in fishing. This leads to a massive influx of seasonal fishermen. These seasonal fishermen from different parts of the West African coast have, for the most part, alternative activities to fishing such as agriculture and in particular, livestock breeding.

Adaptation of migrant fisheries to political and economic contexts (1980-2000)

Migrant fishing and the changing political climate: From 1982 onwards, the political tensions between the rebels in Casamance and the Senegalese government, as well as the civil war in Sierra Leone between 1991 and the early 2000's and in Guinea-Bissau, led to an immediate flight of migrants and fishermen residing in the neighbouring areas (migrants from Sierra Leone to Guinea, migrants from Guinea-Bissau to Casamance, etc.). To this end, the Saint-Louisians (from Guet-Ndar and Gandiole), the Lebous and the Nyominkas were forced to abandon their camps in Casamance. The first two have redeployed their fishing effort to Gambia and Guinea-Bissau, while the latter have returned to their places of origin (the Petite Côte). In Guinea, migrant fishermen of various nationalities are settled in large numbers in the fishing camps at Katcheck and in other fishing camps located in the Ramsar sites of Rio Pongo and Rio Kapatchez. Similarly, the tensions between Mauritania and Senegal in 1989 led to the return of all migrants to their respective countries. In 1991, the start of the civil war in Sierra Leone caused Liberian fishermen to flee south to Côte d'Ivoire. The same is true of Ghanaian and

Senegalese migrant fishermen, mainly in the Freetown peninsula and the Sherbro region. Most Ghanaians have returned home *via* Gambia and Casamance, where a Ghanaian community is established, while others have gone to Guinea and more precisely to the north of the country. The Senegalese from Guet N'dar and Gandiole, for their part, repositioned themselves in Guinea in the ports of the maritime regions of Kamsar and Boffa, the Loos islands and Conakry. Later in 1998, some fishermen from Leone moved to Guinea-Bissau: The Bijagos archipelago and Rio Cacine in the south. The intensification of clashes during the decade increased the flow towards Guinea and progressively towards the Rio Cacine in the south of Guinea-Bissau or the Bijagos islands. These political factors have disrupted the migration pattern established at the time and are redistributing the migratory fishing effort. This political instability in some SRFC countries does not go hand in hand with the logic of accumulation that underlies this migration dynamic.

Migratory fisheries an economic strategy: Deme M, analyze migration, particularly that of young people, as a means of saving and accumulating capital. It frees the fisherman from the family unit, which would no longer exercise real control over his income, allowing him to acquire his own fishing unit. The difference in operational costs (fuel, ice, food for the ever increasing crews, catching gear, repair costs, etc.) between countries in the sub region is an important element in the migration strategy. The logic of the migrant fisherman is thus to minimise operational costs by operating in countries where inputs are cheaper. This factor is often coupled with advantageous commercial outlets. The devaluation of the CFA franc in 1994 had consequences on the dynamics of migration. In the sub-region, this devaluation changed the advantages of countries using the CFA franc, a strong currency, to the benefit of their Bissau-Guinean and Sierra Leonean neighbours. This immediate windfall effect contributed to the rise in migration to these two countries. At the same time, the effects of devaluation also led to an increase in the price of imported goods (notably rice), which had a 'shock' effect on the purchasing power of the working classes, including fishermen. This was highlighted by a sharp rise in the price of diesel, nets and other production costs. The latter were then obliged to increase the volume of their catches to maintain their standard of living. Migratory fishing, with its large catch capacity and better profitability, could then appear as an adequate response to this deterioration in the economic situation of fishermen. In this context, migrant fishing has become a permanent activity.

In this respect, the pressure exerted on fisheries resources shows signs of depletion of fisheries resources until the 1990's. There are many signs of overexploitation, the most obvious of which is the overexploitation of small pelagic fish consumed mainly by the West African population and of resources with a high commercial value (demersal fish). A lack of respect for the renewal time of species, combined with degradation of the marine environment, is causing fish stocks to melt. To maintain the value of their catches, fishermen are forced to migrate to protected areas. In Guinea, for example, it has been observed that migrant fishermen installed in large numbers in the fishing

camps at Katcheck, located in the Tristao islands, do not hesitate to violate the provisions of the MPAs of the Loos islands sanctuary and the community nature reserve.

