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LINKS BETWEEN ENVIRONMENTAL DEGRADATION AND MIGRATION FLOWS IN AFRICA: CHALLENGES AND IMPACTS

FOCUS ON NORTH AFRICA AND THE SAHEL



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Advocacy note

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In this note, the Sahel is considered as the area of action of the Inter-State Committee for Drought Control in the Sahel (CILSS) whose member countries are : Burkina Faso, Cape Verde, Gambia, Guinea Bissau, Mali, Mauritania, Niger, Senegal and Chad.

What is an environmental refugee?

Environmental refugees are people forced to, temporarily or permanently, leave their habitats due to an environmental disruption (natural or human origin) jeopardizing their existence or seriously affecting their quality of life (UNEP, 1985).

INTRODUCTION

The international community is increasingly concerned with the relationship between global migration flows and environmental disturbances, including the degradation of ecosystems and the effects of climate change. Indeed, this relationship has been proven and the links between these two phenomena have become a major political issue on a planetary scale. With a growing world population and deteriorating environmental conditions, the challenges related to migration are likely to increase in the years ahead of us. Strongly impacted by the effects of climate change, Africa is one of the areas most affected by environmental migration flows.

However, the impact of environmental disturbances on the mobility of the populations is not accurately assessed because of the coexistence of socio-economic, demographic and political difficulties and for the difference between environmental refugees and other refugees is yet to clarify.

This note is an attempt to explain this phenomenon in Africa, with a focus on North Africa and the Sahel, and provides recommendations and good practices, in order to lay the foundations for advocacy.

Why is taking action against global warming pressing in Africa?

According to the Groundswell Africa report, published in 2021 by the World Bank right before the 26th session of the United Nations Climate Conference (CoP26), the African continent could become the region of the world hardest hit by climate change, with 86 million climate migrants expected by 2050.

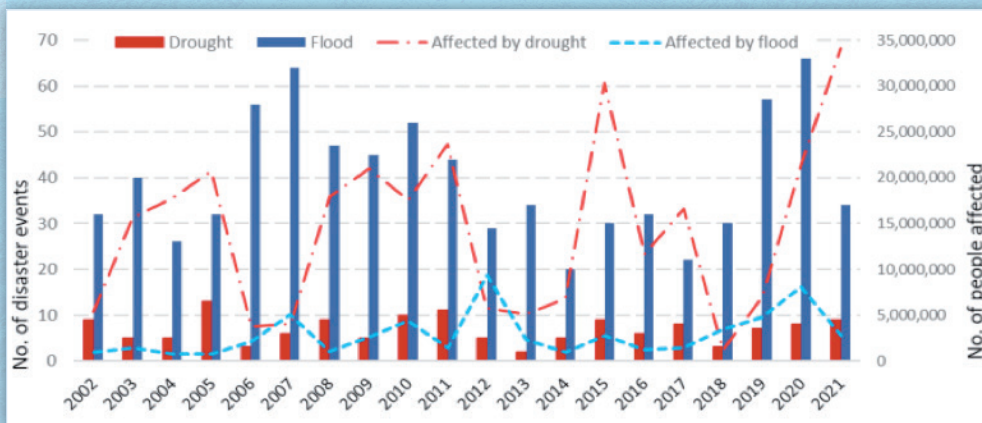
ENVIRONMENTAL AND CLIMATE CONTEXT IN NORTH AFRICA AND THE SAHEL

The Sahel is one of the most vulnerable regions to the climate change impacts. It is even identified as one of the tipping points of the planet if the average temperature on the surface of the globe increases by 3°C compared to pre-industrial levels (Report of the Country Climate and Development Report for the G5 Sahel). According to the IPCC, most climate scenarios show that the Sahel will register a 2°C temperature increase in the short term (2021-2040).

As Africa is particularly prone to land degradation and desertification, climate vulnerability of the continent will be increasingly exacerbated by the heavy dependence on rain-fed agriculture and its natural resources to ensure food security and livelihoods, more particularly for the Western Sahel, considered to be one of the poorest and most environmentally degraded regions in the world (USAID, 2017 ; AfDB, 2022).

