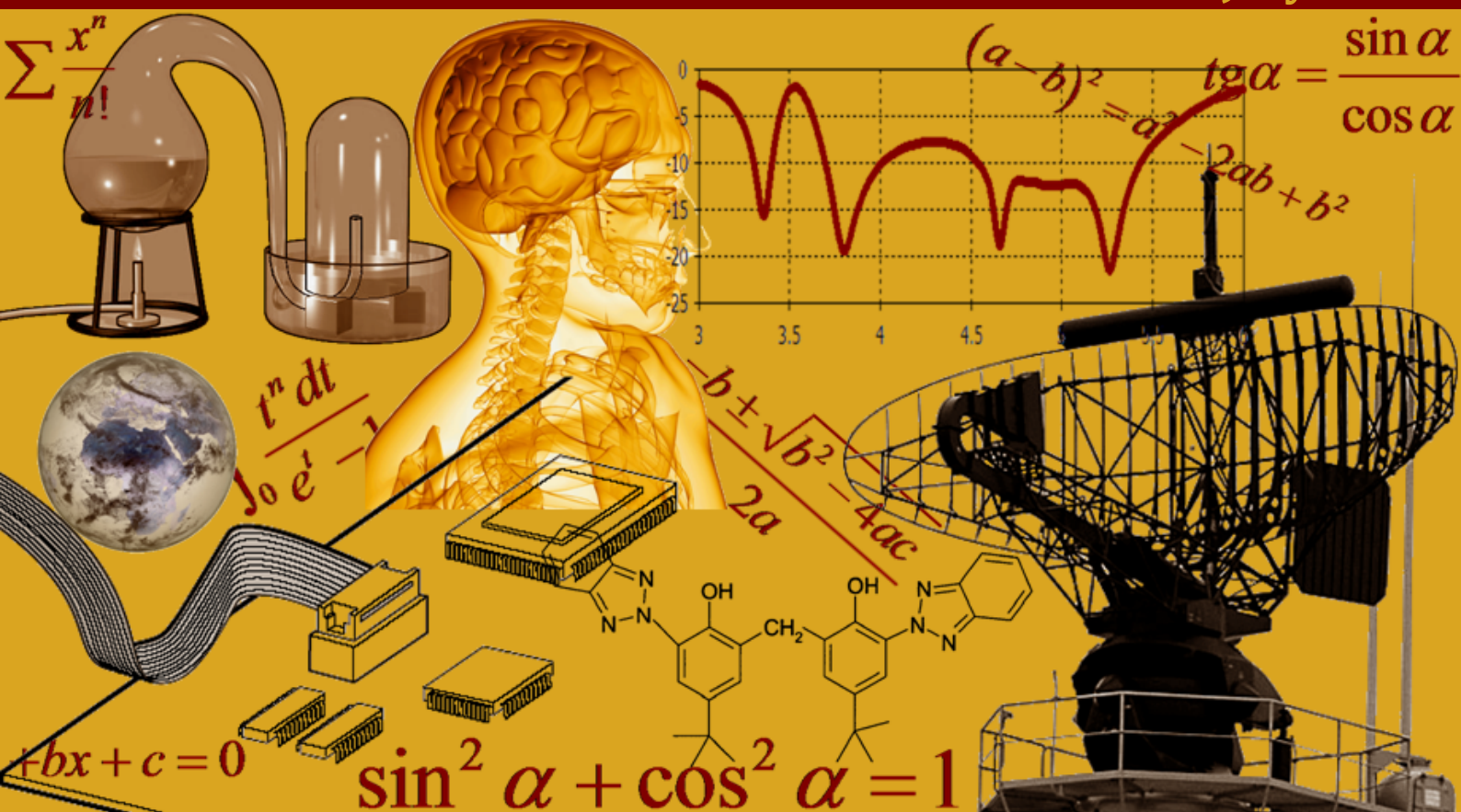


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International migration of refugee family fisheries under the effect of coastal erosion and maritime submersion in Saint-Louis (Senegal)

