social sciences

MDPI

Article

Keeping People in Place: Political Factors of (Im)mobility and Climate Change

Caroline Zickgraf

Department of Geography, Faculty of Sciences, The Hugo Observatory: Environment, Migration, Politics, University of Liège, 4000 Liège, Belgium; caroline.zickgraf@uliege.be

Received: 1 May 2019; Accepted: 11 July 2019; Published: 29 July 2019

Abstract: While those 'trapped' or who choose to stay in areas affected by climate change represent a substantial policy issue, there only a small amount of empirical work specifically targeting such populations. The scant attention that is afforded to immobility often emphasizes financial constraints as factors driving (involuntary) immobility. As an essential part of the mobility spectrum, the complexity of immobility in crisis, including its political dimensions, warrants thorough investigation. In response to these gaps, this contribution locates environmental immobility within mobilities studies, its conceptual complexities, and, finally, illustrates the importance of political factors in shaping (im)mobilities. The findings are based on semi-structured interviews conducted in two developing countries experiencing the impacts of climate change. We delve into the socio-cultural and economic nature of (im)mobilities as they interact with political forces, specifically by exploring international bilateral agreements (Senegal) and a relocation program (Vietnam). In political spaces that are dominated by a desire to limit human mobility and (re)produce stasis, we challenge traditional dichotomies between mobile/immobile and sedentary/migration polices by underlining how policy interventions can simultaneously promote mobility and immobility, demonstrating complex co-existing mobilities. Keeping people in place can, in fact, mean allowing the very same people to move.

Keywords: immobility; climate change; environmental migration and mobility; trapped populations; migration governance; Senegal; Vietnam; planned relocation

1. Introduction

Traditionally, research on human mobility responding to climate change delineates three objects of study: migration, displacement, and planned relocation. Nestled within the burgeoning field, a small group of scholars have begun to elaborate its hidden facet: immobility (Black et al. 2013; Black and Collyer 2014). Until recently, it was assumed to be unproblematic: migration was the abnormal behavior worthy of our academic gaze and in need of explanation. Thus, people tended to focus on population movements rather than the lack of mobility, as objects of political and humanitarian concern, in keeping with the idea that migrants or displaced people were the victims of climate change, its human faces (Gemenne 2011). In recent years, however, scholarly attitudes towards immobility are shifting: actors are moving away from deterministic, sedentary biases that favor immobility a priori. Stimulated by the findings of the UK Foresight Report in 2011, terms like 'trapped populations' emerged, which acknowledge that those who do not move may in fact be amongst the most vulnerable to the impacts of climate change (Foresight 2011; Ayeb-Karlsson et al. 2018). Not all people have the same capabilities—or desires for that matter—to leave their homelands for 'greener pastures'.

Researchers of this less-understood facet of the environment-migration nexus make concerted efforts to understand why some people do not move in the face of climate change and environmental degradation, or how population movements that do occur may be limited in temporal or spatial

scope, e.g., trapped in transit (De Haas 2014). As for explanatory mechanisms, much of the early work focused on the lack of financial capital as a barrier to migration: migration has a (financial) price, and many of the poorest people cannot simply afford to pay it. Economic factors, while indeed hugely influential, fall short of fully demystifying immobility in the contexts of climate change, just as economic drivers do not solely explain why migration occurs. Recent work rightfully expands on the causes by considering social factors and recognizing that immobile populations cannot all be deemed 'trapped' (Suliman et al. 2019). Many people choose to stay, citing place attachment and cultural motivations, for instance (Adams 2016; Farbotko 2018; Mortreux and Barnett 2009). These are important advances, but we still have not painted the full picture. Social understandings must be deepened, but other factors, too, should enter the 'immobility equation'. In this article, we assert that the political nature of immobility is one such case.

The following article joins the vast majority of current scholarship in offering multi-causal understandings of environmental mobility, but here we seek to explain how politics, particularly their material manifestation in policy interventions, drive (im)mobility outcomes in areas undergoing significant environmental degradation. This article seeks to complement rather than contradict previous scholarship on immobility and 'trapped populations' (Foresight 2011; Black et al. 2013; Black and Collyer 2014). It contributes to the body of scholarship by incorporating the political factors that contribute to keeping people in place through two qualitative case studies that represent two different environmental mobility contexts of international labor migration (Senegal) and internal planned relocation (Vietnam), without diminishing the role of other factors in 'keeping people in place'.

Lastly, our intention is not to take a normative position on immobility resulting, at least in part, from policy interventions, that is to say, we privilege neither immobility nor mobility. Rather, we attempt to show both positive and negative aspects, the good and the bad of it, as articulated by those who are affected by local environmental degradation. Immobility can be a choice that is enabled by policies, while restrictive or maladaptive policies can also be a 'trapping factor' that limits people's abilities to leave (when they want to) (Foresight 2011; Black and Collyer 2014). Moreover, we assert that policy interventions aimed at enabling movement can, in fact, also enable immobility.

2. Narratives on (Im)mobility and Environmental Change

The study of immobility is relatively young within environmental migration scholarship compared to other areas of research (Zickgraf 2018a; Ayeb-Karlsson et al. 2018). It has rarely been studied in its own right, perhaps reflecting a 'mobility bias' (Jónsson 2011; Schewel 2019). That is not to say that it is without precedent: it is widely accepted that in any given place experiencing out-migration, there are just as many people, if not more, that do not embark on internal or international migration journeys: because they cannot, because they do not wish to, or some combination thereof (Carling 2002; Carling and Schewel 2018).

Like many concepts in environmental migration studies, immobility first found its way into more 'mainstream' migration studies. In many cases, it has rather provided the backdrop against which migration takes place, providing a control group, rather than being expressly examined as a decision in itself. For instance, within transnational studies, research began including the experiences of non-migrants as counterparts to migrants, more specifically as family members 'left behind' (Olwig 1999). Early currents in the field did little to understand how and why people made the choice *not* to migrate. They were often seen instead as the magnets attracting remittances back 'home'. Non-migrants were studied as secondary actors within transnational and translocal networks whose inclusion was studied as evidence of the (developmental) impacts of migration. In recent years, scholars have moved towards a stronger understanding of non-migrants within transnational networks as agents in their own right, but still without explanation of their motivations for staying.

One of the most influential studies to explicitly consider this question was Carling's 2002 study of involuntary immobility in Cape Verde, which crafted the aspirations-ability framework that pointed out how poverty in a culture of migration limited the abilities of people to leave Cape Verde, despite their

aspirations to do so[1]. Although the study did not expressly target environmental context, it nonetheless drew immobility into the sphere of migration studies and theories of understanding on how migration occurs for some and not for others. Refugee and forced migration scholars have also added to the ways in which we understand immobile people and populations, again emphasizing its involuntary forms. This body pays particular attention to the ways that war, armed conflict, and violence disrupt or stifle mobility as much as they can also necessitate it. Lubkemann (2008) study of involuntary immobility in wartime Mozambique did not only add empirically to our understandings of how immobility occurs in conditions of war, but also theoretically moved to decouple displacement from migration, arguing that the involuntarily immobilized experience disruption and disempowerment traditionally associated with movement, and that, in fact, migration even in forced contexts can result in empowerment, an important antecedent to narratives on migration as adaptation and trapped populations. He then moved for a reconceptualization amongst forced migration scholars to include how involuntary immobility can be a form of displacement in situ.

These two traditionally compartmentalized fields, migration studies and refugee studies, are bridged by environmental mobility studies in that the field includes migration and displacement as possible mobility outcomes, along with planned relocation (Piguet 2018). Acting as a connective thread amongst these studies is the emphasis on a lack of agency in immobility, manifested in the emergence and increasing popularity of the term 'trapped populations', denoting a population that has the need and desire to move, but lacks the ability (Foresight 2011; Black and Collyer 2014). The report used evidence from various study sites in which migration was only a coping strategy accessible to some, their last resort, with others staying in place because of conflict or poverty, or because disasters decreased financial resources with which to migrate (Foresight 2011; Gray and Mueller 2012; Penning-Rowsell et al. 2013).

