An African Vision on the Impact of Sustainable Development on Environmental Migration

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Abstract
The new universal concept of Sustainable Development adopted in 2016 by the United Nations Agenda for 2030 is broad: it is based on 17 objectives, 69 targets and 232 indicators (retained to date) by the experts[1]. This paper aims to discuss our findings on three levels: (i) a focus on two Sustainable Development Goals (SDGs): SDG10 on Reduction of Inequalities & SDG 13 on Climate Change and its impact. These two goals have also many links to other SDGs, which also needs more discussions; (ii) implementation of these goals for African countries and finally (iii) predictions concerning migrations flows within and from Africa due to global climate change.

This paper is drawn on field's research conducted mainly in North Africa and desk researches on climate change and recent data collected through UN agencies. Some preliminary results conclude with a high probability of future flows of environmental migrants within Africa but also towards other surrounding regions, particularly from south Mediterranean countries to Europe.

Introduction

Impact of Climate Change on International Migrations is a very hot issue. There is an overwhelming amount of literature on these linkages,

[1] Cf. https://unstats.un.org/sdgs/indicators/indicators-list/ accessed on 31st August 2018.

produced either separately on technical grounds or mixed productions with many outcomes and scenarios. However, there is no clear-cut evidence that climate change "alone" is a driving force for migration, though a recent study forecasts that a slight change, high or low, may induced migrations[2]. Such probability lies on many uncertainties, which need further insights. Let´s have a look on both themes.

On International Migrations as a means to reduced inequalities (Goal10), United Nations Department for Economic and Social Affairs (UNDESA) prospects seem to be quite acceptable, though not all countries provide update statistics on migration flows. Many other sources also provide updated knowledge base on Remittances (World Bank, 2017) and on International Mobility of students (OCDE, UNESCO). UN High Commission for Refugees (UNHCR) produced regularly good information on refugees and Internal Displaced Persons. Breakdown of this mass information by region give an acceptable outlook on Migrations and Refugees. In regard to SDGs, two pertinent targets N° 7 for Goal 10 is under construction and classified in Tier III[3] (UNSTAT). So far only target 10c on the reduction of Cost of Remittances has been classified in Tier II[4], according to World Bank experts.

On Climate Change, there is a rich literature on environmental technical grounds all around the world since the UN Convention Rio (1992). The IPPC[5] regularly provides governments sound reports on the world climate change trends to enable policy makers engaging discussions on evidence base. Many regional Banks also develop

[2] Missirian, A. & Schlenker, W. (2017). Asylum applications respond to temperature fluctuations in *Science* 22 Dec 2017: Vol. 358, Issue 6370, pp. 1610-1614 DOI: 10.1126/science.aao0432

[3] Tier 3. No internationally established methodology or standards are yet available for the indicator, but methodology/standards are being (or will be) developed or tested.

[4] Tier 2: Indicator is conceptually clear, has an internationally established methodology and standards are available, but data are not regularly produced by countries.

[5] IPCC means Intergovernmental Panel on Climate Change at http://www.ipcc.ch/

programs, strategies and actions in each region, for example, Asian Development Bank (ADB) and African Development Bank (AfDB). In regards to SDGs, Goal 13 is designed solely "*take urgent action to combat climate change and its impacts*" with four targets. Up to now, UN experts meeting have classified all indicators in tier III, which means that standards are not yet available.

For instance, the EU published a report on migration in response to environmental change (EU, 2015), collating several research papers. Pr. Zetter concludes that "*Extreme or sudden environmental events and more long-term changes linked to climate change represent what is possibly the most significant future global policy challenge. In the context of increasing climate variability it is clear that adequate adaptation strategies and mechanisms must be developed*.

Burrows & Kinney (2016) try to understand the link between environment migration flows and conflict. They argue that *"future research should focus not only on the climate-migration-conflict pathway but also work to understand the other pathways by which climate variability and change might exacerbate conflict".*

UNDP Reports (2017) on "Climate Change, Migration and Displacement" starts by recognizing that "*There is a lack of clarity as to the direct influence of climate change on human mobility".* On the nexus of Climate Change induced International Migration, discussions are still opened and scholars are involved in very hot debates but there is no consensus on when (time), how and where (scale) such migration flows will happen.