Migrant fisheries in the era of sustainable development (2000-2020)

Regulation and migratory fisheries: Since the 2000's, efforts to regulate fisheries have been multiplied in the SRFC countries to respond to the excessive pressure on fisheries resources. The awareness of the overexploitation of these resources has led to the implementation of sectoral policies aimed at limiting fishing activities. These are generally management measures in the form of licences, permits or fishing rights and economic instruments such as taxes and fees on the resource. There are also spatio temporal measures such as seasonal closures of marine protected areas and fisheries reserves. These barriers to entry have had an effect on migration dynamics.

In the framework of a reciprocity agreement for free access to fishing zones between Senegal and The Gambia, Senegalese fishing units are increasingly found in the Gambian coastline and estuary. In the same register, more than 8,000 Leonean fishermen are settled in Guinea, which has not adopted a specific regulation for migrant fishing, although in 2017-2018 it proceeded to register artisanal fishing boats. Migrants thus choose destinations where policy measures are more favourable, hoping to increase their financial returns. In parallel, Mauritania has decided in its fisheries and aquaculture strategy to reserve artisanal fishing solely for national fishermen except for those fishermen who are governed under the fisheries agreement, notably with Senegal in 2001, which was almost the only beneficiary of this agreement. In 2016, before the effective application of the new fisheries strategy prohibiting artisanal fishing by foreigners who are not governed by fisheries agreements, Senegalese migrants represented nearly 9,000 sailors. Three quarters of them had returned to their country (Senegal), although more than 2,000 Senegalese migrant fishers remained in Mauritania and continued to fish illegally using aliases and false identities to avoid being recognised. Today, migrant fishers are increasingly involved in the fish production and processing circuits of host countries to adapt their strategies for accessing resources. They are progressively disconnecting from the country of origin.

Migrant fishing in host countries: The influence of migrants on non-native fishermen is due to their technical superiority, which manifests itself in unequalled fishing yields locally. Indeed, the convention between Senegal and Mauritania aims to develop the exploitation of small pelagic and to guide and train Mauritanian fishermen with the help of Senegalese fishermen specialised in purse seining. It authorises 300 boats *i.e.* 330,000 t per year and the opening up of chartering to Senegalese pirogues to supply fishmeal and oil factories. The GREPPAO project estimates that the Senegalese small pelagic fisheries supply nearly 30% of the total catches of this sector in West Africa for the fishmeal and fish oil industry in Mauritania. These fishermen, many of whom have been in Mauritania for several years now, have socialised in the host

country through mixed marriages, especially with the community (Poular, Wolof, Haratine) and through the acquisition of movable and immovable property (house, car). In addition to small pelagic, these fishermen are active in targeting demersal and octopus species with the use of trammel gear. Industrial processing into fishmeal and fish oil is also emerging in The Gambia through migrant fishing. The three operational fishmeal factories in The Gambia are exclusively supplied by Senegalese purse seine fishing units. With regard to artisanal fish processing, about 30% of landings are smoked and 3% are dried. Artisanally processed products are an integral part of the culinary habits of Gambians and in the sub-region. In Guinea, Leonean fishermen now work for Guinean ship owners or fishing companies under Guinean law. These Leonean fishermen are involved, alongside the natives, in the smoking of small pelagic in Bonfi, Boulbinet and Témintaye in Conakry as well as Koukoudé, Bongolon, Taboriah and Kamsar. Moreover, the Témnés are mainly involved in fish smoking (95%); drying (93%) and fish trade (80%). In Guinea-Bissau, 14% of artisanal fishers operating in the country are foreigners, mainly from Sierra Leone and Guinea-Conakry. This dynamic of migrant fisheries is a prerequisite for the development of a public policy that integrates migrant fisheries.

Discussion

During these periods, there has been a large movement of people to the coastal and maritime areas of the West African coastline. This trend has led to increasing population pressure in the maritime and coastal areas, resulting in increased activity in the exploitation of fisheries resources. Technological innovations, encouraged by fisheries policies, have contributed to an increase in fishing effort and the overexploitation of certain coastal demersal resources such as thiof (*Epinephelus aeneus*). The most glaring of these phenomena is the overexploitation of small pelagic fish, in particular the sardinella consumed mainly by the African population.

