

A demographic perspective on environmental and climate change and population displacement¹

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Abstract

The number of forcibly displaced persons in the world surpassed 80 million in mid-2020. A significant number of refugees are environmental and climate-change driven who have been forced to leave their home, or their country, due to the effects of severe climate events, being forced to rebuild their lives in other places, despite the conditions to which they are subjected. The impact of climate change is divided into two distinct drivers of migration, *climate processes* and *climate events*. Non-climate drivers are also important. The impacts differ by the speed of change and the number of people it will affect. In brief, there is a complex relationship between environmental change and displacement, and the influence of non-climate drivers including demographic variables should not be underestimated. Thus, the climate impacts of forced movements should be analysed from a demographic perspective in order to mitigate the risks for the communities and populations at risks and with vulnerabilities. Demographers can serve in several areas including conceptual specification, analysis and measurement, data collection, predictions and modelling, policy and program design, as well as training and research for the understanding of climate impacts and risks of population displacement. These areas are briefly discussed in this paper.

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Introduction: Displaced populations and refugees

The number of forcibly displaced persons in the world surpassed 80 million in mid-2020. This majority (45.7 million) were internally displaced people (IDPs), followed by almost 30 million refugees and others forcibly displaced outside their country, and 4.2 million asylum seekers. Around 85 percent of forced migrants live in low- and middle-income countries. More than two thirds of all refugees under UNHCR's mandate and Venezuelans displaced abroad came from just five countries, Syria, Venezuela, Afghanistan, South Sudan and Myanmar, while five countries of Turkey, Colombia, Pakistan, Uganda and Germany hosted 39 percent of refugees as of mid-2020 (UNHCR 2020).

The situation of refugees varies according to their history of displacement, type of entry into host countries as well as their settlement patterns (Hugo *et al.* 2018). Around sixty percent of refugees live in urban areas, and the remainder live in camp-like settings. While some have officially been recognized as refugees and are privileged to have official documentation, many live in a state of limbo without documentation and too often, stateless.

A significant number of refugees are environmental and climate-change driven who have been forced to leave their home, or their country, due to the effects of severe climate events, being forced to rebuild their lives in other places, despite the conditions to which they are subjected (IOM 2007, Piguet, 2008, Hugo 2011; Adamo, 2018). It has been estimated that more than 26 million people are displaced from their home as a consequence of environmental change. The interlinking trends of climate change, population growth, rising consumption, large infrastructure projects and environmental degradation may lead to greater numbers of people displaced in future. It has been projected that this number will reach to around 200 million by 2050, taking into account demographic change and deteriorating environmental conditions (Myers 2002; UNEP 2017: 71).

Forced movements differ by type and reasons. Environmental degradation and climate change are among the reasons of human displacement and forced migration by threatening lives and making people's livelihoods untenable, particularly the poorest and most vulnerable (UNEP 2017). Black *et al.* (2011) in their conceptual framework identified five families of drivers which affect migration decisions: economic, political, social, demographic and environmental drivers. Brown (2008:9-19) divided the impact of climate change into two distinct drivers of migration, a) *climate processes* such as sea-level rise, salinization of agricultural land, desertification and growing water scarcity, and b) *climate events* such as flooding, storms and glacial lake outburst floods. In his view, non-climate drivers, such as government policy, population growth and community-level resilience to natural disaster, are also important. The impacts differ by the speed of change and the number of people it will affect. While fast-onset changes might displace large numbers of people for relatively short periods of time, the slow-onset drivers are likely to displace permanently many more people. The settlement of forced migrants in their new place or camps either within or outside boundaries of a country has significant environmental and climate impacts and risks. It has also been claimed that, the increase in the number of migrants can contribute to conflict in migrant receiving areas in many different ways. This ranges from competition over natural and economic resources, ethnic tensions, socioeconomic tensions and burden on infrastructure and services (Abel *et al.* 2018: 241). The impacts of hosting forced migrants can have long-lasting consequences and change for the hosting communities even after the forced migrants have left.

There is, thus, a complex relationship between environmental change and displacement, and the influence of non-climate drivers including demographic variables should not be underestimated.

Thus, the climate impacts of forced movements should be analysed from a demographic perspective in order to mitigate the risks for the communities and populations at risks and with vulnerabilities. Demographers can serve in several areas including conceptual specification, analysis and measurement, data collection, predictions and modelling, policy and program design, as well as training and research for the understanding of climate impacts and risks of refugees and IDPs. These areas are briefly discussed in the following sections:

a) Conceptualisation and theoretical framework

There is a lack of standard texts and a systematic body of literature on theoretical frameworks to guide environmental forced migration from a demographic perspective. However, the widely used framework by Black *et al.* (2011) identified five drivers -- economic, political, social, demographic and environmental -- that affect migration decisions. Based on this framework, individual migration decisions and flows are affected by these drivers operating in combination, and the effect of the environment is, therefore, highly dependent on economic, political, social and demographic contexts. Environmental change also affects migration indirectly, in particular through economic and political drivers.