West African countries are particularly vulnerable to droughts. According to the International Disasters Database - EM-DAT (CRED, 2022), this region has been hit by droughts more than 50 times, between 1980 and 2015. Drought, floods and fires cause huge economic losses that put in danger the livelihoods of the most vulnerable populations. In addition, extreme events such as storms and floods damage energy and hydroelectric infrastructure. The rise in sea level and the increase in temperature are all contributors to the movement of the populations.

The fifth IPCC report came to confirm that North Africa is seriously lying under the threat of climate change and is one of the regions most vulnerable to water stress. In most countries of this region, average and seasonal temperatures have increased twice as fast as the global average due to the climate change impacts (Ranasinghe et al., 2021), the duration of hot seasons has also increased (Nashwan et al., 2018) as well as the magnitude and spatial extent of heat waves since 1980 (Engdaw et al., 2021). Average annual rainfall decreased significantly in most of North Africa between 1971 and 2000 (Nicholson et al., 2018 ; Zittis, 2018) and worsened the aridity situation in this part of the continent (Greve et al., 2019).



Drought and flood events and their impact in Africa (2002-2021).

Source : EM-DAT.

1- HISTORY OF ENVIRONMENTAL AND CLIMATE MIGRATION

Environmental migration is not a new phenomenon since massive population movements caused by natural disasters have been reported over the years.

However, the international consciousness seems to have taken note of environmental and climate migrations quite late. In the 1970s, this subject became a topic of interest with the introduction of the environmental theme in the agenda of international organizations. In 1972, the Stockholm Summit of the United Nations led to the creation of the United Nations Environment Program (UNEP) and 1985 was the date the expression was officially adopted with the "Environmental refugees" report submitted to UNEP (Gemenne and Cavicchioli, 2010).

The 1990s were therefore marked by the emergence of the concept, particularly when the "environmental migrants" expression started to be used, given the growing concerns related to climate change. Several publications have raised this issue and painted a bleak picture of the number of people who will be displaced, such as the IPCC's first assessment report which stated that "the most serious effects of climate change will undoubtedly be felt on human migration, because millions of people will be displaced" (IPCC, 1990).

The many natural disasters that occurred in the early 2000s contributed to putting environmental migration on top of political agendas and to bringing this issue to a wider public awareness (Gemenne and Cavicchioli, 2010).

Today, climate change has become a priority for the international community and the expression of "climate refugees" fleeing environmental disasters remains widespread. However, the magnitude of potential climate change-induced migrations is somehow cloudy for the reaction of affected populations and the effects of climate change on human settlements are inadequately comprehended (Gemenne and Cavicchioli, 2010).

The international community's late awareness and lack of action

1985: First time the "environmental refugee" term appeared in a United Nations Environment Program report.

2009: CoP15 makes it a political issue for the first time.

Since 2009: Many African countries have ratified the Kampala Convention on Assistance to Environmentally Displaced Persons within the African Continent.

2015: The Paris Agreement assigns a taskforce on the issue, the conclusions of which were transferred to the Katowice agreement.

2018: The Global Compact for Migration - Marrakesh speaks of the climate change as one of the causes of forced departures for the first time.

2- LINKS BETWEEN ENVIRONMENTAL DEGRADATION AND MIGRATION

Migration is usually the result of combined elements, rather than a consequence of a single cause. Socio-economic, security and environmental factors (UNCCD, 2011) seem to be root causes of migration.

A large-scale spatial statistical analysis by Neumann *et al.* (2015), considers that rainfall variations, aridity, drought, soil degradation as well as the availability of cultivable and pasture land are the main environmental hazards that cause migration in arid regions. Furthermore, the sixth and final report of the IPCC mentions that "there is growing evidence that climate risks associated with extreme events and climate variability act as direct drivers of migration and involuntary displacement and as indirect factors through the deterioration of climate-sensitive livelihoods (IPCC,

2022). In 2021, 2.6 million people were displaced in sub-Saharan Africa due to climate-related disasters (ISS AFRICA, 2021). It is therefore possible to conclude that environmental factors and climate change are key drivers of migration.

However, it is difficult to define the relationship between environmental and climate factors and other economic, social, demographic and political factors standing behind migration flows. As a result, it is difficult to identify the "first" cause of migration, because all the causes are strongly interrelated. The appearance of environmental factors and climate change can therefore extend the migration flow caused by political, demographic, economic and social tensions (Piguet, Pécoud and Guchteneire, 2011).