In doing so, the report, and its consequent publications, laid the foundation for targeted research into those people who do not move in contexts of environmental degradation (Black et al. 2011, 2013; Thiede and Brown 2013; Black and Collyer 2014). With many acknowledging the need to migrate and the potential benefits of migration, immobility became the (potentially) abnormal, undesirable response to such adverse conditions. Academics, NGOs and IOs have begun to at least acknowledge that climate change and environmental degradation will not always result in migration, and can in fact limit mobility options (Murphy 2014; Nawrotzki and Bakhtsiyarava 2016; Nawrotzki and DeWaard 2018; Rigaud et al. 2018). Unlike previous work that nearly exclusively referenced migration or displacement[2] under the 'mobility umbrella', this body of literature integrates immobility within the mobilities paradigm, as a mobility outcome in the wake of an extreme environmental event (Black et al. 2013; Hasegawa 2013) or slow-onset changes (Black et al. 2011; Adams 2016; Nawrotzki and Bakhtsiyarava 2016; Farbotko 2018).

In terms of mechanisms that 'trap' or 'immobilize', the Foresight report and the subsequent publications often emphasize the financial barriers to migration, particularly for natural resource-based livelihoods, whose dwindling assets can interrupt normal migratory responses to environmental change. Even before Foresight several studies in the 1990s noted how poverty limited mobility options in the face of slow and sudden-onset disasters. Herren (1991) study of the response to droughts in North Central Kenya in thee 1980s found that the poorest were the worst affected precisely because they had no option other than to remain, whereas their middle-income counterparts were able to move away temporarily.

In this way, they have much in common with the work of Carling (2002) as poverty was an essential barrier to effecting migration among Cape Verdeans, in that people aspire to migrate but lack the ability to do so. Environmental degradation broadly, and climate change specifically, add an

---

1 This model has since been updated (Carling and Schewel 2018).
2 And, to a lesser extent, planned relocation.

important element by exacerbating poverty and vulnerability. It is thus essential to consider economic factors not only as preexisting vulnerability factors driving migration or immobility but also as they feedback into the web of causalities. Much of this scholarship, in and out of environmental contexts, also reference multiple forms of capital (human, social) required to move or that act as barriers to migration (Black and Collyer 2014; Chan 1995; Logan et al. 2016).

While capital constraints undoubtedly contribute to trapping people in situ or post-initial movement, as was also found in our own work[3], the spotlight given to economic factors has yet to be sufficiently shared with other factors of immobility. As this nascent concept evolves, its evidentiary complexity is growing (Ayeb-Karlsson et al. 2018). Some recognize the importance of social networks and lack of affective ties outside the community of origin in hindering migration (and even displacement), while others are more inclined to discuss the *choice* to stay and voluntary immobilities rather than labelling 'trapped populations' (Adams 2016; Farbotko 2018; Suliman et al. 2019). In the latter, immobility is not necessarily equated with trapped populations, and place attachment, kinship obligations, and other socio-cultural factors are brought into play. Several examples of relocation programs demonstrate how political interventions must take into account socio-cultural factors and place attachment in order to be successful (Piggott-McKellar et al. 2019). Mortreux and Barnett (2009), for example, demonstrate the importance of religion in driving immobility amongst Tuvaluans, many of whom maintained faith in God's protection of their villages. In the case of relocation in Vunidogoloa in Fiji, elders' reluctance to leave ancestral burial grounds delayed the relocation process for decades (Charan et al. 2017).

We reiterate that immobility is never mono-causal, political factors do not act alone but rather in conjunction with social, economic, environmental and demographic factors to shape immobility patterns and outcomes. Thus, we extend the multi-causality widely accepted in explaining migration to immobility aspirations and capabilities (Carling and Schewel 2018). Political drivers of migration, of course, have long been recognized both within migration studies more broadly and within environmental migration scholarship primarily in terms of conflict (Lubkemann 2008; Foresight 2011). Yet as a driver of immobility, or as a constraint on mobility trajectories, political drivers have received scant attention as they link to environmental contexts outside of acting as trapping forces (Black and Collyer 2014). More commonly, we offer political solutions to avert, minimize and address environmental displacement, e.g., disaster risk reduction programs, or political solutions to facilitate migration as adaptation, e.g., relocation programs and bilateral agreements. We rarely explicitly examine how these policy interventions may affect and effect immobilities.

It is important to note how we conceptualize immobility in what follows. Firstly, mobility and immobility are not fixed categories, one can become immobile after being mobile and vice versa, just as one can move back and forth between irregular and regular migration statuses (Collyer 2007; De Haas 2014). Secondly, labelling immobile or mobile people is a tricky endeavor because all people are to some extent mobile and immobile at the same time. No one is constantly in motion or constantly in stasis. Following others, we therefore move away from the immobility/mobility dichotomy (Glick Schiller and Salazar 2013; Siraj and Bal 2017). As Gutekunst et al. (2016, p. 20) argue, "mobility is always bounded, regulated, mediated and intrinsically connected to forms of immobility and unequal power relations." We thus take immobility as relational and complex (Urry 2002; Adey 2006; Cresswell 2010).

Terminologically, we engage with but do not employ 'trapped populations' for several reasons. Firstly, the complexity of narratives collected requires a more neutral term, we think best offered by immobility. Trapped begins from a more normative stance than our combined case studies support, in that it requires a desire (or aspiration) to move that was not always present in our data. Immobility, or immobile, as we employ it, does not speak to agency, there are those in the study who wanted to leave,

[3] Most explicitly this drove immobility in a case study on Comoros within the IMMOBILE project, although it is beyond the scope of this contribution.

those who did not, and those whose aspirations were not easily categorized into either. Additionally, our exploration of how policy interventions influence immobility are not essentially negative (or positive) and therefore we do not wish to advocate for policies exclusively as 'trapping factors' nor as facilitating factors.

3. Methods

The findings draw on over three years of qualitative fieldwork conducted between 2014 to 2017 in Senegal and Vietnam. The research was designed to understand why some people did not migrate, or stopped migrating, in the face of environmental changes in locations characterized by high mobility and heavy reliance on natural resource-based livelihoods.[4] Here, we focus on data collected in an urban fishing quarter in the north-western city of Saint-Louis, Senegal, and two rural villages in the Mekong River Delta of Vietnam.[5] Contexts on these sites are provided in the following section.

We relied on semi-structured interviews as the primary methodological tool, alongside focus groups and moderate participant observation. A common interview guide was developed for both countries, with each being translated into local languages and reviewed with an interpreter in order to ensure cultural appropriateness and accuracy. In Senegal, 40 interviews were conducted with local residents in French, with the help of a local Guet Ndarian who translated to and from Wolof.[6] As a local, he also acted as an essential gatekeeper in the tightly-knit community. Initial fieldwork in 2014 stimulated a second fieldwork in 2016, with the two separate fieldworks affording insights into the evolution of experiences and perspectives in Guet Ndar.[7] In Vietnam, 40 interviews were conducted with local residents in two villages—Trần Đề in Sóc Trăng Province (coastal) and Thanh Bình in Đồng Tháp Province (riverain)—over the period of August to September 2016. Local partners in Can Tho University facilitated contacts with local authorities, whose approval was required prior to research. A PhD student translated between English and Vietnamese in both sites.

In interviews ranging in length from 30 min to an hour and a half, depending on the willingness of the participant, people were asked about a range of topics: their individual, household, and community vulnerabilities, their impacts on people's lives, people's responses and the responses of authorities, their mobility histories, previous experiences and outcomes, and current (im)mobility motivations, aspirations and capabilities. Biographical information was also collected to consider demographic variables.

