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Netherlands Institute of International Relations

Clingendael Alert

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MAY 2018

New studies by international organisations feature migration as a consequence of land, food and water scarcity

In the first months of 2018 three studies recently published by the World Bank (WB), the Food and Agricultural Organisation (FAO) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) prominently addressed the link between degradation of land, water stress and higher food prices with migration. Whereas academic debate on the contribution of climate change and other environmental stresses to migration is ongoing[1], international organisations published comprehensive reports underlining the need to act now. The FAO and WB shied away from the more politically sensitive issue of irregular migration from Africa to Europe. Neither do the reports quantify to what extent interventions in the sphere of land, food and water could play a role in preventing migration and influence decisions to return.

In the first months of 2018 three studies published prominently have addressed the link between degradation of land, water stress and higher food prices with migration. The World Bank (WB), the Food and Agricultural Organisation (FAO) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) all point to the connection between natural resource management and individuals' decisions to migrate.

Only the IPBES dares to make the link with instability and conflict and the heated and very politicised debate on migration to various Western countries. However, the fact that migration is explicitly addressed by all three reflects the attention some of the most authoritative international institutions devote to the need to address this topic that currently features so high on the international political agenda and is a key concern for the EU and other Western nations. They understand the phenomenon to be clearly linked to natural resource management, a topic which may also offer promising avenues for reducing migration and alleviating the risk of conflict. This Clingendael alert reviews these studies, points to their commonalities and differences, the methods used and policy recommendations made.

1 See for an overview: Van Schaik, L. and Bakker, T. *Climate-migration-security: Policy Brief Making the most of a contested relationship*, 2017.

The World Bank: Groundswell, Preparing for Internal Climate Migration

This report assesses the potential impact of climate change on internal migration and displacement. It argues that, by 2050, 143 million people will be considered climate migrants if no preventive policies are implemented. Due to lower freshwater availability, diminishing crop yield productivity and constantly rising sea levels coupled with storm surges, internal pressure on already vulnerable countries will have major effects on climate-dependent economic sectors, urban infrastructure and social support systems. On the ground, it can be expected that a large proportion of the rural population will migrate to urban areas, exceeding the cities' ability to absorb such an influx and consequently increasing instability in those often overburdened areas. Indeed, the urban population is projected to quadruple from 100 million in 2010 to 350 million in 2050 under the most optimistic predictions and to exceed 450 million under the most pessimistic predictions.

The report looks at the potential outcome in three regions collectively representing 55% of the population in developing countries that are likely to be at the core of such population shifts: Sub-Saharan Africa, South Asia and Latin America. The analysis is based on a model which uses "demographic, socioeconomic and climate impact data at a 14 square kilometre grid cell level" to predict the likely displacement of the population within countries. In response to the uneasiness caused by looking at migration over the next 30 years, this analysis considers three potential climate and development scenarios: (1) a business-as-usual scenario in which greenhouse gas emissions and unequal development are high, which would lead to 2.8% of the population migrating based on the trends shown by the current available data; (2) a more comprehensive development in which greenhouse gas emissions stay high but development is more balanced towards inequality, urbanisation rates and population growth; (3) a more climate-centric approach in which greenhouse gas emissions are reduced while development is still unequal as in scenario 1. The timeframe of this study extends those scenarios to 2050 by concluding that a constant increase in migrants will be seen in the coming decades.

The scenarios used involve policies and actions that can slow the onset of climate change impacts, consequently reducing the number of people forced to migrate to an "optimistic level" of 80%. To reach this target, the report proposes that countries

- cut their greenhouse gas emissions as soon as possible,
- integrate the inevitability of climate migration into sensible development planning and targeted investments,
- invest in research to enhance the understanding of the dynamics of internal migration,
- shape policies to create a more diversified and climate-resilient economy,
- acknowledge climate migration in national plans and policies and
- target pockets of poverty to diminish the impact of climate change.