2.1- LINKS BETWEEN CLIMATE CHANGE AND MIGRATION

There is an undeniable link between migration and climate change which clearly has negative impacts on the socio-economic conditions and therefore on the individuals' adaptation ability. People's resilience decreases when livelihoods are destroyed, impacting food, water and economic security. Forecasts show that in response to this situation, more people are likely to be displaced or decide to leave or move in the near future.



Shepherd in the Banizoumbou region, Niger

The consequences of climate change, such as the variation in rainfall patterns, the increase in temperatures and the rise in sea level, add to socio-economic, political, demographic and environmental constraints to aggravate the vulnerabilities and pressures. The impacts of climate change can thus have a fundamental influence on human mobility, particularly when life is put in danger. For example, displacement is no longer an option when sea level rise leads to a loss of territory in low-lying coastal areas, making them uninhabitable.

Tropical cyclones and floods are the climate risks most often associated with migration, but in sub-Saharan Africa, given the harsh desert climate, drought and the occurrence of extreme heat episodes add to these phenomena.

Mass migration induced by climate variability in the Sahel and the Horn of Africa goes way back in time (Scheffran *et al.*, 2019). Moreover, in West Africa, recent studies have explained that temporary migration is a mechanism of climate change adaptation. Many countries of the Sahel-Sahara region are subject to climate factors that lead to migration as shown in the table below:

Table 1 - Examples of existing links between migration and climate change in some countries of the Sahel (IPCC, 2022)

Country	The link between climate and migration
Burkina Faso	Dry regions are causing an increase in temporary and permanent migration to other rural areas. Short-term rainfall deficits lead to increased long-term migration to rural areas and reduced risk of short-term migration to distant destinations (Henry <i>et al.</i> , 2004). Migrations also decrease with rainfall (Gray and Wise, 2016). High temperatures have negative effects on all migration flows, including international migration especially to neighboring countries.
Ethiopia	Rural exodus is linked to drought, especially in land-poor households. Migration of rural and urban labor is linked to the likelihood of drought, coupled with rainfall variability. Indeed, there is a strong correlation between the increase in migration and the strong irregularity of rainfall which can be explained by the following two assumptions: 1) either due to the increase in non-agricultural activities, which allow migration thanks to economic resources, 2) or due to weak agricultural production, which encourages migration (Gray and Mueller, 2012; Morrissey, 2013; Hermans-Neumann <i>et al.</i> , 2017).
Mali	Decreased rainfall is usually associated with increased climate migration, where farming communities leave their place of origin for undefined durations and destinations. There can be permanent or short-term, national or international movements (Grace <i>et al.</i> , 2018).
Niger	Economically induced migration of the households from rural areas to cities is linked to drought. It goes the same way for temporary international migration (Afifi, 2011).

2.2- LINKS BETWEEN LAND/ECOSYSTEM DEGRADATION AND MIGRATION

The physical, chemical and/or biological changes, affect the ecosystems, degrade them and make them unsuitable for maintaining adequate living conditions and a decent income for the populations, thus exacerbating the migration phenomena.

The causality between desertification and migration has only recently been recognized by the various stakeholders and empirical evidence has been provided by many bodies such as the United Nations Organization, intergovernmental institutions and institutes of political research and studies.

A study covering more than 170 countries shows that indices of desertification, water scarcity, soil salinization and deforestation are highly connected with migration (Afifi and Warner, 2008; Piguet, Pécoud and Guchteneire, 2011). Similarly, studies on



Joussours and Tabia, Beni Khadeche, Tunisia

Africa, including Egypt, Morocco, Niger, Mali and Burkina Faso, have shown that land degradation and desertification are major drivers of human mobility and the deterioration of living conditions (Source: UNU-EHS) (UNCCD, 2011). In addition, 23% of the households in the sub-Saharan Africa drylands migrated to adapt to changes in rainfed agriculture (Wiederkehr *et al.*, 2018).

The deterioration of agricultural yields threatens job opportunities, leading to the exodus of farming families who choose to go and seek their own survival. They mainly migrate to urban areas in search of sources of income. Of course, this has the consequence of dropping marginal wages and increasing international migration.