Sampling was purposeful, and—to the extent possible—we deployed maximum variation sampling in which we particularly aimed to include a variation in gender, age, livelihood, and life phase amongst participants. This design enriched the data with a diversity of perspectives in each site. Importantly, we conducted interviews with non-migrants (with no history of migration out of the study sites for more than three months), return migrants, seasonal migrants that had returned temporarily, and relocated people (relocated by the government in Vietnam, and those who organized their own short-distance moves out of Guet Ndar but within the city). This was done in order to grasp the wide array of (im)mobility aspirations, capabilities and experiences and perspectives. The interviews were audio-recorded with the permission of participants, anonymized, and were then manually coded for pre-determined and emergent themes. Lastly, in addition to locally affected populations, the studies included interviews with local, regional, and national authorities where permitted and with key

---

[4] Findings are drawn from the IMMOBILE project (2015–2018) in Senegal and Vietnam, financed by the Belgian Fund for Scientific Research (FNRS) and additional earlier fieldwork, using the same methods and general interview guide, was conducted by the author in Senegal the European FP7 Project HELIX (High-End cLimate Impacts and eXtremes) in 2014.

[5] A third case study, in four coastal villages in Ngazidja, Comoros has been excluded from the following analysis precisely because there was a lack of policies targeted at recurrent displacement, a problem in and of itself.

[6] A few of the interview participants spoke French and therefore interviews were conducted directly between interviewer and interviewee.

[7] The only difference in the methods of these two separate fieldworks in Senegal was that the first explicitly centered on the impacts of climate change whereas the second included climate change along other environmental factors.

stakeholders from civil society (NGOs, IOs, academia) who shed light on the contexts of (im)mobility, including political interventions.

Summarizing the main ideas that emerged from these interviews with affected populations and key stakeholders, as well as quoting them directly, we use this data and compiled background documents, secondary literature, and fieldnotes to elaborate the environment-migration context in these two countries before exploring how political interventions in both locations influenced local (im)mobilities.

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of the IMMOBILE Project.

4. Policy Responses to Impacts on (Im)mobility Outcomes in Senegal and Vietnam

The following sections draw evidence from the three study sites in two countries to examine the impacts of political factors as they respond to and facilitate (im)mobility responses to the impacts of climate change. The first section explores the case of Senegal's bilateral agreements with Mauritania regarding international fishing migration, while the second looks at how relocation programs affects and effects internal (im)mobility. We consider that internal and international migration, labor migration and relocation efforts are distinct contexts, and therefore assert that these studies provide a wider berth of evidence from which to draw our conclusions.

4.1. Senegal: Bilateral Agreements and International (Im)mobility

4.1.1. Context of Guet Ndar, Saint-Louis

Senegal has witnessed dramatic changes along its coast, due to man-made interference, but also linked more or less directly to climatic factors, the most important of which are flooding, coastal erosion, soil salinization, mangrove degradation, and changes in fishing regimes (Amara et al. 2019; Ndour et al. 2018). These environmental changes threaten the livelihoods of the approximately 600,000 people directly or indirectly working in the Senegalese fishing industry (FAO 2008). Chief amongst these affected communities, Guet Ndar is a small urban fishing quarter in the second largest city of Senegal, Saint-Louis. Renowned for its skilled fishermen and almost exclusively dependent on the fishing sector, the small sandy spit of land[8] is wedged between the Atlantic Ocean and the Senegal river, a short walk across the bridge from the most famous sites of the former French colonial capital. Several thousand people live together in tightly packed living conditions in one of the most densely populated districts in West Africa, with limited space and land continually shrinking due to sea level rise and coastal erosion (Cormier-Salem 2014; Ndour et al. 2018).

A historical reliance on maritime fishing has made Guet Ndarians some of the most skilled artisanal fishermen in West Africa, fiercely attached to and proud[9] of their traditional livelihoods, but also highly sensitive to environmental changes. As soon as the 1980s, the Senegalese commercial sector began showing signs of distress, and between 1996 and 2007, catches declined by between twenty to forty per cent (Binet et al. 2012). By the 2000s, overfishing by foreign trawlers (EU, Russian, Asian) decimated local fish stocks and diminished biodiversity, resulting in extensive local petitions amongst artisanal fi to retract foreign licenses. Participants perceived this industrial overfishing as the number one threat to their livelihoods. Even though the Senegalese government acquiesced, illegal foreign trawling continues to plague the country, and was continually mentioned as a persistent problem.

---

[8] This stretch of land, including but not limited to Guet Ndar, is known as the Langue de Barbarie spit.
[9] Fishermen frequently mentioned their expertise and pride in it in interviews but also in focus groups and informal meetings.

Adding to the pressure, climate change has further exacerbated local vulnerability (although only one participant cited climate change).[10]

Today, a growing number of artisanal fishermen compete for a declining amount of fish, at the same time that they must defend their homes, equipment, and infrastructure from the sea. Senegal is ranked as the world's eighth most at-risk country in terms of the sea-level rise (Amara et al. 2019). Partial or entire home destruction is well underway on its coastal frontlines, with older fishermen and locals reporting a dramatic encroachment over the past decades. Two participants had their coastal front rooms destroyed, with others sleeping in fear when waves slammed into their rooms at night (increasing wave intensity has also caused several deaths at sea). Climate change not only impacts the livelihoods of fishermen, but also those of women in the fishing industry. Coastal erosion leaves women who transform the fish by salting, smoking, etc., with smaller and smaller spaces to perform their work. Female respondents, whose livelihood infrastructures were less mobile than their male counterparts, cited dangerous working conditions on top of decreased income because of the lack of fish to transform and sell.

Unlike women left with few mobility options, the overexploited fish stocks have pushed Senegalese fishermen to extend their navigation range, and therefore fish further offshore, often in other parts of the country but also in the neighboring countries of Guinea-Bissau and Mauritania. Guet Ndarians are, in fact, no strangers to migration: long-distance, seasonal regional mobility has long been an integral part of Guet Ndarian and Senegalese fishing styles dating back centuries, with them moving across the sub-region from Mauritania to Sierra Leone (Binet et al. 2012). Fishing migration is therefore an essential element of artisanal fisheries (Seck 2014). In interviews and informal meetings in gathering places, Guet Ndarian retired fishers proudly boasted of their seasonal adventures across West Africa and beyond over their careers. However, these patterns were historically short-term and seasonal. Traditional patterns of temporary seasonal migration abroad, alternated with local fishing seasons, have faded dramatically and are being increasingly replaced by longer term international fishing excursions because of the changes in maritime and biodiversity impacts of climate change (Seck 2014), with many participants in the study now reporting only brief annual visits home for religious celebrations. The temporal aspects of fishing migration are not the only markers of change: what was once a migration all over the West African coast has been channeled into a more specific geographical pattern, that of migration to its northern neighbor, Mauritania. Senegalese migrant fishers now take most of their catches from Mauritania (with 48% of the migrant fishers' catch landed in Senegal), followed by Guinea Bissau (33%), The Gambia (19%) and Guinea (<1%) (Belhabib et al. 2014). Guet Ndar's proximity to the border have made the local fishermen particularly economically dependent on their access to Mauritania's waters and intensive exploitation of these neighboring fishing grounds (Hallaire 2015).

4.1.2. Senegal-Mauritanian Bilateral Agreements and International Labor Migration

In response to the impacts of overfishing by foreign trawlers and exacerbating impacts of climate change, Senegal has taken a number of actions, all of which we cannot name here.[11] In 2006 and 2012, they revoked foreign trawler licenses, in 2004 they created several Marine Protected Areas (MPAs) to allow for adequate fish reproduction, including in Saint-Louis, for example. Local fishing authorities, community leaders and participants alike agreed that these measures did little to meet the demands of the burgeoning artisanal fishing industry. Nearly all male, active fishermen interviewed named bilateral agreements with Mauritania as the only effective policy measure currently in place, even if it was far from ideal or desirable: participants cited racism, discrimination, exploitation, and abuse at the hands of locals and coast guard officials in Mauritania. To put this into context, Senegal and

[10] This demonstrated the lack of general awareness in Guet Ndar regarding the threat of climate change and the importance of sensitizing affected communities to its impacts.