The most widely repeated prediction (Myers, 2001) is that there will be 200 million of people displaced by 2050[6]. Repetition does not mean evidence-base. Some scholars do focus on particular some regions

[6] Myers (2002) forecast is based on different estimates of the effects of climate change in terms of poverty, food scarcity, sea level rise, floods and droughts.

supposed to be most vulnerable, such as Africa on the whole or the Middle East & North Africa (MENA) region.

Moreover, scholars do not have a clear-cut appraisal to qualify people's move due to Climate Change. Are they "migrants" or "refugees"? Each concept is based on UN definitions, not always transposed in national laws. New theories are also devised to capture forced migration, for example "crisis migration"[7].

International Organization for Migrations (IOM) suggests the concept of "environmental migrants", best fits to qualify people moving due to climate change, whether they cross borders or not, to seek legal entitlements or humanitarian assistance[8]. The main question therefore is how far international bodies are responsible of such environmental migration flows? The global concern is thereby important not only to respond to "emergencies", but also to take actions against deep rooted causes, underlying environmental migrations. Our rationale is founded on global matrix of indicators related to all SDGs Goals; designed as follows.

[7] "Crisis *migration needs to be understood in terms of 'tipping points', which are triggered not just by events but also by underlying structural processes.".*

[8] The subject is understudied, fragmented and in need of robust evidence. Cf. Review of literature, on Migration and Climate Change – Oscar Gomez (2013). *Initial references to the contemporary debate on the effects of the changing environment including on human mobility are found in the seventies and eighties in reports such as Brown (1976) and El-Hinnawi (1985).*

Table N° 1. Matrix capturing links between Migrations and Climate Change

GOALS	*RATIONALES*
No Poverty	*Poverty & Migration*
Zero Hunger	*Migration from rural to urban areas*
Good Health & Well -Being	*Medical brain drain altered health system*
Quality Education	*Human Capital - International mobility of Students*
Gender Equality	*Human Trafficking - Domestic Work – Gender Migration*
Clean Water & Sanitation	*Migrants in Slums, rural areas*
Afffordable & Clean Energy	*Water stress – forced migration*
Decents Work & Economic Growth	*High youth unemployment drivers of migration*
Industry, Innovation & Infrastructure	*Return Migrant , Diaspora Investment*
Reduced inequalities	*Low income and poverty drivers/ Cost of remittances/ FDI*
Sustainables Cites & Communities	*Most Cities count large migrant/immigrant populations.*
Reduced inequalities	*Cost of remittances*
Responsible Consumption & Production	*Consumption patterns of migrants*
Climate Action	*Forced displacement within countries- Environmental migrant*
Life Below Water	*Boat people – death of migrants*
Life on Land	*Forced displacement – Desertification*
Peace, Justice & Strong Institutions	*Xenophobic and racist violence are serious threats*
Partnerships for the Goals	*Global Compact 2018*

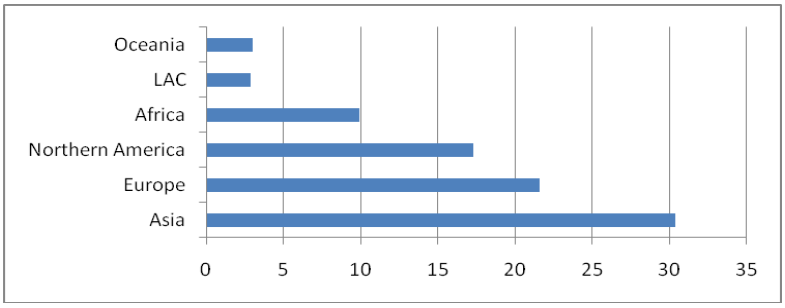
Source: This matrix first developed within the GMP Networks (2016)[9] *– extended by the author.*

The case of Africa might be a good illustration of climate change induced migration, either as a multiplier effect or as a global concern. Hence, this paper provides two dimensions of environmental migrations: first on historical backgrounds and second on prospective trends. Just a glance on Migration world´s figures.