Moreover, it has been proven that the more the economy of a country is based on agricultural activity, the more it is impacted by climate disruptions. For example, the 1970 drought caused the loss of 350,000 tonnes of cereals in Mali (Damette and Gittard, 2017).

These economic losses are further highlighted by UNEP stating that a 3 to 6°C increase in temperatures in Africa by the end of the century cannot be ruled out and would reduce by 15 to 20% the agricultural economic growth. The combined economic factors generated by climate disruptions stand behind the mobility of the populations who are in constant search for better living standards.

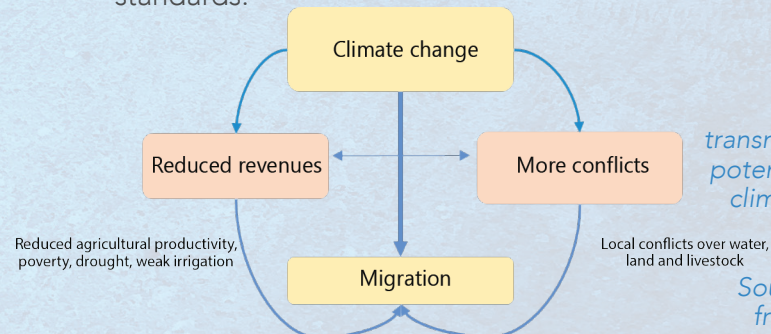


Figure 1 - Main transmission channels and potential amplifiers of the climate-migration link in Africa

Source: Diagram drawn from the Coniglio and Pesce diagram (2015)

3- ANALYSIS OF THE MIGRATION FLOWS AND THE MAIN MIGRATION TRENDS

The International Organization for Migration (IOM) indicates that migration flows linked to environmental factors could reach 25 million to 1 billion in 2050 (Ferragina and Quagliarotti, 2014). If no action is taken to reverse the trend, the number of people fleeing climate change could reach one billion by the end of the century (Watts *et al.*, 2017).

In Africa, requests for asylum to European Union countries should increase by 34% compared to the 2000-2014 period if global warming reaches 2.2°C (Missirian and Schlenker, 2017). Sub-Saharan Africa ranks second after Asia in terms of displaced people due to extreme weather each year (IPCC, 2022). Indeed, natural disasters have caused major displacements in the region, forcing more than 2.6 million people in 2018 and more than 3.4 million

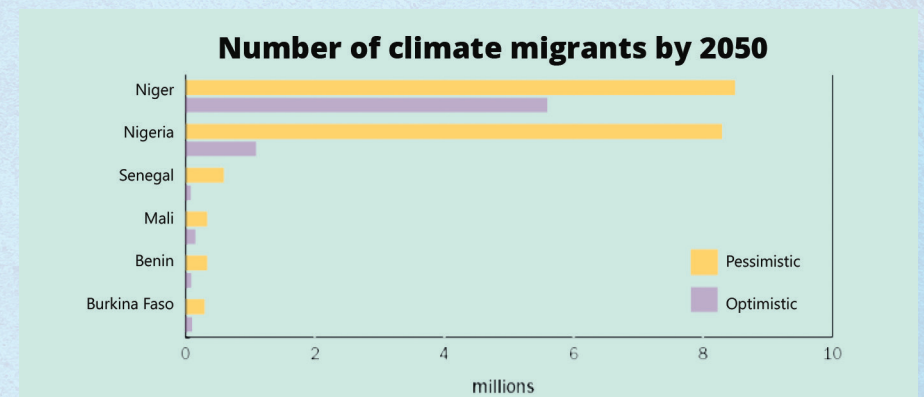
in 2019 (13.9% of the world total and one of the highest figures in the history of the region), to flee due to drought, cyclones and floods. With 798,000 migrants, West Africa is one of the world hotspots in 2018 (Mastrorillo *et al.*, 2016 ; IDMC, 2019 ; IDMC, 2020).

West Africa presents the highest levels of climate migrants with over 50 million people (IPCC, 2022), accounting for over 50% of global migration flows. In the Sahel, most observed climate and environmental migrations take place within the same country or between neighboring countries (Hoffmann *et al.*, 2020 ; Kaczan and Orgill-Meyer, 2020), with desertification in this region exacerbating forced migration flows (Wihtol de Wenden, 2010).