[11] For more extensive information, see Seck (2014).

Mauritania have a tense history when it comes to borders and the fishing industry. The 1989 border conflict remains strong in the memories of Guet Ndarian retired fishermen, many of whom were among the tens of thousands forcibly expulsed from Mauritania (Parker 1991). In groups and individually, they vividly recounted stories of physical abuse and the traumatic experience of being forced out of Mauritania.

The two countries were able to find some common ground in recent decades over their waters, despite these historical conflicts. Senegal reached an agreement with the government of Mauritania in 2001 to both countries' benefit. This accord was designed to provide skilled fishers to the Mauritanian fishing industry, traditionally a country whose livelihoods are agricultural rather than maritime-based. For the Senegalese, primarily Guet Ndarian, beneficiaries, it provided some relief by enabling migration to richer waters. The stipulations around the agreement are continually renegotiated, resulting in various iterations since the agreement was reached in 2001 (Seck 2014). From 2009, Senegalese fishers that obtained one of the licenses could then embark in circular labor migration, after a period of fishing for Mauritania (first landing their catch),[12] they could return to Senegal with 40,000 tons of fish annually (landing their second catch) (Seck 2014). The number of licenses was increased from 300 to 400 in 2015, and the catch upped to 50,000 tons. This agreement decreased the reliance on local fish stocks, increased their incomes (and abilities to remit), while allowing fishers to return regularly to their homes in Senegal, even if Guet Ndarians complained that the number remained vastly insufficient to meet the increasing demand placed by a growing number of artisanal boats.

However, political tensions between the neighboring countries resurfaced when the fishing accord was not renewed upon its expiration in 2016, after the Senegalese side refused a Mauritanian demand that fish caught in its waters should be landed in Mauritania.[13] The lack of an accord distressed research participants that were active fishers, who then had to rely on alternative mobility strategies. They could still fish in Mauritania legally, but only in and for Mauritania, meaning they were obliged to stay longer periods in Mauritania under contract with factories. Their second mobility option was to irregularly fish in Mauritanian waters (short distances). Their last option was to remain in Senegalese waters and decrease their incomes, food intakes, and other expenses, adding to already high poverty in the quarter (Seck 2014; Hallaire 2015). Participants decried the withdrawal of licenses because it was their preferred mobility option. It enabled them to fish short periods, return home, and repeat the cycle. Mauritania also struggled without an agreement: the lack of skilled fishermen landing their catch in the country meant that their fish processing factories did not have adequate material to continue operations.[14]

The failure to reach a new agreement was compounded by the political tensions on both sides: Guet Ndarians, even before the cessation, decried physical abuse, corruption, detainment, and the confiscation of their materials by the Mauritanian coast guard. For its part, Mauritania complained of irregular fishing by Guet Ndarians in Mauritanian waters (which indeed many respondents engaged in at one time or another). This tension culminated in the death of a young Senegalese fisherman, shot by the Mauritanian coast guard, which triggered protests in Saint Louis. With mounting economic and social pressure, negotiations recommenced and a new, similar agreement was reached in 2018: 400 licenses would again be allotted for 400 boats, enabling the catch of 50,000 tons of fish annually.[15] The deal was subject to the inspection and weighing of each catch, to be strictly enforced by the Senegalese government and monitored by Mauritanian authorities. As in past iterations, Senegal will give its

---

[12] The length of time varies by fishing type and boat size. Larger boats, that fish in tandem, fish for fifteen days.

[13] Le Point, "Sénégal—Mauritanie: ce que dit le nouvel accord de pêche" 4 July 2018. Last accessed 28 April 2019. https://www.lepoint.fr/economie/senegal-mauritanie-ce-que-dit-le-nouvel-accord-de-peche-04-07-2018-2233234_28.php.

[14] RFI Afrique, "L'accord de pêche entre la Mauritanie et le Sénégal finalisé" 20 December 2018. Last accessed 25 April 2019. http://www.rfi.fr/afrique/20181220-accord-peche-mauritanie-senegal-finalise-usines-poisson-nouakchott.

[15] Le Monde, "Le Sénégal et la Mauritanie signent un nouvel accord de pêche." 4 July 2018. Last accessed 5 June 2019. https://www.lemonde.fr/afrique/article/2018/07/04/le-senegal-et-la-mauritanie-signent-un-nouvel-accord-de-peche_5325948_3212.html.

neighbor 10 EUR for each ton of fish caught in its waters. The agreement covers the span of one year, with the possibility of renewal for an additional year.

4.1.3. Impacts on (Im)mobility

The series of bilateral agreements between Senegal and Mauritania respond to the impacts of overfishing and climate change by encouraging international, circular labor migration schemes. Although the number of licenses are far from adequate for the thousands of Guet Ndarian fishermen suffering from diminished biodiversity and depletion of local fish stocks, they provide relief to those able to obtain them, and the lack of an agreement for two years forced them to seek alternative mobility strategies, some of which were illegal. However, if we move away from simplistic binaries between immobility and mobility, we can also see how the agreement facilitates immobility. The agreement enables the departure of Guet Ndarians abroad, but also their return. Through this political mechanism they can increase their incomes by catching fish abroad, and increase their remittances back to Guet Ndar (which then enables short distance movement away from coastal erosion's threats to their homes), before returning to their traditional homes and families (Zickgraf 2018b). Importantly, this can be done legally, and decreases pressure to permanently move elsewhere in search of work or to fish irregularly and augment risks for imprisonment, fines, abuse, and even death. Evidence of this is clearly demonstrated by the positive reception of the agreements by research participants, and the demand to scale up its purview so that more can take advantage of the scheme.

This desire to both move and to stay in place characterizes (im)mobility strategies in Guet Ndar. Fishers have long migrated, and have no wish to cease movement, but many also recoiled or even laughed at the thought of moving permanently somewhere else. This is primarily due to socio-cultural factors as they drive immobility aspirations. When asked why he did not build or purchase a home in Mauritania since he was living there eleven months a year, one respondent exclaimed "Because I am Guet Ndarian! I am Senegalese! My home is here!".[16] Their desire was to move *and* to return. The movement was a necessity ("The fish migrate and so must we"[17]), the return was the aspiration. This extends to the community's mobility strategies to deal with the residential impacts of coastal erosion: many of those fisher families that benefit (although not all were able to earn enough abroad) from Mauritanian remittances and income use them to construct second homes on the mainland or further down the Barbary Spit, in Hydrobase, for example (Zickgraf 2018b). Despite the ongoing coastal erosion, they do not abandon their primary residences in Guet Ndar, but rather move back and forth between homes. When asked to explain this strategy, respondents emphasized their cultural attachment and obligations to maintain traditional homes in Guet Ndar, homes that have been held for generations. This is echoed across livelihoods, genders, and is especially important for elders. This was religious as well, ancestral burial grounds in Guet Ndar acted as an anchoring force. Many men and women refused the thought of entirely leaving their ancestors behind, even for those who recognized the impending danger. When confronted with asked about this, one elderly woman scoffed, "Let [the sea] come! I was born here and I will die here."[18] In the second study period, with increasing awareness of the irreversibility and imminence of disappearing land, fewer respondents completely rejected the notion of internal relocation to other parts of Saint-Louis, but partial (im)mobility (with one foot in Guet Ndar) was an adamant condition. Here, political factors coalesce with cultural notions of migration and place attachment. The bilateral agreements simultaneously facilitate mobility and immobility, challenging our external notions of migrant versus non-migrant, the aspiration to go versus the aspiration to stay, and that politics and policies either enable/force migration or they enable/force stasis.