1. World Migration by Region

"*The number of international migrants worldwide has continued to grow over the past seventeen years, reaching 258 million in 2017, up from 248 million in 2015, 220 million in 2010, 191 million in 2005 and 173 million in 2000. Between 2000 and 2005, the international migrant stock grew by an average of 2 per cent per year" UNDESA (2017)*

Table 2. Additional Migrants from 2000 to 2017 by regions of the world (%)



Source: UNDESA Data, 2017

[9] The revised version 3.2 of our "SDGs and Migration" matrix, substantially expanded with research by *Gabriela Neves* de Lima and inputs from various colleagues and processes. It now identifies 43 SDG targets plus three actionable Goal statements directly concerning migrants, refugees, migration and migration compelling conditions" GMPA= Global Migration Policy Associates at https://www.globalmigrationpolicy.org/

2. Historical backgrounds of African migrations

Our region is already with natural hazards: drought, desertification, and earthquake (north). The surrounding islands are also hit by cyclones, floods and volcanic eruptions; its natural resources have been looted for many years, its population has experienced slavery, then Apartheid and now racial & religious discriminations. Climate Change brings an additional challenge whether in terms of "*processes*" or "*events*".

According to UNDESA (2017), migrants in Africa count only for 10% (25 millions) of world migration (Fig. 1), nearly constant since 1990, i.e. the same percentage of world's migrants. We can note a slight fall during the first decade of this millennium. Migrants in Africa have been quite stable at 2% of its population.

Figure 1.
World migration by regions of the world (%)

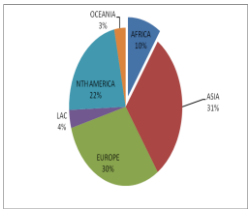
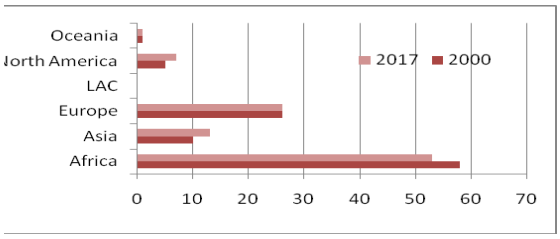


Figure 2.
Change in African migrants by regions from 2000 & 2017 (%)



Source: based on UNDESA Data, 2017– UN

African migrants stand around 36 million in the world, 53% of which migrate within Africa (5% less in 2000), 26% in Europe (same weight from 2000 to 2017) and 14% in Asia, with a gain of 3% from 2000 up to now. In Northern America also, there is a gain of 2% during this period. It seems that African migrants are choosing other routes than Europe.

2.1. Why History matters?

Just some points to recall our history – these issues are well documented (Musette, 2014), we just recall five evidence-based facts.

- Africa has been almost totally colonized for long periods of its history. Its resources have been the subject of "looting" - which has made the wealth and contribute to the development of colonizing European countries, today economically dominant.
- Its population has experienced slavery. Then, even freed, they were transformed into migrants. It experienced racial discrimination with an apartheid system. Following the process of decolonization, multiple political conflicts arose around the "boundaries", roughly delimited;
- Africa "appears" to be as the poorest continent, developing at the margins of the process of globalization, with little integration in the world economy, marginalized by Foreign Direct Investment.
- Evolution and demographic prospects of Africa grow faster than the rest of the world's regions, according to UNDESA prospects.
- Africa is not homogeneous; however, out-of-continent migration does not affect all African countries.

2.2. Recent facts revealed on climate change affecting Africa.

To set the scene between climate change and migration in Africa, many reports have been produced to point out the challenges and obstacles for countries to deal with extreme events.

A IPCC Report (1998) set first the scene for Africa's Climate Change on human settlement:

"The main challenges likely to face African populations will emanate from the effects of extreme events such as tropical storms, floods, landslides, wind, cold waves, droughts, and abnormal sea-level rises

that are expected as a result of climate change. These events are likely to exacerbate management problems relating to pollution, sanitation, waste disposal, water supply, public health, infrastructure, and technologies of production (IPCC, 1996). (…) Adaptation strategies lie mainly in relocating populations, efficient energy supply and use, introduction of adaptation technologies, and improved management systems. Because most of these strategies have high cost implications, existing economic constraints of African countries may present major obstacles".