With a 1.7°C global warming by 2050, 17 to 40 million people could migrate within sub-Saharan Africa. This figure is likely to increase to 56-86 million with a 2.5°C warming (more than 60% in West Africa) (IPCC, 2022), due to climate impacts on water stress, crop productivity and sea level rise.



Overflows from the Niger River banks, Niamey



(World Bank, 2021)

4- IMPACTS OF THE ENVIRONMENTAL AND CLIMATE MIGRATION

4.1- IMPACTS ON THE ENVIRONMENT AND THE RESOURCES

It is important to stress that migration can have environmental impacts. Rapid urbanization or poor management of refugee camps and migrant settlements can put pressure on the water, energy and food resources of the relevant area, damage ecosystem services and lead to uncontrolled waste management likely to be coupled with health issues (Brown, 2017).

4.2- SOCIO-ECONOMIC AND POLITICAL IMPACTS

Increased migration flows can lead to economic damage. Such an impact is felt in particular during exoduses to urban centers with the workers arriving in the city creating an imbalance in the labor market and, consequently, affecting the unemployment rate of the local population (Rigaud *et al.*, 2018). There might be other problems relating to integration and anarchic constructions.

Environmental and climate migration can become a source of conflicts for displaced people are in direct competition with the local communities (Brown, 2017).

However, well-managed climate migration can create positive dynamics, especially in urban areas that benefit from agglomeration and economies of scale (Rigaud *et al.*, 2018).

CONCLUSION AND RECOMMENDATIONS

The migration of the populations linked to climate change and environmental degradation is difficult to evaluate for it is hard to accurately define an environmental refugee.

The following measures could prevent and mitigate disorders related to this phenomenon:

Elaborate development strategies aimed at helping people adapt locally.

Given the impacts of migration on the socio-economic landscape both in the areas of departure and arrival, it would be necessary for the States to have an optimized management of these movements through anticipation, long-term planning and the integration of migration issues into the growth and development plans.

Indeed, it is necessary to work on helping the communities settle in areas where such an approach is doable. Many areas vulnerable to the effects of climate change will still have to house large numbers of people. Local adaptation strategies aim to strengthen the communities' climate change adaptation capacities and protect them from situations of distress, forcing them to leave. Such measures can include investments in climate-smart infrastructure, the diversification of income-generating activities and the introduction of financial protection systems that are more sensitive to the needs of vulnerable groups.

Restore degraded soils/lands to attack the root causes of migration.

Restoration and sustainable management of land and water resources could reduce the negative effects of climate change and environmental degradation on poverty and therefore affect potential migration, increasing household income, diversifying livelihoods, creating and improving employment opportunities and reducing social inequalities. In addition, adaptation measures, economic support measures and precautionary measures must be undertaken in the regions of origin, including the improvement of land and rangeland management, the investment in income-generating activities and in flood protection and early warning systems and access to financial aid and disaster funds.

Stronger commitment to reducing global GHG emissions to meet the Paris Agreement temperature-limiting goals.

This should include raising the awareness of decision-makers and building their capacities in terms of climate monitoring protocols in order to enable certain African countries to access climate finance.

Prepare the urban and peri-urban areas to face migration.

Having the areas ready to receive the migrants improves the housing and transport infrastructure, social services and job opportunities. More flexible social protection services could be developed and climate migrants could be integrated into local planning and decision-making.

Update the legal frameworks on migration and boost political and institutional dialogue with the migrants.

This implies the establishment of an adequate and efficient monitoring and management system of border areas and the use of the expertise of migrants for development purposes.

Promote the status of environmental migrants.

The status of environmental or ecological migrants must be promoted so that they can enjoy the same protection rights as refugees forced to leave their land for non-environmental reasons.

Finally, a well-organized migration to more viable areas, offering less risks and more opportunities, could be a strategy to think of, when the limits of local adaptation are reached. An appropriate framework for migration must be established based on direct incentives, such as qualifying training and programs to create jobs and preserve the resilience of the travelling communities and the receiving populations.