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ABSTRACT: This paper examines the ecological and environmental determinants of international migration and internal displacement of artisanal fishers in Saint-Louis, Senegal. The results obtained support the idea that climate change, by inducing warming, ocean acidification and disruption of the reproductive cycles of fish species, has contributed to the scarcity of these species and the impoverishment of artisanal fishermen in Saint-Louis. To adapt and without abandoning the traditional fishing activity, some fishermen emigrate to neighboring countries such as Mauritania and Gambia where they hope for a more profitable fishery, while others, displaced to resettlement sites such as Djougop because of coastal erosion, opt for illegal emigration to Spain despite the Covid-19 pandemic that is raging in the world. If this option does not scare the artisanal fisherman who is used to long sea crossings, it makes sense in the quest for a home and a socio-professional «comfort» torn by the nibbling swells.

KEYWORDS: Migration, artisanal fishermen, coastal erosion, climate change, Saint-Louis.

1 INTRODUCTION

The link between climate change and migration has become a topic that is increasingly focusing researchers working on the issue of migration and more generally on population displacement. In Senegal, many studies have explored the causes of international emigration and more particularly irregular migration. However, few studies have addressed the link between environmental or ecological degradation and population displacement in Africa. To fill this gap, we have chosen to examine in this article the relationship between climate change and internal and international migration of artisanal fishermen, using the Saint-Louis region of Senegal as a field of observation and study. The article is divided into three parts. First, we examine the context of the departures to Europe, focusing on the economic, cultural, political, social, and symbolic causes. Secondly, we will analyze the ecological factors behind the irregular migration of artisanal fishermen from Saint Louis. We will conclude our reflection by examining the link between internal migration and irregular migration of artisanal fishermen from Saint Louis, Senegal.

2 METHODOLOGICAL APPROACH

This work is based on a purely qualitative approach. The results obtained are essentially drawn from observations and interviews with fishermen (protagonists, candidates, and non-candidates for clandestine emigration) and their families, as well as other resource persons such as clandestine emigrants and survivors of clandestine emigration. This heterogeneity of interlocutors is justified by the principle of diversification, which allows for a more global and objective view of the phenomenon under study (Pires, 1997). The main strategy used to reach the participants in the study is snowballing. The participants are distributed among four localities in the department of Saint-Louis that are increasingly affected by the

phenomenon of irregular emigration at sea. These are two popular fishing districts located on the Langue de Barbarie (Guet-Ndar and Goxx Mbacc) and the districts of Pikine and Djougop chosen because they are respectively areas of reception and temporary rehousing of families of fishermen victims of the advancing sea and coastal erosion. To avoid any misunderstanding, the interviews were most often conducted in Wolof and then translated into French.

3 THE CAUSES OF IRREGULAR MIGRATION TO EUROPE

In this part, we will first review the general factors of Senegalese clandestine emigration to Europe and then deal specifically with the ecological determinants of this migratory traffic in Saint-Louis of Senegal.

3.1 GENERAL CAUSES OF SENEGALESE CLANDESTINE EMIGRATION TO EUROPE

Senegalese society embodies a positive representation of travel. In fact, in the popular imagination, it is attributed to cognitive and moral functions that enhance its value: the discovery of another "world" is supposed to enrich knowledge, while the trials or difficulties experienced and overcome are supposed to make one "wise. However, the socio-economic functions of the journey to Europe take precedence over these functions. The economic crisis and the desire to become richer are indeed the main reasons that push Senegalese to emigrate. "In urban areas, the increase in underemployment, the growth of poverty, the generalization of unemployment, the precariousness and low remuneration of work are elements that accentuate emigration" (Ba & Ndiaye, 2008).