---

16 Author's translation. Interview, Guet Ndar, Saint-Louis, Senegal. August 3, 2014.
17 Author's translation. Interview in Guet Ndar, Saint-Louis, Senegal. July 26, 2014.
18 Author's translation. Interview, Guet Ndar, Saint-Louis, Senegal. July 20, 2014.

However, we must also see how policies are embedded in macro-level political structures and attitudes. This case study is primarily one of international migration, and therefore subject to border controls and enforcement, and requires international cooperation. The case of Mauritania and Senegal shows how these policies can easily fall prey to political tensions, and result in less desirable (im)mobility patterns in the community when bilateral agreements are rescinded: fishers being increasingly 'stuck' in Mauritania, separated from their families for longer durations, or 'stuck' in Guet Ndar, with their families but without sufficient resources to protect themselves from the impacts of sea level rise and coastal erosion.

4.2. Vietnam: Relocation Programs and Internal (Im)mobility

4.2.1. Context of the Mekong River Delta

Similar to Senegal, Vietnam is especially vulnerable to the effects of climate change, from intensifying and more frequent disasters to slow-onset effects including sea-level rise. According Dasgupta et al. (2009), given a 1-meter sea-level rise, Vietnam would be the world's most affected developing country in terms of population (10.8%), GDP (a 10.2% reduction), and the number of wetlands inundated (28.7%). A two-meter rise would see almost half of the country's agricultural area inundated (Warner et al. 2009).

Perhaps nowhere are the impacts of climate change in Vietnam more menacing than in the Mekong River Delta (MRD) region, which importantly produces the majority of the country's staple food and holds much of its arable land (Ho and Shimada 2019; Warner et al. 2009).[19] The region holds urban and rural dwellers, home to one of the most populated regions of the country. Its agriculture is largely dependent on rice and fish production. As such, sea level rise (SLR), drought, coastal erosion and soil salinization are threatening rural livelihoods and concomitantly storms, severe floods, and landslides threaten people's homes. The two villages studied, Thanh Bình and Trần Đề, represent two rural populations that are faced with both impacts. The former is a riverain population, spared from the coastal threats, but parts of the province facing riverbank erosion, mudslides, and rainfall variability. The latter escapes mudslides, but must cope with saline water intrusion, storm surges, sea level rise. Both experience the region's characteristic flooding, and are susceptible to increased rainfall variability.

Residents of the two rural villages, unlike their Senegalese counterparts, exhibit various livelihoods: respondents were fishers, rice farmers, shrimp farmers, small-scale fruit farming, livestock, and manual labor (drivers, handymen, and labor-for-hire). Nonetheless, they are all highly vulnerable to the changing environmental conditions. Droughts are particularly difficult for rice production, which requires flooding and the nutrients it brings, without which saline intruding in the south cannot be expelled. Rainfall and temperature variability plague harvesting and planting cycles. Aquaculture fares better with saline water intrusion, but is costly and requires some technical expertise. Manual laborers are dependent on agricultural production for employment and to run local economies, so when farming fails, they are left unemployed and impoverished. In order to cope with environmental stress, people reported using traditional flood coping mechanisms, such as stacking furniture during the wet season. Fishers could fish further distances, and during severe storms in Trần Đề, families evacuated to local community centers or sought shelter with neighbors. In situ responses to drought, rainfall variability, riverbank erosion, mudslides, and saline water intrusion were less obvious in both sites. While some tried their hand at diversifying crop production, others reported doing nothing at all owing to their poverty and with few strategies available to them, reporting living "day by day".

Whereas Guet Ndar called upon international migration, MRD respondents almost exclusively cited internal migration in response to the impacts of environmental degradation, or no mobility

[19] As of 2009, it accounted for 40 percent of the country's cultivated land surface and produced more than a quarter of the country's GDP. Half of Vietnam's rice is produced in the Mekong River Delta, 60 percent of its shrimp harvest, and 80 percent of the national fruit crop. Ninety percent of Vietnam's total national rice export comes from the MRD (Warner et al. 2009).

at all. Migration to the cities offered youth and those active on the labor market a way to escape the vulnerability of rural, natural resource-based livelihoods. Many participants had either left and returned, or had children engaged in internal urban migration. Those interviewed had adult children living in and around Ho Chi Minh City, with nearly all citing economic motivations for the move. They lamented the lack of local job opportunities as well as the limited, and decreasing, agricultural production, which could only support a few family members owing to the size of plots and their degradation. Primarily, their migrant children found employment in urban or peri-urban factories. This internal migration diversified household income, as several immobile households received small-scale remittances, a welcome material comfort for the elderly, unemployed, small-scale fishers, farmers, and poor manual laborers that stayed behind. That being said, financial remittances were small owing to the low wages and high cost of living in Ho Chi Minh and could rarely support the entire family, if they were sent at all. In fact, several people had since returned to the study sites and surrounding area after becoming disillusioned with their inability to save their earnings in the big city. Lastly, these remittances were unable to protect families from storm surges, mudslides and riverbank erosion, leaving residents to watch as their homes were battered and/or destroyed in extreme events.

4.2.2. Resettlement Schemes in the Mekong River Delta

The sharp increase in environmental degradation has had great detrimental consequences for the MRD, negatively impacting agricultural productivity and human security. These direct and indirect detrimental effects are pressuring the authorities and the residents of Mekong River Delta to find solutions to cope with and adapt to their changing environment. Similar to Senegal, population movements have been one such solution envisioned by the government. Whereas Senegal saw international labor migration (leading to internal self-relocation) as its key migration pathway, two main migration patterns can be discerned in the Mekong Delta: the abovementioned labor out-migration to Ho Chi Minh City (but also to other intraregional areas) and internal planned relocation within the MRD.

The former, internal labor migration, is discouraged by local and national authorities, with Ho Chi Minh City under mounting population pressure. Local authorities in the Thanh Bình District in Đồng Tháp province interviewed stated that they did not want to encourage rural-to-urban flows and wanted to keep young people in place. In order to do so, the government subsidized seeds and rice for local farmers and were looking to rather attract industry to the district in order to create local jobs and decrease out-migration.[20] Outside of agricultural subsidies to address livelihood impacts, the primary instrument of protecting people from environmental hazards in order to keep them in place was, in fact, to move them. The country's environmental and climatic threats have lead the national government to design programs specifically targeting households vulnerable to environmental hazards, chiefly through the national government-designed and locally implemented, 'Living with Floods' (LWF) program[21]. In 1996, the resettlement program was launched with the objective to build houses for relocated residents of the Delta affected by severe flooding, and the government has since engaged in large-scale relocation in several regions (Danh and Mushtaq 2011; Dun 2011; Chun 2015; MECLEP 2017). After catastrophic floods in the MRD in 2000, the government introduced the concept of LWF into its disaster mitigation and management policies, based on the premise that flood risks should be mitigated, while also recognizing that floods are crucial to agricultural livelihoods, food security, and the country's economic development (Chun 2015). LWF's resettlement program primarily targets households vulnerable to riverbank erosion, landslides or frequent storms in order to relocate them into "resettlement clusters" (RC). The program enables participants to acquire houses in nearby relocation sites identified by the local authorities for those deemed eligible, typically due to residential

[20] Interview with local officials from the Department of Natural Resources, Thanh Bình District. 7 September 2016.
[21] The overarching Living with Floods Policy includes two programs: (1) construction of dykes and (2) resettlement schemes.

rather than livelihood exposure. Poor program participants then have access to preferential loans for home construction. All resettlement sites must be 0.5 m higher than the peak of flooding in 2000, and since 2004, houses must be no smaller than 32 square meters (Danh and Mushtaq 2011).