GLOSSARY

Adaptation: For human systems, the process of adjusting to current or expected climate and its consequences, so as to mitigate its harmful effects and exploit its beneficial impacts. For natural systems, the process of adjusting the current climate and its consequences ; human action can facilitate adaptation to the expected climate and its consequences (IPCC, 2018).

Climate change: “Changes resulting directly or indirectly from the human activity that impairs the composition of the global atmosphere and that add to natural climate variability observed over comparable time periods” (United Nations Framework Convention on Climate Change, 1992, article 1).

Climate migration: Movement of a person or a group of persons who, mainly for reasons of sudden or gradual change in the environment due to climate change, are forced to, temporarily or permanently, leave their usual place of residence or choose to do so, to go somewhere else within the territory of a State or across an international border (IOM, 2019). Climate migration is a subcategory of environmental migration and defines a singular type of environmental migration, where the modification of the environment is due to climate change.

Degradation of an ecosystem : Level of a negative impact on the ecosystems which results in the loss of biodiversity and a simplification or disruption of their composition, structure and functioning and which generally leads to reduced ecosystem services (Gann *et al.*, 2019).

Desertification¹: Desertification is the degradation of land in arid areas. Desertification results from processes that may or may not involve living beings. Biological processes include changes in vegetation cover and composition, including overgrazing and undergrazing, deforestation, loss of biodiversity and degradation of soil structures. Desertification can also occur through physical processes including soil erosion by water and wind and the degradation of the soil structure or through chemical processes such as salinization and nutrient depletion. Desertification can be directly caused by human mismanagement as well as the climate.


Disaster²: Serious breakdown in the functioning of a community or society involving significant human, material, economic or environmental impacts and losses that the affected community or society cannot overcome with its own resources (The terminology of the United Nations International Strategy for Disaster Reduction, UNISDR).

Environmental degradation³: Reduced capacity of the environment to meet social and ecological goals and needs. Environmental degradation can modify the occurrence and intensity of natural hazards and increase the vulnerability of the communities. There are several types of degradation caused by man: land misuse, soil erosion and destruction, desertification, forest fires, loss of biological diversity, deforestation, destruction of mangroves, soil, water and air pollution, climate change, sea level rise and ozone layer depletion (SIPC, 2009).

¹ Rapport spécial du GIEC sur le changement climatique et les terres émergées | Quels impacts pour l’Afrique ? https://cdkn.org/sites/default/files/2021-07/IPCC%20Land_Africa_French_WEB_7Apr2020.pdf

² https://www.unisdr.org/files/7817_UNISDRTerminologyFrench.pdf

³ https://www.unisdr.org/files/7817_UNISDRTerminologyFrench.pdf



Environmental migration: Movement of a person or a group of persons who, mainly for reasons of sudden or gradual changes in the environment which negatively affect their life or living conditions, are forced to, temporarily or permanently, leave their usual place of residence or choose to do so, and who move inside or outside their country of origin or habitual residence (IOM, 2019).

Internal migration⁴: Movement of persons within a State for the purpose of establishing a temporary or permanent new residence

International/external migration⁵: “Anyone who changes their country of habitual residence” (DESA, 1998).

Migration: Any movement of persons leaving their place of habitual residence, either within the same country or across an international border (IOM, key-migration-terms).

Migration flow (international)⁶: Number of international migrants arriving in a country (immigrants) or number of international migrants leaving a country (emigrants) during a specified period.

Resilience⁷: The ability of a system, community or society exposed to hazards to timely and effectively resist, absorb, accommodate, adapt, transform and recover from the effects of a hazard, through the conservation and restoration of its main and basic structures and functions thanks to risk management (United Nations focal point for disaster risk reduction, UNDRR).

Risk: The combination of the probability of an event and its negative consequences (Terminology of the United Nations International Strategy for Disaster Reduction, UNISDR).

Vulnerability: In the context of migration, low capacity to avoid, resist, cope with or recover from harm, due to the particular interaction of the characteristics and conditions of the individual, household, community and structures (IOM, key-migration-terms).

⁴ <https://www.iom.int/fr/termes-cles-de-la-migration>

⁵ https://unstats.un.org/unsd/publication/SeriesM/SeriesM_58rev1E.pdf

⁶ <https://www.iom.int/fr/termes-cles-de-la-migration>

⁷ <https://www.undrr.org/terminology/resilience>

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