The study is based on a model which looks into climatic, livelihood, demographic, migration and development patterns in three regions. This makes it possible to build robust projections of internal climate migration over large areas. Although quite exhaustive in its chosen areas of study, this report does not delve too much into the politically more sensitive issue of external migration or the potential spill-over effect of migration to instability. These issues are more difficult to forecast by modelling, but the chosen focus also avoids political controversy around the WB, which allegedly has a donor-driven agenda. It also means that this study is politically less relevant to these donors, since it does not address concerns over new waves of migrants coming to their countries. In terms of policies, the reduction of greenhouse gas emissions features most prominently, whereas emphasising that this is still a possibility may slow down the need for other action to address migration resulting from a rapidly warming world.

With its programmes, the WB can help target better governance of natural resources, including land restoration, irrigation and

water management as well as increased and climate-sensitive food production. It can make sure that when implementing such projects due account is taken of tensions between various groups in society, in other words making its climate adaptation interventions more conflict-sensitive and indeed instrumental to the agenda of its main financers. In that way it can make an immense contribution to concerns over migration, whether internal within countries or to the countries that finance the WB.

FAO: "Water stress and human migration: a global, georeferenced review of empirical research

This report is an assessment of the linkage between water-stressed areas and migration. The Food and Agricultural Organisation (FAO) of the UN, with the empirical backing of 184 peer-reviewed research papers, assumes a correlation between the two phenomena. While acknowledging that migration is at its core part of a multi-faceted situation which includes high temperature, lack of economic opportunities, unemployment and endemic violence, it stresses that the literature does come close to a consensus that water stress can encourage migration. Water insecurity, especially when coupled with a high level of temperature, causing water evaporation, undermines the livelihood systems of those affected and induces migration.

Indeed, migration is responsive to some patterns of sudden change which alter the future prospects of an individual. Policies addressing these challenges should include:

- Public investment in rural agriculture,
- Investment in livelihood diversification,
- Investment in social welfare to ensure the affected population can cope and adapt to internal and external migration,
- Adaptation to and incentivisation of the use of sustainable agricultural technologies,
- Encouraging policies to avoid population displacement that can lead to the spread of adverse effects.

It is striking that policies to increase the amount of available water or manage it better, for instance by means of desalinisation, irrigation or better waste water treatment, are not mentioned.

The report acknowledges the existence of the "environmental migrant" as a new reality, emphasising heat and water stress areas as its cause. It stops short of explaining how other communities seem less inclined to move from their home even under duress. The report also fails to explain how people in wet areas, who suffer from flooding and massive rainfall, are also prone to migrate. In the same line of thought, this paper makes little differentiation between internal and external migration. On the one hand, such a differentiation could be helpful, since policies have to consider the different preferences and perspectives of states involved in transnational migration. On the other hand, internal migration can also be disruptive to national actors and therefore be the justified focus of policies.

IPBES: Thematic assessment of land degradation and restoration

This report was approved at the 6th session of the IPBES Plenary, by the 129 State Members, in Medellín, Colombia. IPBES has been labelled as the IPCC for biodiversity (IPCC is the review body for climate science). This specific review targets the issue of land degradation, a topic rising rapidly on the international agenda. IPBES compiled the multidisciplinary knowledge base of more than 3,000 scientific, government, indigenous and local knowledge sources published in the last three years. The report was adopted by representatives of governments after a process of extensive peer-review consisting of more than 7,300 comments from over 200 external reviewers.

The IPBES report concludes that the well-being of 3.2 billion people around the world is affected by land degradation, which is a systemic phenomenon that threatens food and water security, now and in the future. Climate change accelerates this process.

Land degradation is explicitly acknowledged as a major cause of insecurity.

Exponential population growth, the expansion of agricultural activities and crop production, unsustainable agricultural and forestry practices, urban expansion and the extractive industry all play a role in land degradation. Often, short-term gains are favoured over long-term and more sustainable gains. Land degradation exacerbates soil acidification and salinisation, reduces crop yield, water quantity and quality, precipitates desertification and intensifies the release of methane and carbon emissions, thereby contributing to climate change.