In rural areas, the crisis in agriculture due to low rainfall, "drought, lack of efficient agricultural equipment, low productivity of agricultural work, rising prices of fertilizers and depreciation of raw materials (groundnuts, cotton) leaves no opportunity for young people to flourish. (Sakho & Dial, 2010: 4). The gap between job supply and demand remains one of the main causes of youth emigration in a country with a high population growth rate and weak industries. A significant number of young people have diplomas (bachelor's, master's, and doctoral degrees) but lack professional qualifications, which are often expensive. While for the relative minority who do, finding a job or even an internship has become a real obstacle course with the formal sector employing "few people" (GERM, 2019: 28). In addition, "the educational system, which is not adapted to the world of work, and academic failure encourage many young graduates and job seekers to leave" (Sakho & Dial, *ibid.*), to do whatever it takes to land in Europe, as is the case with graduate students who have taken the pirogue to Spain. In addition to the unemployed, there is a plethora of active Senegalese workers who, because of their low income, make their way to Europe where they hope to find better wages.

The consumer society (Baudrillard, 1970), of competition and individualization in which Senegalese communities are engaged through globalization, leads to marginalizing inequalities, and undermines the traditional solidarity mechanisms that recovered the individual in economic and psychological difficulty. In fact, young people seem to be abandoned to themselves. They have the feeling that the State does nothing for their professional integration while social pressure and family burdens weigh heavily on them. The family in "nuclear" transition is often experienced by these young people as a burden in a Senegalese society where they are called upon to take over from the father of the family, not only by taking care of household expenses, but also by educating their younger children. These burdens, which stifle individual autonomy, are heavier in polygamous households, where the eldest child is not sufficiently wealthy, and the younger children are dependent on him.

Faced with all these constraints and stressful ordeals, some elders, and cadets thirsty for emancipation see clandestine emigration as the only solution to get out of their situation. Among would-be migrants, the gaze is not generally riveted on those who die at sea, but rather on the survivors of this suicidal journey, who have succeeded after sacrifice in building one or more beautiful houses, in extirpating their families from poverty and in marrying the women of their dreams in a society where the cost of marriage tends to become more and more expensive. The image of the modou-modou (migrant in Wolof) is associated in Senegalese reality with social success (teeki in Wolof), while emigration to Europe is seen as a shortcut to social ascension: " [...] we see that the guy who has spent two years in Europe, for example, as soon as he returns, he can achieve in the space of a year what someone who has studied for, say, 10 years has not been able to achieve" (Ludl, 2008: 105). This prowess in social ascension is very recurrent among the Modu-Modu and is revealed, in some respects, as a sign of the "failure" of the state in difficulty to generate or significantly favor more prosperous workers (who have remained in the country) than the latter.

The figure of the modou-modou, which is fantasized, now seems to dethrone the figure of the elites or civil servants produced by the school, which no longer inspires dreams as it did before, during the era of the "intellectual myth" (Havard, 2001). This era predates the structural adjustment policies that have considerably diminished the State's "employer status" at the mercy of its "disengagement". Today, the figure of the ku jàng ekool (the one who learned at school) is placed in the background (Banégas & Warnier 2001) with the school benches now stripped of their role as social elevator (Moulard, 2014).

Setting up the Modous-Modous as models, a multitude of young people today only think of going to Europe, to Kaaw to quote (Sall, 2011). "Derived from the Wolof word for high (kaw), kaaw represents both the elevation produced by physical displacement to countries almost invariably located in the North, and the elevation of status (...)." (Moulard, *ibid*: 420). The presence of relatives in the host country is one of the reasons why some people migrate clandestinely, thinking that they will come to their rescue once they arrive. Moreover, if there is an even greater number of would-be migrants who engage in irregular emigration by sea, this is also linked to the weakness of maritime controls along the Senegalese coast and the absence of significant sanctions against the organizers of this traffic.