The modalities for taking into account the migratory dynamics in public policies remain an issue at both country and sub-regional levels. The majority of catches made by migrant fishermen are not known, as they are not recorded in national statistics. Indeed, these data are absent from the host countries when the landings are made in the migrant fishermen's country of origin or in landing places that are too far away and do not cover the census sites. These fish also do not indicate their origin in the migrant's countries of origin. As a result, national statistics are distorted by attributing fish from a given EEZ to catches from a neighbouring EEZ. The country that benefits from the landings of migrant fisheries will have the impression that its fish stocks are in a better state than they really are the same impression is shared by the country where the fish are caught because of the lack of catch reporting.

Indeed, cases of non-declaration, under declaration or false declaration of TB by these pirogues fall under the heading of Illegal, Unreported and Unregulated (IUU) fishing, as defined by the FAO in the code of conduct for responsible fisheries. This highly complex form of fishing is one of the main

obstacles to the sustainable management of fisheries resources. IUU fishing largely explains the overexploitation of fisheries resources in these countries. It has a negative impact on the livelihoods of fishing communities. The fraudulent way in which IUU fishing operates, coupled with the powerlessness of some coastal states, does not allow for good control of the parameters to make accurate predictions. It is thus encouraged, according to the difficulties in enforcing regulations due to the lack of appropriate surveillance means in terms of personnel, navigation and electronic instruments. As a result, IUU fishing and related activities undermine the success of actions to promote sustainable fisheries and improve the status and resilience of ecosystems. This problem faced by coastal states and more particularly those of the SRFC with limited logistical means, calls for cooperative solutions.

Regulatory mechanisms, notably fisheries agreements, partly guide the access of migrant fishers to third country waters. They mainly relate to the number of vessels authorised to fish and rarely to a given quantity of species. Thus, it is often noted in national statistics that the number of fishing vessels exceeds that authorised in the MOUs. However, catches made by migrant fisheries in the SRFC area represent about 20% of total catches and almost 40% of artisanal fisheries. This means that more than a third of the catches of artisanal fisheries would be taken outside the EEZ of the fishermen's country of origin. If we focus on data from small pelagic fishing units, a species with a low market value, Senegalese fishermen land nearly 250,000 t, *i.e.* 80% of all catches from migrant small pelagic units. Mauritania's EEZ is the main fishing zone for (Senegalese) migrant fishermen, since nearly 230,000 t are caught there each year by Senegalese fishermen. The Leoneans land more than 40,000 t mainly in the EEZ of Guinea and the Fanti from Ghana 20,000 t in Côte d'Ivoire. Senegal's EEZ is not frequented by any foreign migrant fishermen, although ethmalose smoking in the Saloum delta is carried out by Guineans. These figures are quite revealing of the importance of migrant fishing in a context of overexploitation of small pelagic. In addition, there is illegal fishing in marine protected areas in biosphere reserves such as the Bijagos archipelago, the Banc d'Arguin park or the marine protected areas of Tristao and Alcatraz, where migrant fishing activities are totally at odds with measures to protect marine ecosystems. The failure to take migrant fishing into account limits any intervention by SRFC states aimed at regulating fishing effort and the viability of fish stocks, which is fundamental for the nutritional security of West African populations.

Conclusion

Over the last 50 years, the migratory dynamics of artisanal fisheries in West Africa have evolved considerably in time and space. Fishing areas have progressively moved away from the fishermen's places of residence thanks to technological innovations. The transfer of knowledge between groups of fishermen and the desire to seek more and more abundance in fish stocks have thus contributed to the transition from the seasonal and episodic nature of migrations to a permanent fishing activity in the host countries. However, migrant fishers

adapt their migration patterns in the face of political conflicts. The establishment of the EEZ at the beginning of the 1980's and the recurrence of signs of overexploitation of certain fisheries resources from the 1990's onwards have gradually turned fishermen from migrants into ecological refugees. Despite the fisheries regulation measures put in place by certain coastal states, the quantities of fish landed by migrant fishermen are also significant. In sum, this analysis of the migration dynamic shows a real strategy of access and adaptation of artisanal fishermen to the political, economic and environmental contexts. Coastal states, the Sub Regional Fisheries Commission (SRFC) and regional institutions in charge of developing public fisheries policies (such as the Economic Community of West African States (ECOWAS)) would benefit from taking this dynamic into account in public policies, especially as this type of fishing is similar to IUU fishing or at least redefining it.

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