Since land degradation negatively affects the livelihood of the population concerned, people living in these areas might opt to migrate out of the degraded areas. Migration in turn might exacerbate land degradation by increasing the pressure on the area they move to, creating a vicious circle that will worsen the phenomenon of degradation as well as inciting conflicts. IPBES believes land degradation is likely to force 50 to 700 million people to migrate by 2050. The problem is that this figure is probably based on research by Norman Meyer[2], which was heavily criticised afterwards and the range is quite wide.

The report recommends timely action in order to avoid, reduce and reverse degradation through an effective monitoring strategy and verification system, adequate data collection processes and an increase in public awareness.

Taken as a whole, those actions could mitigate adverse security effects. The report states: "Land degradation acts in concert with other socioeconomic stressors to result in increased local or regional violent conflict and out-migration from severely degraded areas."[3] Consequently, more land restoration projects would reduce the effect on human security and thereby decrease risks of conflict and irregular migration.

The report suggests adopting existing tools, practices and techniques and bolstering positive policies that promote sustainable exploitation of land and land-based resources. The conclusion is that successful practices of land restoration/preservation currently exist and can be efficiently implemented to halt or reverse land degradation. Nevertheless, little is said about which practices can have the greatest impact on reducing migration and conflict risk.

Commonalities and differences

The three studies all point to the opportunity of using interventions in the sphere of natural resources to reduce the scope of migration flows. They do not compare such interventions with repressive security interventions or a more generic focus on good governance and economic development, but rather point to the many co-benefits of combining environmental, social and economic agendas, a way of thinking which is embraced by the Sustainable Development Goals. Whereas the universality of such a holistic approach is advocated in the 2030 Agenda for Sustainable Development, these reports tend to focus on migration as a problem of developing countries. They avoid stating too explicitly that it may be in the interest of donor countries to support interventions to bolster the quality and quantity of land, water and food security, since this may avoid new streams of migrants fleeing because they can no longer live from and on the land where they were born.

In the reports little is said about what could motivate migrants to go back. The modelling and statistical analysis does not tell us much

2 See for an overview on the debate: Van Schaik, L. and Bakker, T. *Climate-migration-security: Policy Brief Making the most of a contested relationship*, 2017. The full IPBES review is not yet available and from the Summary for Policy Makers it is not clear on which figures this estimate is based.

3 IPBES, *Summary for policymakers of the thematic assessment report on land degradation and restoration of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, Bonn, 2018, p. 18.

Organisation	World Bank	FAO	IPBES
Focus	Water & Migration	Water stress & human migration	Land degradation
Main conclusions on migration	By 2050, if no preventive policies are implemented, 143 million people will be considered climate migrants.	Water stress encourages migration.	Land degradation, coupled with climate change, is likely to force 50 to 700 million people to migrate by 2050.
Main conclusions on stability/ conflicts	Internal migration means that a massive influx of urban migration is expected. This could lead to an overburdening of urban capabilities as well as an increase in instability.	Migration, when poorly managed, can lead to unbearable pressure on some areas in terms of strained local resources, diminishing water availability and raised tensions with the host community.	Migration due to land degradation might create pressure on the area migrants move to, creating a vicious circle that will incite conflicts with the local population.
Methodology	Literature review & modelling	Literature review of empirical research	Literature review
Recommended actions	Drastic reduction of greenhouse gas emissions.	The path forward should be public investment in rural agriculture, livelihood diversification, social welfare, agricultural technologies to ensure the affected population can cope and adapt to internal and external migration and avoiding population displacement that may cause adverse effects to spread.	Timely action to avoid, reduce and reverse degradation through effective monitoring strategy, verification systems, adequate data collection and public awareness could mitigate the effect of land degradation.

about what would make them return. In this respect other research methods might be advisable, notably interviews with migrants or a larger-scale survey. To convince donors, more (quantitative) information on the impact of natural resource investments on reducing migration and conflict risk might be useful. These studies can be considered a call for action, but a close reading illustrates that extensive policy-relevant information on the relationship between natural resources on the one hand and migration and security on the other hand is still not yet available. More research and analysis is needed to sustain the call for action, look into the full potential of natural resources interventions in comparison to other policy options and scale up funding.

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