3.2 ECOLOGICAL CAUSES OF IRREGULAR EMIGRATION OF ARTISANAL FISHERMAN FROM SAINT-LOUIS, SENEGAL

To survive, humans have always migrated to distant, more stable areas when nature, in turmoil, threatens or makes their habitat or environment unliveable. However, the "ecological" or "environmental" problem of migration only appeared in international circles belatedly (Diallo and Renou, 2015: 87), starting in 1972 when the first United Nations Conference on the Environment was held in Stockholm, and the United Nations Environment Programme (UNEP) was created in its wake. After more than a decade, in 1985, the term "environmental refugees" appeared as the title of a UNEP report. The definition given to this term by the report's editor, Essam El Hinnawi (1985), is as follows: "those who are forced to leave their place of living temporarily or permanently because of an environmental disruption (natural or man-made) that has endangered their existence or seriously affected their living conditions. By environmental disruption, we refer to the deleterious effects of natural disasters (drought, famine, rising sea levels, earthquakes, cyclones, floods, etc.) and anthropogenic disasters (industrial accidents, soil degradation, forest fires, land use policies, among others).

In the report, Essam El Hinnawi estimated that "more than 10 million people have fled for environmental reasons and have found refuge both inside and outside their country" (Gonin and Lassailly-Jacob, 2002). (Gonin and Lassailly-Jacob, 2002). By 2050, there will be between 150 million and 1 billion environmental migrants (Decrop, 2008) and a world population of 9 billion.

This figure illustrates the importance of the environmental dimension in international migration today and in the future, which seems to have no future in view of the intensification and multiplication of climate risks. The specificity of this dimension lies in the constraint that environmental disasters exert on the migration of victimized populations, but also, in several respects, on the possibility of protecting or taking refuge in their State of origin (Legoux, 2010: 67), which obviously has safe, vacant spaces. It is this possibility that decisively and legally opposes the notion of climate migrants to the notion of "political refugees," which refers to a limited group of actors who must be protected from their State of origin (against persecution linked to the absence or crises of democracy, racism, etc.) under the 1951 Geneva Convention. In the context of this work, the focus is only on climate refugees in their own country of origin, which is Senegal, and on the contribution of climate change in the clandestine migration of populations affected by it. This population concerns only the fishing communities settled on the Langue of Barbarie subject to coastal erosion and sea level rise.

In Africa, during the 1973-74 and 1984-85 droughts, the fishing sector was less affected. Instead, it was positioned as a refuge activity for a host of peasant farmers and herders fleeing their villages hit hard by the scarcity of rainfall. This position of refuge, artisanal fishing has maintained during the global economic crisis of 2008 under the effect of which unprecedented rushes of sub-Saharan migrants to the Canary Islands were recorded. "Fishing, which is much more prosperous and often in demand for labor, was a welcome destination for these young people [Senegalese]" (Sall & Morand, 2008: 34). This renders bland the premature thesis of a fishing crisis that forced young fishermen to go to Europe, even though most trips were "made on fishing pirogues that only experienced fishermen can master on the high seas" (Sall & Morand, *idem*: 33).

However, in Senegal, this thesis is gaining renewed interest nowadays due to a combination of circumstances that have recently contributed to the massification of artisanal fishermen in the rush of migrants to the Spanish archipelago. In fact, population growth, climate change, overfishing, especially industrial overfishing, and the Covid-19 pandemic (Ba & Ngom, 2022), are all concomitant factors that have recently plummeted the economy of artisanal fishermen. Impoverished and desperate to remain in their country of origin where they can no longer make ends meet, artisanal fishermen have taken to the dugout canoe to reach Spain, thus abandoning their socio-professional activity.

3.2.1 FROM REHOUSING SURVIVORS OF MARITIME EROSION TO THEIR IRREGULAR EMIGRATION TO EUROPE

Composed of the districts of Guet-Ndar Lodo, Guet-Ndar Dack, Goxu Mbacc, Haut Ndar Toute and Bas Ndar Toute, the Langue de Barbarie (Saint-Louis du Sénégal) is a strip of land wedged between the Senegal River and the Atlantic Ocean. This geographical position, which reflects the abundance of a water regime, the existence of a dense climate and the agro-ecological