According to Black *et al.* (2011: 6-7) demographic drivers include the size and structure of populations in source areas, together with the prevalence of diseases that affect morbidity and mortality. The effect of demographic factors on migration is most likely to be seen through interaction with other drivers, particularly economic. It is not the presence of large numbers of people in a region per se that will trigger outmigration, but rather the presence of large numbers without access to employment or livelihood opportunities. Younger migrants are more likely to migrate, so the demographic characteristics of a source region will influence who moves in response to economic drivers. These demographic characteristics may be affected not only by birth and death rates, but also the burden of disease and ill-health within a community. Similarly, the demographic characteristics of a receiving area – such as an ageing population – may affect the demand for jobs and employment opportunities, and hence the perceived attractiveness of that area. Thus, such characteristics as age, sex, educational level, wealth, marital status, attachment to place, and attitudes and preferences (such as degree of risk aversion) influence decisions to move. Decisions are frequently made in a family context, so the characteristics of the family unit, and power relationships within it, are also important, but note should be taken that relative effects of personal and household characteristics vary between members of a community (Gubhaju and de Jong, 2009; Black *et al.* 2011, 10).

While the comprehensive framework by Black *et al.* (2011) concentrates on the reasons behind climate-driven migration, there is no specific theoretical framework to explain the settlement patterns, reactions and adaptation process and consequences of the environmental displaced population in the new places living either in camps or residing among the native population. This is one of the main gaps in demographic research that needs to be filled (Schutte, et al. 2021), particularly if the population sciences are to contribute to the momentum of international migration governance. The shared responsibilities of the UN Global Compact for Safe, Orderly and Regular Migration include protection of migrants at risk of social, economic and environmental change. Objective 2 of the Compact outlines commitments to reduce the adverse

effects of drivers of migration on migrants, and calls specifically for research to “strengthen joint analysis and sharing of information to better map, understand, predict and address migration movements, such as those that may result from sudden-onset and slow-onset natural disasters, the adverse effects of climate change, environmental degradation, as well as other precarious situations, while ensuring the effective respect, protection and fulfilment of the human rights of all migrants.” While the Global Compact on Refugees also acknowledges the role of environmental change factors in forced migration and the search for human security, the internationally sanctioned definition of a refugee under the 1951 Convention on the Status of Refugees limits causes of persecution to “race, religion, nationality, membership in a particular social group or political opinion.” Causes for broadening legal perspectives on the need for safe have are well argued in the literature (see Martin 2018; Martin *et al.*, 2018; Martin 2010; Martin *et al.* 2021; Fornale and Doebbler 2018; Berchin *et al.* 2017).

b) Analysis and measurements

Demography embraces critical consideration of relevant units of analysis, for example, the individual, family, and household. Internal population displacement, irregular migrations and climate change driven migrations have emerged as significant foci for demographic research. The relevance of a demographic lens for the analysis, both descriptive and explanatory, has been illustrated in Hugo *et al.* (2018) for an inexhaustive range of issues including environmental, security, and gendered dimensions of forced and refugee migration and processes of return, integration, assimilation and contributions of forced migrant groups.

The first order of demographic analysis in response to humanitarian crises is the estimation of the overall scale of the crisis (population size) and the relative proportions of vulnerable groups within the displaced population, most often measured by age and gender characteristics. Analysis of the demographic characteristics of migrants is also critical for the allocation of resources and services to vulnerable migrants at various stages of displacement and flight (Reed, Haaga and Keely 1998). Gender is one of the main demographic characteristics of forced migrants, refugees and populations of concern that needs to be analysed in order to identify the degree to which risks, experiences and circumstances vary by gender (Jacobsen and Landau 2003). When informed by feminist theory and methods, migration research reveals costs to both general and specific understanding of migration processes in failing to incorporate gendered perspectives in the conduct of research questions, design and interpretation of results. A ‘gender lens’ should be applied to demographic analyses of migrants at all stages of the move, including pre-migration in countries of origin, during flight and move, in transit to places and camps, and finally, in countries of asylum and resettlement as well as in migrant communities in the host societies. Failure to consider gender in the demography of forced migration weakens the relevance of demographic analysis for prevention of, and response to, complex humanitarian crises (Kraly 2018).

It is also important to study from which local area and what region of the country migrants originate, in relation to what region in the destination they tend to settle. In countries where there is ethnic violence, people may move out from an area where particular ethnic groups are located.

Here is the list of illustrative questions that can be addressed in any demographic analysis in refugee and IDP communities:

- What is the age structure of the refugee and displaced people who are internally dislocated or are living in camps? What is the comparative age structure of the refugee/IDPs and host community? What proportion of the displaced population are in school-age and working-age, and old ages?
- What is the level of education of the displaced population? What is the gender difference by education? Do women and men have equal access to education?
- Does the displaced population live in housing in close proximity to the native population in the host society? Does the majority of the displaced population live in designated camps? Are they segregated in the designated areas, located in camps, or have they been integrated into the host society? What is the density of the resident population in and outside camps? The degree of the integration and density will determine the proportion of population to land, water, and its impact on the environment.