A key feature of the LWF is local implementation. Local authorities are largely responsible for designing relocation, selecting participating households, and implementing the move, and funding varies from one district to another. Generally, households were selected based on exposure to hazards and poverty levels, with the dual objective of decreasing physical exposure and poverty levels. However, participant selection criteria were largely left to local authorities to determine, resulting in localized processes rather than transparent, harmonious selection processes (Chun 2015).

The program focuses on maintaining and sustaining local livelihoods while simultaneously decreasing exposure to natural hazards; therefore, most relocations take place within short distances, 1–2 km, often within districts wherever possible (MECLEP 2017; Warner et al. 2009), although our own respondents moved slightly farther. In a 2006 national decision, the priority to minimize distances was made explicit:

> Population distribution shall be conducted mainly within communes, districts and provinces. Where population should be relocated to other provinces, agreement should be reached between provinces where people leave and those where they move to in order to arrange them in the planned areas so as to stabilize their life and production for permanent settlement.[22]

Reflecting this approach, in Nam Can district in Ca Mau province, an estimated 4000 households were relocated to a new site only about a kilometer away (MECLEP 2017). Similarly, relocation in and to the villages under study entailed short distance moves to nearby sites, approximately 6 kilometers, often keeping communities together to minimize adverse social impacts and maintain economic productivity. Respondents had repeatedly been displaced or evacuated during storm, flood, or mudslide events, they were then moved short distances away from their original property and often together. Some participants were not moved under the program, but, facing the same risks, sold their land and financed their own move to Thanh Bình from nearby Hòa Bình. This allowed the community to continue to their previous livelihoods as their source of income by being near enough to their croplands to commute back and forth.

4.2.3. (Im)mobility Impacts

The (im)mobility impacts of the LWF program, as in Senegal, demonstrate the connectedness of mobility and immobility aspects in that both government actions facilitated movement and in doing so enabled a degree of stasis. LWF and local authorities did not wish to promote long-distance, internal migration, and resettlement was actually a means of keeping people in place. This coincided with the wishes of the elder people interviewed (if not the younger), who neither aspired to leave nor felt they had the ability at their age. As one 40-year-old farmer and fisherman in Trần Đề explained:

> Most young people migrate. Middle-aged and older people prefer to live off of the land and be supported by the local authorities. [. . .] It's difficult to find a good job. The young move to earn money for the family. They work and earn money, and we live day by day.[23]

Older respondents additionally had no desire to leave their villages for other regions or places for cultural reasons. When asked why, they simply stated that they were born and grew up in the districts or province. Therefore, Vietnamese respondents were satisfied with being moved in several

---

[22] Decision No. 193/2006/QD-TTg, issued on 24 August 2006 on 'Approving the Program on population distribution in natural disaster- and special difficulty-hit areas, border regions, islands, areas inhabited by free migrants, and important and very important areas of protective forests and strictly protected zones of special-use forests in the 2006 to 2010 period, and orientations up to 2015', cited in (Chun 2015, p. 10). For more relevant national decisions, see (Chun 2015).

[23] Interview in Trần Đề, Soc Trang province, Vietnam. 6 September 2016.

aspects. Firstly, relocation provided them physical security by providing new, safer housing, and in doing so decreased their mental distress caused by recurrent environmental shocks and displacement. This physical security instilled a sense of stability that people repeatedly lauded, stability being a central theme in interviews and a basic cultural value. Even if their livelihoods were uncertain, the stability of a home, after years of recurrent disasters, was more important than their income. Their satisfaction came, secondly, from the fact that they did not have to move far—remaining within their districts or provinces. This was important to people because they maintained their social networks and sense of community. Owing to this consideration on the part of the LWF and local authorities, they were welcomed into their new communities by the existing population and did not report any social disintegration or negative cultural outcomes because of the cultural and geographical proximity between sites.

In these regards, the program was a success. It kept people (relatively) in place, which aligned with their own (im)mobility aspirations. However, its participants did not have universal praise for the program. While meeting the objective of safeguarding people from environmental hazards, many people were economically worse off. Despite the program's emphasis on alleviating poverty, it did not enable income diversification because livelihood sources remained unchanged. They were not offered new plots of land to farm or training in new trades. People had to commute to their existing plots and fields, the commute itself being a costly struggle for many. Their lack of change in livelihoods meant that people still faced the agricultural and economic impacts of climate change and environmental degradation. Additionally, for some, their economic situation was actually worse than before because they accrued debt in the process. Although some assistance was offered, many of them were obliged to take on government loans to construct their new homes. Even if the terms of these loans were favorable for poor households, considering that they already struggled with climate impacts on livelihoods, repaying their debts was particularly difficult. One 58-year-old farmer took on debt in 2012 to move to Thanh Bình to escape intense flooding. At the time, his crops being relatively good, he expected to pay the debt to the local authorities off without trouble. Since 2014, however, he struggled with decreased flooding, low soil fertility, increased heat and diseases in his rice crops. These had crippling effects on his livelihood and ability to repay. Two participants reported that the debt accumulation from relocation prevented them from sourcing medication or affordable cancer treatments. Echoing studies on LWF in other sites, vulnerability to the impact of hazards on livelihoods thus remained for those relocated (Chun 2015; Entzinger and Scholten 2015, 2016). The implications of this for future (im)mobility are twofold. On one hand, the economic vulnerability not being treated by LWF means that economic incentives for rural-to-urban migration persist. On the other hand, poor households with dwindling resources because of climate change, and accrued debt because of relocation, may be even less able to engage in migration in the future or to independently enact other coping and/or adaptation strategies.[24] Nonetheless, even with debt, most wanted to stay put once relocated. Illustrating the importance of immobility aspirations, one 72-year-old woman, relocated because of mudslides in 2012, relied on her five children living within the district for income. However, as their incomes were unstable, she had no means of repaying her loans. Asked about her aspirations to leave, she replied:

> [Respondent]: I don't have money to leave. But even if I did, I wouldn't go because the local authorities support me with the land and I was born and grew up here, even if life is difficult.
>
> [Interviewer]: What about your children?
>
> [Respondent]: I don't want them to go far away. No, they can live here. When there are troubles, we can help each other. [. . .] No, never anywhere else. Never.[25]

[24] It is also important to consider in light of findings that the poorest households are the most likely to migrate in the MRD (Entzinger and Scholten 2016). Migration decreases as income increases.

[25] Interview in Thanh Bình village, Dong Thap province, Vietnam. 8 September 2016.

5. Conclusions

The results from this research stress the importance of considering how political factors respond to, but also result in, (im)mobility in the context of climatic change. Although the cases of Senegal and Vietnam have notable differences—one entails bilateral agreements facilitating international migration, while the other uses planned relocation programs for internal migration—we assert that their different contexts, mechanisms, and objectives can both be viewed with similar lenses. Generally, literature compartmentalizes migration, displacement and, especially, planned relocation; yet their commonalities transcend these divisions. Taken at face value, these two policy interventions aimed to enable mobility as a response to climatic and environmental change for their citizens: in Senegal, international agreements with Mauritania responded to coastal livelihood threats for active male fishermen and in Vietnam relocation programs treated residential threats through short-distance movement of primarily older households. The positive aspects of these programs demonstrate how promoting population movement can act as an adaptation strategy to climate change, in keeping with the migration-as-adaptation discourse (Black et al. 2011). Yet, we argued that the very same policies can also be read as facilitating (im)mobility. Our modest analysis undoubtedly has its limitations: there are many more political factors at various scales that have far-reaching consequences on how people enact mobility and immobility in the face of climatic and environmental changes. Future research possibilities in an emerging literature abound. One might scale up to the international, multi-lateral migration and/or climate mobility policies and see how they combine with national and local ones, or examine at how policies are designed to (re)produce uneven, gendered immobilities. We would assert that transnational, translocal, and mobilities studies and methods would be of particular value.