potential of the area, represents both an asset and a constraint for the artisanal fishermen of Saint-Louis. Indeed, the latter, taking advantage of both the fishery resources of the sea and the river, are subject to shocks from the rise in sea level and coastal erosion. Shocks that result, among other things, in the devouring of beaches, fishing docks, the confiscation of entire houses of fishermen now threatened with socio-professional mobility (abandonment of fishing). It is from the year 2000 that the violence of the waves was more felt among the local populations of the Langue de Barbarie. In 2016, several houses collapsed under the impact of the resurgence of exceptional swells whose disasters were already predicted following the assaults of violent waves in 2010. The census conducted in 2018 reported 3278 people directly affected (Republic of Senegal, 2020: 4). While soon, without effective measures of containment or resilience, the number may double. Huge social infrastructures (houses, schools, mosques, cemetery, etc.) and commercial infrastructures were swept away by the swells. Loss of life was noted while some injuries led to disability. In response to recurrent environmental displacement and the vulnerability of families located 20 meters from the sea, the State of Senegal, with the support of the World Bank, has implemented a five-year Emergency Recovery and Resilience Project in Saint-Louis (SERRP/2018-2023) for 927 impacted households.

After identifying the priority targets and the site of relocation of the victims in the Commune of Gandon (in Djougop) as a suburb of the said city, the Project undertook the installation and distribution of Mobile Housing Units (MHUs) with the technical support of UNOPS (United Nations Office for Project Services). While waiting for the availability of permanent houses, the Project designed the MHUs to temporarily rehouse the victims of coastal erosion while being better than the fragile tarpaulin tents under which most of the victims of the Langue de Barbarie took refuge in the flooded and unhealthy site of Khar Yalla, characterized by the severe lack of electricity and water. Because of the demonstrations carried out mainly by the Guet-Ndariens against the precariousness that these displaced persons were living with difficulty, but also that of the refugee households in the Maison de la Femme (Camp Gazelle), the first UMH were granted as a priority and urgently to these two groups of disaster victims. In July 2019, 692 people were thus housed in the UMHs installed on part (1, 2 ha) of the site developed in Djougop (Republic of Senegal, 2020). This relocation also involved several refugees living with host families.

By displacing entire families who used to live by the sea, the advance of the latter and coastal erosion has created more fishermen candidates for illegal emigration among the refugee families as well as those in front of the sea, permanently exposed to nibbling swells. Shocks and threats that affect the local artisanal fishery, which is already undermined by the depletion of fishery resources due to climate change (disruption of the reproduction cycle of fish species), overexploitation (Failler & Binet, 2010), non-compliance with fishing standards (IPAR, 2020), as well as the low resilience of fishermen and authorities in charge of fisheries development. In view of the slow availability of the "permanent housing" promised by the SERRP and the uncertainty of benefiting from it, this migratory candidacy is supported, in many respects, by the urgency of extricating oneself from the precariousness (residential, social, economic, etc.) of daily life after displacement (disaster victims), or the threat of it among households dangerously threatened by coastal erosion, the need to find a suitable permanent home whose undeveloped land is worth a few dollars. The need to find a suitable house with undeveloped land worth several million dollars, which is difficult to find in the country for a fisherman who is surviving due to the scarcity of fish stocks. Also, for this category of victims who lost their profession of fisherman following the move to distant corners of the sea or disability caused by the unexpected shock of the collapse of houses under the assault of unprecedented waves. In addition to all this, there is the recent increase in the prices of construction materials and equipment, and cement, the price of which is currently close to CFAF 80,000 per ton, as opposed to CFAF 60,000, the price that prevailed in 2021.

The open tent shown in the picture above is home to an entire family of fishermen living in promiscuity. As part of the rehousing project, the father of the family, A. Seck, was given only one room for a household of more than seven members including minor children. The room is the UMH, which had to be subdivided into two tiny portions between which is interposed a very usual curtain: a part housing the children; and another to keep the privacy of the parental couple. A woman fish processor, mother of a family living nearby, lives an almost analogous situation. She says that:

"Here, 10 families share a single kitchen; the toilets are worse. We have no space to relax and no electricity except for the small solar lamps that came with the tents. Some of them are not even functional; my husband had to buy fragile Chinese solar lamps that never last". [N. Guèye, July, 2021].