The IPCC Climate & Security Threat for Africa (IPCC, 2007) Report, stated:

'Africa is one of the most vulnerable continents to climate change and climate variability, a situation aggravated by the interaction of "multiple stresses", occurring at various levels, and low adaptive capacity' (…) The expected manifestations of climate change will have a range of consequences for social and economic well-being in many parts of Africa"

A year after, another report (Brown, 2008) suggests that climate change is a still a challenge for Africa, ten years after the first IPCC report.

" Nonetheless, according to the Stern report, such a temperature rise would still lead to a 20 to 30 per cent decrease in water availability in some vulnerable regions such as Southern Africa and the Mediterranean countries. It would also result in declining crop yields in tropical regions. In Africa crop yields could be cut by between 5 to 10 per cent. Meanwhile up to 10 million more people would be affected by coastal flooding each year".

The African Development Bank Strategic Report on Climate Change (2001-2015) stress on the fact that Africa contributes relatively low to the emission of gas; and rain-fed agriculture is the backbones of its economy, hence *"frequent, severe droughts and flooding are serious enough to jeopardize development efforts and to undermine the*

progress made to date ". But the migration link is omitted in this report. However, some excerpts remind us the main challenges of Climate Change in Africa.

"Climate change is depleting Africa's renewable natural land, water, and forest resources. The impact of climate change is further aggravated by fast population growth in Africa, resulting in an increasing demand on natural resources. Growing water scarcity, particularly on a continent where many water bodies cross national boundaries, raises the spectrum of further conflict. Where soil fertility is being diminished, forests are being cleared to expand agriculture; where agriculture is less productive, the attraction of urban centers increases"

In its Climate Change Action Plan for 2020, WBG report is organized along four top-level priorities: (i) support transformational policies and institutions, (ii) leverage resources, (iii) scale up climate action, and (iv) align internal processes and work with others. The underlying impact of climate change on migration flows is not examined.

2.3. Climate Change and Migration Crisis in MENA countries

Assessment of impacts, adaptation and vulnerability to Climate Change has long been only on technical and economic grounds. Fostering on the understanding of agriculture-climate interactions and the implications for water availability, a report on North Africa (Abou-Hadid (2003) does not even mention "environmental migration".

However, the links between climate change and migration have not been studied in detail and the data for the Middle East – North Africa (MENA) zone remained limited until the World Bank and the French Development Agency carried out a survey of five countries in the region in 2010.

Just after the Arab Springs in Tunisia, the report is published (2014) on "Climate Change, Extreme Weather Events and Migration: Review of the Literature for Five Arab Countries (Algeria, Egypt, Morocco, Syria, and Yemen". We know also that migration decision is not solely influenced by Climate Change, but there is a consensus that "*on the fact that factors related to climate change do contribute to migration".*

Overall the survey concludes that "*households in these areas do perceive important changes in the climate, for example with droughts becoming more frequent. While many households declare being affected by extreme weather events, with resulting losses in income, crops, livestock, or fish catchment, this is especially the case of the poor who appear to suffer the most from extreme weather events"*

We know quite well what happens in Libya, Egypt, Syria and Yemen. There is no need to recall theses uprisings and their impact of migration flows and refugee´s crisis. The debate in Europe on Refugees Crisis has prevented a clear knowledge-based on causes (by the way, solutions) of migration flows. The debate is still divided between security or humanitarian approaches, between open or close borders and "forced" or "voluntary" migration.

3. Predictions concerning migrations flows within and from Africa due to global climate change.

The IPCC states that "Climate variability will result in some movement of stressed people but there is *low confidence* in ability to assign direct causality to climatic impacts or to the numbers of people affected" (IPCC, 2012), which summarizes the challenge for researchers in the area.