The analysis also challenged the dominant either/or readings of populations' aspirations and capabilities. Both populations (largely) desired to stay put for socio-cultural reasons, excluding them from warranting the label of 'trapped population', but they also expressed the need to move because of the impacts of environmental degradation and climate change on their everyday lives and livelihoods. Their aspirations were complex, to both desire stasis and movement. Treating the complexity of aspirations and capabilities in future research should allow for theoretical advances, but also reality-based policy approaches. By no means do political factors account exclusively for (im)mobility, but if we do not analyze them as they feedback into (im)mobility in a web of causalities, we limit our abilities to understand phenomena of climate change's impacts on migration, displacement and relocation. Our case studies demonstrate that neither a sedentary bias or a mobility bias should cloud our judgment. Policies, like people, do not necessarily fit neatly into oppositional boxes. Keeping people in place can, in fact, mean allowing the very same people to move.

Funding: The research leading to these results has received funding from the European Union Seventh Framework Programme FP7/2007–2013 under grant agreement no. 603864 (HELIX: High-End cLimate Impacts and eXtremes; http://www.helixclimate.eu) as well as support from the Belgian Fund for Scientific Research (FRS-FNRS; http://www.frs-fnrs.be), which financed the IMMOBILE project (2015-2018) ((Im)mobility in Crisis: Migration, Immobility and Environmental Changes).

Conflicts of Interest: The author declares no conflict of interest.

References

Adams, Helen. 2016. Why Populations Persist: Mobility, Place Attachment and Climate Change. *Population and Environment* 37: 429–48. [CrossRef]

Adey, Peter. 2006. If Mobility Is Everything Then It Is Nothing: Towards a Relational Politics of (Im)Mobilities. *Mobilities* 1: 75–94. [CrossRef]

Amara, Rachid, Mamadou Diop, Cheikh Diop, and Baghdad Ouddane. 2019. Chapter 37—The Senegalese Coastal and Marine Environment. In *World Seas: An Environmental Evaluation*, 2nd ed. Edited by Charles Sheppard. Cambridge: Academic Press, pp. 855–73. [CrossRef]

Ayeb-Karlsson, Sonja, Christopher D. Smith, and Dominic Kniveton. 2018. A Discursive Review of the Textual Use of 'Trapped' in Environmental Migration Studies: The Conceptual Birth and Troubled Teenage Years of Trapped Populations. *Ambio* 47: 557–73. [CrossRef] [PubMed]

Belhabib, Dyhia, Viviane Koutob, Aliou Sall, Vicky W. Y. Lam, and Daniel Pauly. 2014. Fisheries Catch Misreporting and Its Implications: The Case of Senegal. *Fisheries Research* 151: 1–11. [CrossRef]

Binet, Thomas, Pierre Failler, and Andy Thorpe. 2012. Migration of Senegalese Fishers: A Case for Regional Approach to Management. *Maritime Studies* 11: 1. [CrossRef]

Black, Richard, and Michael Collyer. 2014. 'Trapped' Populations: Limits on Mobility at Times of Crisis. In *Humanitarian Crises and Migration*. Edited by Susan F. Martin, Sanjula Weerasinghe and Abbie Taylor. London: Routledge, pp. 287–305.

Black, Richard, Stephen R. G. Bennett, Sandy M. Thomas, and John R. Beddington. 2011. Climate Change: Migration as Adaptation. *Nature* 478: 447–49. [CrossRef] [PubMed]

Black, Richard, Nigel W. Arnell, W. Neil Adger, David Thomas, and Andrew Geddes. 2013. Migration, Immobility and Displacement Outcomes Following Extreme Events. *Environmental Science & Policy* 27: S32–S43. [CrossRef]

Carling, Jørgen. 2002. Migration in the Age of Involuntary Immobility: Theoretical Reflections and Cape Verdean Experiences. *Journal of Ethnic and Migration Studies* 28: 5–42. [CrossRef]

Carling, Jørgen, and Kerilyn Schewel. 2018. Revisiting Aspiration and Ability in International Migration. *Journal of Ethnic and Migration Studies* 44: 945–63. [CrossRef]

Chan, Ngai Weng. 1995. Choice and Constraints in Floodplain Occupation: The Influence of Structural Factors on Residential Location in Peninsular Malaysia. *Disasters* 19: 287–307. [CrossRef]

Charan, Dhrishna, Manpreet Kaur, and Priyatma Singh. 2017. Customary Land and Climate Change Induced Relocation—A Case Study of Vunidogoloa Village, Vanua Levu, Fiji. In *Climate Change Adaptation in Pacific Countries: Fostering Resilience and Improving the Quality of Life*. Climate Change Management. Edited by Walter Leal Filho. Cham: Springer International Publishing, pp. 19–33. [CrossRef]

Chun, Jane M. 2015. *Planned Relocations in the Mekong Delta: A Successful Model for Climate Change Adaptation, a Cautionary Tale, or Both?* Washington: Brookings Institute.

Collyer, Michael. 2007. In-Between Places: Trans-Saharan Transit Migrants in Morocco and the Fragmented Journey to Europe. *Antipode* 39: 668–90. [CrossRef]

Cormier-Salem, Marie-Christine. 2014. Participatory governance of Marine Protected Areas: a political challenge, an ethical imperative, different trajectories. Senegal case studies. *S.A.P.I.EN.S. Surveys and Perspectives Integrating Environment and Society* 7. Available online: http://journals.openedition.org/sapiens/1560 (accessed on 1 July 2019).

Cresswell, Tim. 2010. Towards a Politics of Mobility. *Environment and Planning D: Society and Space* 28: 17–31. [CrossRef]

Danh, Vo Thanh, and Shahbaz Mushtaq. 2011. Living with Floods: An Evaluation of the Resettlement Program of the Mekong Delta of Vietnam. In *Environmental Change and Agricultural Sustainability in the Mekong Delta*. Edited by Mart A. Stewart and Peter A. Coclanis. Dordrecht: Springer Netherlands, pp. 181–204. [CrossRef]

Dasgupta, Susmita, Benoit Laplante, Craig Meisner, David Wheeler, and Jianping Yan. 2009. The Impact of Sea Level Rise on Developing Countries: A Comparative Analysis. *Climatic Change* 93: 379–88. [CrossRef]

De Haas, Hein. 2014. *Migration Theory: Quo Vadis? IMI WP-100-2014/DEMIG Project Paper 24*. Oxford: University of Oxford.

Dun, Olivia. 2011. Migration and Displacement Triggered by Floods in the Mekong Delta. *International Migration* 49: e200–e223. [CrossRef]

Entzinger, Han, and Peter Scholten. 2015. Relocation as an Adaptation Strategy to Environmental Stress: Lessons from the Mekong River Delta in Vietnam. In *Migration, Environment and Climate Change Policy Brief Series*. MECLEP Policy Brief Series, 6; Geneva: IOM.

Entzinger, Han, and Peter Scholten. 2016. *Adapting to Climate Change through Migration: A Case Study of the Vietnamese Mekong River Delta*; Findings from the MECLEP Project. Geneva: International Organization for Migration (IOM). Available online: https://environmentalmigration.iom.int/adapting-climate-change-through-migration-case-study-vietnamese-mekong-river-delta-vietnamese (accessed on 29 March 2019).

Foresight. 2011. *Foresight: Migration and Global Environmental Change Final Project Report*. London: The Government Office for Science.

FAO (Food and Agriculture Organization of the United Nations). 2008. Vue Générale Du Secteur Des Pêches National: La République Du Sénégal. Available online: ftp://ftp.fao.org/Fi/DOCUMENT/fcp/fr/FI_CP_SN.pdf (accessed on 7 June 2019).

Farbotko, Carol. 2018. Voluntary Immobility: Indigenous Voices in the Pacific. *Forced Migration Review* 57: 81–83.