In the dry season, the heat experienced by some refugees in the relocation site is more overwhelming when compared to their previous life by the sea. If a handful of respondents show perseverance, most of them do not hold back their lamentations about their sad fate, for which indiscreet confidences seem to serve as a springboard to ease the pain. The precariousness experienced daily in the mobile housing units tends to last and to be exacerbated while the resettlement of victims of coastal erosion is programmed to be a transitional stage accompanying them to find a house in hard. Almost all the evacuees do not

rely on their own means to find a house but rather on the state and local authorities. But, until now, the public authorities have only made promises whose realization is piously awaited. Tired of promises, a young fisherman says this:

"But our patience has limits. Watch! The houses have been collapsing since 2016. Since then, nothing, we are now in 2021, five years, we are still left in these very difficult conditions." [Seck, interviewed in June, 2021].

Recall that on the occasion of a visit to the construction sites of the relocation site (Djougop) of populations victims of coastal erosion, the Minister of Territorial Communities, Development and Territorial Planning at the time, in the company of senior officials such as the Director General of the Municipal Development Agency (ADM) and the Mayor of Gandon, had declared that "arrangements are being made, within the framework of the Emergency Recovery and Resilience Project in Saint-Louis (SERRP) as well as the Saint-Louis Coastal Protection Project (PPCS) to relocate these families in a very large site, with permanent buildings, and equipped with all the necessary security"¹

While this promise will be kept for the benefit of the targeted households, there is no certainty that the SERRP will take care of all the victims of coastal erosion or the advancing sea, survivors not identified by the project at the time of its development. It should be noted, however, that most of the refugees feel that their misery is being politicized. The authorities visit them only rarely and occasionally (around elections) when they are tired of the recurrent promises. The simple fact that the refugees are living in small mobile resettlement units in Djougop is indicative of their poverty. A socio-economic precariousness that makes it impossible to buy land and build on it, or to rent a house or rooms.

Under the SERRP, however, "concessions" had a choice between rent subsidies and moving to the relocation site in Djougop. But more than 80% of concessions had preferred to relocate to the temporary housing (World Bank, 2018). Today, this rate of preference tends to decrease because a good portion now adheres to the idea of subsidizing rents to the detriment of free UMH that have become less comfortable or comforting. On the other hand, in some households, the large size of family members is proving to be a stumbling block to the commitment to rent, due to the high costs involved despite the likely subsidy. While the Relocation project has a limited budget.

Many fishing families have not abandoned their traditional activity despite the long distance that now separates them from the sea, the fishing docks, and the selling points in Saint-Louis city. To get to the latter, refugees in Djougop, for example, travel about 12 km by bus or cab, wasting both time and money spent on transportation. During the surveys, it was noted that women processors and fish sellers leave for town together very early in the morning and return together before nightfall. This collective attitude, which is supported by some fishermen, is restrictive for these women sellers who have experienced poor sales or earned little income before returning home. It is however justified by the insecurity related to the distance and the enclave of the place of "temporary" rehousing requiring an important device of public electrification and de-cluttering. Women and girls fear being assaulted or raped. To prevent this constraint, the President of the Khar Yalla disaster victims, Mamadou Thiam, had recommended, before the installation of the refugees in the relocation site, during the presentation of the UM (Ndarinfo, 2018), the provision of a special bus for the beneficiaries of the latter.

The stressful situation related to long travels, insecurity and isolation is something that fishing families have never experienced before, when they lived by the sea, at the heart of the fishing activity. It is not without consequences on their income. The return trips are considered expensive (about 500 CFA francs per day) by women processors and artisanal fishermen living from day to day with meager means and income that sometimes "eclipse" the illusion or ambition to offer themselves a private shelter worthy of the name in the desired location. Sometimes, it happens that after having made transport costs, travelled a long distance to reach the fishing docks as well as kilometers at sea by means of the artisanal pirogue that is rich in gasoline, the fisherman returns empty-handed. This reality is becoming more and more frequent and pushes some refugee fishermen in Djougop to diversify their activities, by devoting themselves to masonry, for example, during the days that are vacant for fishing.