"Changes in sea level and climate in Africa might be expected by the year 2050. Hernes et al. (1995) project a sea-level rise of about 25 cm. There will be sub regional and local differences around the coast of

Africa in this average sea-level rise-depending on ocean currents, atmospheric pressure, and natural land movements - but 25 cm by 2050 is a generally accepted figure (Joubert and Tyson, 1996). For Africa south of the Equator, simulated changes in mean sea-level pressure produced by mixed-layer and fully coupled GCMs are small, smaller than present-day simulation errors calculated for both types of models (Joubert and Tyson, 1996). Observed sea-level pressure anomalies of the same magnitude as simulated changes are known to accompany major large-scale circulation adjustments associated with extended wet and dry spells over the subcontinent".

Many approaches have been developed up to now. Piquet (2010) for example, builds a typology of six approaches, but none of them include forecasting methods to measure the impact of climate change on migration. As suggested by Gomez (2003)

"*The most quoted estimate is of 200 million people displaced by 2050, a number proposed by Myers (2002), based on different estimates of the effects of climate change in terms of poverty, food scarcity, sea level rise, floods and droughts. This figure was used also by Stern (2007) in his famous review, and it is cited by the IOM, within a range that goes from 25 million to 1 billion people (Baird and Christian Aid, 2007, Brown, 2008). Besides, the time span of 50 years in order to produce scenarios has also been adopted by reports such as the Foresight Program (2011). This time frame is chosen since many population growth scenarios put the peak of global population around 2060 (New et al., 2011*)".

3.1. The future of African migrations

African migrations, whatever be the driving factor, past trends have been rather stable in rate, around 10% the last 50 years. As we have also noted, migration flows are mostly within African countries, though statistical systems are imperfect. Our main hypothesis is as follows: the

likelihood of large-scale movements of people from Africa towards other regions is rather low.

Hence, we must discard apocalyptic predictions which is already given rise to a climate of fear, namely in Europe. Mass migration from Africa is just statements without any evidence. Even intra-African migration flows are slowing.

Although not all related to climate change, extreme weather events in 2010 affected over 320 million people – the highest number this century – according to the World Disasters Report (2013).

3.2. Predictions in MENA countries

This region is particularly explored by many scholars. Results provided by the MENARA project (2017) assert that:

"*The MENA region will be one of those most severely affected by ongoing climate changes. These will be caused by increased average temperatures, less and more erratic precipitation, changing patterns of rainfall, continuing sea-level rise and changes in water supply. All this will happen in a region which already suffers from aridity, recurrent drought and water scarcity".*

Here also, migration flows are not solely impacted by climate change. A World Bank research on climate induced migration suggests that

"The impact of weather shocks and deteriorating conditions on migration is positive, leading to higher temporary and permanent migration. In the areas most affected by climate change, the analysis suggests that climate factors may account for between one tenth and one fifth of the overall level of migration observed today, but this is likely to increase as climatic conditions continue to deteriorate" (Wondon, 2014).

World Bank analysts also forecast high migration flows from Africa in Groundswell Report (2018) but such probabilities hide many uncertainties. The Gallup Survey (2017) on potential Migrant flows, run from 2013 to 2016 in 156 countries, suggests that 700 million adults, *i.e.* twice the actual stock of persons hope to move from one country to another. Subsaharan Africa's potential migrant is on the top, with an average of 31%, compared to a mean of 14% worldwide whereas MENA region stands forth with 22% and Europe (Outside EU countries) second with 27% and Latin America is third with 23% of people desired to migrate.

On the contrary, the Boston study decoding Global Talent (2018) observes that there is a decline in the desire to move from 2014 to 2018: "*The net result is that overall willingness to emigrate has dipped. Fifty-seven percent of all respondents now say they would move to another country for work. While that is still a sizable number, it is 7 percentage points lower than when we asked the same question in 2014*. Yet, 57% is just an average, from Africa; the average is over 70%. Hence, migration flows are not driven solely by climate change.

Past trends in migration from North Africa show that migration is lowering on the whole since this millennium. New waves of migrant from Africa are restricted to family. No prediction, at this level, can be clearly ascertained, though the desire to migrate is a worldwide phenomenon which is driven by multiple factors, not solely climate change.

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