Gemenne, François. 2011. How They Became the Human Face of Climate Change. Research and Policy Interactions in the Birth of the 'Environmental Migration' Concept. In *Migration and Climate Change*. Edited by A. Pecoud, E. Piguet and P. De Guchteneire. Cambridge and Paris: Cambridge University Press/UNESCO, pp. 225–59.

Glick Schiller, Nina, and Noel B. Salazar. 2013. Regimes of Mobility across the Globe. *Journal of Ethnic and Migration Studies* 39: 183–200. [CrossRef]

Gray, Clark L., and Valerie Mueller. 2012. Natural Disasters and Population Mobility in Bangladesh. *Proceedings of the National Academy of Sciences* 109: 6000–5. [CrossRef]

Gutekunst, Miriam, Andreas Hackl, Sabina Leoncini, Julia Sophia Schwarz, and Irene Götz. 2016. *Bounded Mobilities: Ethnographic Perspectives on Social Hierarchies and Global Inequalities*. Bielefeld: Transcript Verlag.

Hallaire, Juliette. 2015. The Mobility Strategies of the Senegalese Fishermen at the Senegal-Mauritania Maritime Border. *Portuguese Journal of Social Science* 14: 87–105. [CrossRef]

Hasegawa, Reiko. 2013. Disaster Evacuation from Japan's 2011 Tsunami Disaster and the Fukushima Nuclear Accident. *IDDRI, Sciences Po Re Port* 5: 1–54.

Herren, Urs J. 1991. 'Droughts Have Different Tails': Response to Crises in Mukogodo Division, North Central Kenya, 1950s–1980s. *Disasters* 15: 93–107. [CrossRef]

Ho, Thanh Tam, and Koji Shimada. 2019. The Effects of Climate Smart Agriculture and Climate Change Adaptation on the Technical Efficiency of Rice Farming—An Empirical Study in the Mekong Delta of Vietnam. *Agriculture* 9: 99. [CrossRef]

Jónsson, Gunvor. 2011. *Non-Migrant, Sedentary, Immobile, or 'Left behind'? Reflections on the Absence of Migration*. Working Paper 39. Oxford: The International Migration Institute (IMI), Oxford Department of International Development.

Logan, John R., Sukriti Issar, and Zengwang Xu. 2016. Trapped in Place? Segmented Resilience to Hurricanes in the Gulf Coast, 1970–2005. *Demography* 53: 1511–34. [CrossRef] [PubMed]

Lubkemann, Stephen C. 2008. Involuntary Immobility: On a Theoretical Invisibility in Forced Migration Studies. *Journal of Refugee Studies* 21: 454–75. [CrossRef]

MECLEP. 2017. Making Mobility Work for Adaptation to Environmental Changes: Results from the MECLEP Global Research|Environmental Migration Portal. International Organization for migration (IOM). Available online: https://environmentalmigration.iom.int/making-mobility-work-adaptation-environmental-changes-results-meclep-global-research (accessed on 30 April 2019).

Mortreux, Colette, and Jon Barnett. 2009. Climate Change, Migration and Adaptation in Funafuti, Tuvalu. *Global Environmental Change* 19: 105–12. [CrossRef]

Murphy, Daniel W. A. 2014. Theorizing Climate Change, (Im)Mobility and Socio-Ecological Systems Resilience in Low-Elevation Coastal Zones. *Climate and Development* 7: 380–97. [CrossRef]

Nawrotzki, Raphael J., and Maryia Bakhtsiyarava. 2016. International Climate Migration: Evidence for the Climate Inhibitor Mechanism and the Agricultural Pathway. *Population, Space and Place* 23: e2033. [CrossRef] [PubMed]

Nawrotzki, Raphael J., and Jack DeWaard. 2018. Putting Trapped Populations into Place: Climate Change and Inter-District Migration Flows in Zambia. *Regional Environmental Change* 18: 533–46. [CrossRef] [PubMed]

Ndour, Abdoulaye, Raoul A. Laïbi, Mamadou Sadio, Cossi G. E. Degbe, Amadou T. Diaw, Lucien M. Oyédé, Edward J. Anthony, Philippe Dussouillez, Hyacinthe Sambou, and El hadji Balla Dièye. 2018. Management Strategies for Coastal Erosion Problems in West Africa: Analysis, Issues, and Constraints Drawn from the Examples of Senegal and Benin. *Ocean & Coastal Management* 156: 92–106. [CrossRef]

Olwig, Karen Fog. 1999. Narratives of the Children Left behind: Home and Identity in Globalised Caribbean Families. *Journal of Ethnic and Migration Studies* 25: 267–84. [CrossRef]

Parker, Ron. 1991. The Senegal-Mauritania Conflict of 1989: A Fragile Equilibrium. *The Journal of Modern African Studies* 29: 155–71. [CrossRef]

Penning-Rowsell, Edmund C., Parvin Sultana, and Paul M. Thompson. 2013. The 'Last Resort'? Population Movement in Response to Climate-Related Hazards in Bangladesh. *Environmental Science & Policy* 27: S44–S59. [CrossRef]

Piggott-McKellar, Annah E., Karen E. McNamara, Patrick D. Nunn, and Seci T. Sekinini. 2019. Moving People in a Changing Climate: Lessons from Two Case Studies in Fiji. *Social Sciences* 8: 133. [CrossRef]

Piguet, Etienne. 2018. Theories of Voluntary and Forced Migration. In *Routledge Handbook of Environmental Migration and Displacement*. Edited by Robert McLeman and François Gemenne. London: Routledge, pp. 17–28.

Rigaud, Kanta Kumari, Alex de Sherbinin, Bryan Jones, Jonas Bergmann, Viviane Clement, Kayly Ober, and Jacob Schewe. 2018. *Groundswell: Preparing for Internal Climate Migration*. Washington: World Bank.

Schewel, Kerilyn. 2019. Understanding Immobility: Moving Beyond the Mobility Bias in Migration Studies. *International Migration Review*, 0197918319831952. [CrossRef]

Seck, Aichetou. 2014. *Les Pêcheurs Migrants de Guet-Ndar (Saint-Louis Du Sénégal): Analyse d'une Territorialité Diverse Entre Espaces de Conflits et Espaces de Gestion*. Liège: University of Liège.

Siraj, Nasrin, and Ellen Bal. 2017. 'Hunger Has Brought Us into This Jungle': Understanding Mobility and Immobility of Bengali Immigrants in the Chittagong Hills of Bangladesh. *Social Identities* 23: 396–412. [CrossRef]

Suliman, Samid, Carol Farbotko, Hedda Ransan-Cooper, Karen Elizabeth McNamara, Fanny Thornton, Celia McMichael, and Taukiei Kitara. 2019. Indigenous (Im)Mobilities in the Anthropocene. *Mobilities* 1–21. [CrossRef]

Thiede, Brian C., and David L. Brown. 2013. Hurricane Katrina: Who Stayed and Why? *Population Research and Policy Review* 32: 803–24. [CrossRef]

Urry, John. 2002. Mobility and Proximity. *Sociology* 36: 255–74. [CrossRef]

Warner, Koko, Charles Ehrhart, A. de Sherbinin, Susana Adamo, and Tricia Chai-Onn. 2009. In Search of Shelter: Mapping the Effects of Climate Change on Human Migration and Displacement. Available online: http://www.careclimatechange.org/files/reports/CARE_In_Search_of_Shelter.pdf (accessed on 30 March 2019).

Zickgraf, Caroline. 2018a. Immobility. In *Routledge Handbook on Environmental Displacement and Migration*. Edited by François Gemenne and Robert McLeman. London: Routledge.

Zickgraf, Caroline. 2018b. 'The Fish Migrate and so Must We': The Relationship between International and Internal Environmental Mobility in a Senegalese Fishing Community. *Journal Medzinarodne Vztahy* 16: 5–21.