Getting a house is the most important wish for any refugee who is temporarily resettled. And for many of the fishermen refugees, going to Spain is a shortcut to fulfilling this pious and urgent wish. As most of the artisanal fishermen are not educated, are unaware of the procedures for obtaining a visa (always selective, slow, and costly), fear the path of the desert, and only know the sea, clandestine emigration by means of a pirogue represents for them a route of choice to reach the Spanish

¹ See the link <https://theydakar.net/saint-louis-les-victimes-de-lerosion-cotiere-de-khar-yalla-et-gazeite-bientot-relogees-a/>

archipelago and both ends. The familiarity with the sea is for them an asset in the context of migratory traffic at sea and not a risk compared to the situation of other non-fishermen. It is in this case that a candidate for clandestine emigration states:

"Going to Spain is a must for most. I'll tell you why: from 2016 until now, our houses have collapsed, and we've been put under fragile tarps. We live from day to day; without money, we don't survive. People must sacrifice themselves in these conditions. In addition, it is you [the non-fishermen] who are surprised and frightened to leave for Spain by dugout, but not us. Because I, for example, have been at sea for 20 days during which you see nothing at night, except foreign boats. [A. Seck, Djougop, June 2021].

This point of view is widely shared by the parents of fishermen who have a very different relationship with illegal emigration than non-fishermen. Indeed, the former are less reticent about this illegal and risky practice than the latter. Even if they are aware of the dangers of the sea, the parents of fishermen do not fear it as others who have neither grown up at sea nor had fishermen sons going to and coming back home after days or weeks spent at sea. This being the case, most fishermen's parents agree with the thesis that illegal emigration is less dangerous for fishermen compared to others. It is in this line that a fishermen's relative who has a son and two nephews who left for Spain by means of the pirogues, develops this:

"Going to Europe by dugout is a risk. You risk being confronted with violent winds (...). It is better if it is a fisherman (...). A fisherman can stand up in the dugout, sit down and eat, but if it's the others, they're going to get nautical (...). There are even fishermen who experience this naupathy when they stay a long time without going to sea. The naupathy kills: the intestines go to the point of emptying; all the water drunk is empty. In this state, you become *laatikaam* one who cannot do anything, who cannot even get up at night (...). There is a period when the fishermen (...) stayed 20 days at sea, in a big boat like this one [indexing] but the biggest. We sailed all the way to the Moroccan border." [Pa Nogaye Baro, December 17, 2020].

In Djougop, a good number of fishermen's parents do not oppose the clandestine emigration project of their sons, given their precarious situation. While the few fishermen who survived clandestine emigration that we were able to investigate, tend to repeat the illegal journey, about which they all recognize that they have had advantages over their fellow travelers who are not fishermen, even though in the event of a capsizing in the middle of the sea, the chances of survival are almost equal, even for those who can swim. Some have reported witnessing, during their journey, deaths related to prolonged naupathy (among non-fishermen) as well as the throwing of bodies (into the sea) which still do not traumatize anyone. It should be noted that the stay at sea during a fishery is different in many respects from the stay at sea during illegal emigration to Spain, which requires a longer journey. In fact, it is only during the latter that the boat is usually overloaded with passengers and luggage, making it more vulnerable to collisions with rocks and strong winds.

4 CONCLUSION

Climate change is a global scourge whose shocks are unevenly distributed and experienced in time and space, depending on the resilience of ecosystems and populations. In Senegal, in the Langue de Barbarie (Saint-Louis), where many fishing communities live, its consequences are reflected, among other things, by the depletion of fish resources, a source of poverty, as well as by the advancement and erosion of the sea, which causes significant displacement of the victims. To help them, the SERRP has set up Mobile Housing Units (UMH) to temporarily relocate the displaced in the site of Djougop (Commune of Gandon), while waiting for the promise of hard houses to materialize. Notwithstanding this intervention, the refugee fishing families are facing multiple hardships: impoverishment, poor living conditions, distance from the sea and fishing activities, reduced income, problems of access to basic social services, etc. Such hardships lead to clandestine emigration of fishermen to Spain and migration to neighboring countries such as Gambia and Mauritania where fish stocks are more abundant. To leave for Spain by means of the pirogue is seen by the fishermen candidates as a shortcut to succeed and to get a nice house. Their familiarity with the long stays of fishing at sea is seen as an asset in the realization of their migratory project.

REFERENCES

- [1] A. A. Ba & A. Ngom, « Émigration clandestine des pêcheurs artisanaux de Saint-Louis du Sénégal sur fond de pandémie du covid-19 », *Mélanges philosophiques*, vol. 6, p. 15-32, 2022.
- [2] C.O Ba & A. I. Ndiaye, « L'émigration clandestine sénégalaise », *Revue Asylon (s)*, n°3, in <http://www.reseau-terra.eu/article717.html>, 2008. [En ligne].
- [3] R. Banegas & J.P. Warnier, « Nouvelles figures de la réussite et imaginaires politiques », *Politique Africaine*, n°82, p. 5-23, 2001.
- [4] Banque mondiale, *Projet de relèvement d'urgence et de résilience à Saint-Louis*, 2018.
- [5] J. Baudriallard, *La Société de consommation*, Paris, Denoël, 1970.
- [6] G. Decrop, « Un statut de réfugié environnemental est-il une réponse pertinente aux effets sociaux du réchauffement climatique ? », *Revue Asylon (s)*, n°6, In <http://www.reseau-terra.eu/article851.html>, 2008. [En ligne].
- [7] A. Diallo & Y Renou, « Changement climatique et migrations: qualification d'un problème, structuration d'un champ scientifique et activation de politiques publiques », *Mondes en développement*, n°172, pp. 87-107, 2015.
- [8] E. El-Hinnawi, *Environmental refugees*, Nairobi, United Nations Environment Programme, 41p, 1985.
- [9] Fao, *La situation mondiale des pêches et de l'aquaculture*, Rome, 2018.
- [10] Germ, *Migrations sénégalaises: passer par le Niger pour rejoindre l'Europe*, 2019.
- [11] Giec, *Rapport spécial du GIEC sur les océans et la cryosphère dans le contexte du changement climatique*, 2019.
- [12] P. Gonin & V. Lassailly-Jacob, « Les réfugiés de l'environnement: Une nouvelle catégorie de migrants forcés ? », *Revue européenne des migrations internationales*, vol. 18, n°2, pp. 139-160, 2002.
- [13] J. F. Havard, « Ethos « bul faale » et nouvelles figures de la réussite au Sénégal », *Politique africaine*, n°82, pp. 63-77, 2001.
- [14] L. Legoux, « Les migrants climatiques et l'accueil des réfugiés en France et en Europe », *Revue Tiers Monde*, n°204, pp. 55-67, 2010.
- [15] C. Ludl, « To Skip a Step: New Representation (s) of Migration, Success and Politics in Senegalese Rap and Theatre », *Stichproben Vienna Journal of african studies*, vol. 8, n°14, pp. 97-122, 2008.
- [16] S. Moulard, « Le regard entre deux rives: la migration et l'exil dans le discours des rappeurs sénégalais », *Cahiers d'études africaines*, n°213-214, pp. 415-449, 2014.
- [17] République du Sénégal, *Stratégie de restauration des moyens de subsistance des populations affectées de la langue de barbarie*, 2020.
- [18] P. Sakho & F.B. Dial, « Migration clandestine féminine. Étude de cas de Dakar et sa banlieue », *CARIM*, Notes d'analyse et de synthèse n°56, 2010.
- [19] A. Sall & P. Morand, « Pêche artisanale et émigration des jeunes africains par voie piroguière », *Politique africaine*, n°109, pp. 32-41, 2008.