In analyzing the displaced population, we should consider whether the displaced population has moved due to sudden climate change events, or has moved due to a slow-onset change, which has a longer impact on both the refugee and displaced population settlements, on the country and place of origin, and on the destination place. Protracted refugee situations also need to be followed and studied over time.

These demographic research questions may be considered as falling short of critical analysis of the intersections among environmental change and mobility, particularly in relationship to gender (see Lama, Hamza and Wester 2021). We wish to make the case that attention to *differences* among men and women, old and young, mobile and immobile, and how these differences vary over time, the life course (see Von Praag 2021) and across space benefits from demographic perspectives in concepts, data and methods. A demographic perspective underscores the significance of comparisons of migrants and non-migrants, the mobile and the immobile to measure concepts and indicators of the cause and consequences of migration on populations and communities; a demographic perspective directs us to consider the cohort effects of migration, and the implications of the lived experience of migrants for the life course, and critically, how these effects *change* over the life course; a demographic perspective leads us to consider the spatiality and *social* spatiality of migration processes, including characteristics of co-ethnics in spaces in which forced migrants find themselves.

Operationalizing the perspective, demographic analyses can be used in providing support for the displaced population in the following areas. *Reception and admission* requires population levels, trends and distribution; support for needs requires measures of vulnerabilities and resilience varying by age, gender; *support for host communities* begs an understanding of population composition and components of population change, processes of integration and social and economic reproduction, etc.; and *durable solutions* assume an understanding of the causal drivers – proximate and ultimate – of forced migration and population displacement (Kraly and Abbasi-Shavazi, 2018a: 307).

c) Data collection, availability and quality

Lack of adequate data has been repeatedly pointed out as a serious deterrent for sound scientific knowledge on cross-border environmental displacement, despite important advances in the matter (Adamo 2018: 212). The lack of reliable and comprehensive data on the level of forced

migration, and particularly on the characteristics of movers, results in an underestimation of the scale of forced movements and an incomplete and inconsistent demographic picture (Abbasi-Shavazi and Kraly, 2018a: 335). Thus, to be able to address the aforementioned questions, there is an urgent need to collect data for understanding the situation of refugees and the displaced population.

Censuses and surveys are the most important sources of data on the numbers, characteristics, socio-economic status, as well as attitudes and behavior of the displaced population. In addition to cross-sectional data collected by census or surveys, there is a need for longitudinal data to follow the situation and changing patterns of refugee and displaced population. What is required is the examination of a cohort effect of the refugee situation over time. For instance, the following questions need to be addressed: What is the level of environmental destruction of refugees and IDPs as they age? What is the level of access to health and education, and what impacts these resources will have on their wellbeing in the host society? What is the level of integration of the refugees in education and employment systems as compared to the native population? If they are segregated, are they segregated at the time environmental disruption or are also segregated over time?

In other words, there is a need for a life course perspective in addition to cross-sectional situation analysis for the displaced population. Individuals need to be followed over time to see the impacts of environmental and societal changes on their wellbeing, and mutually examine their impacts on the environment as they age. The impacts of policies on their life and wellbeing can be examined using longitudinal and comparative data over time. The integration of longitudinal and life course/historical approaches is needed to deepen our understanding of the consequences of forced migration and displacement for individuals, families, and communities (Kraly and Abbasi-Shavazi, 2019: 182). Also, there is a need for stock as well as flow data on the displaced populations.

Variations in statistical measures and in availability and quality of data for countries and regions pose significant challenges for efforts aiming at comprehensive and comparative analysis. Appropriate statistical infrastructure for reliable data collection and analysis is also a challenge in the field, particularly given the social, spatial and temporal characteristics of complex humanitarian emergencies (Abbasi-Shavazi and Kraly, 2018a: 335).

The UNHCR attaches a great deal of importance to registration and to the number and social demographic characteristics of refugees, as these are fundamental to its mission for the protection of refugees. Registration of migrants is a key task of host governments, intergovernmental agencies and non-governmental organizations working in this field. In order to compare forced migration outcomes, data and information should be comparable and reliable (Abbasi-Shavazi and Kraly, 2018a: 336). In many cases, only refugees or populations of concern to the UNHCR who receive international assistance are counted; forced migrants who self-settle and 'blend in' with the local population might never be counted or estimated, unless their number is large enough that a rise in the local population becomes visible. For these reasons, many migration statistics are nothing more than estimates about the reality in the field, but nevertheless such estimates are not necessarily without value if certain consistent rules of analysis and interpretation are applied (Abbasi-Shavazi and Kraly, 2018a: 335). Thus, there are important environmental implications for under/overcounting and connecting UNHCR population estimates with proxy measurements of population impacts on the landscape, and nutritional, energy, water and other needs.

Demographic research on forced migrants and displaced populations must rely on synthesis of information from multiple sources and methods of data collection, including both quantitative and qualitative approaches.

d) *Predictions and modelling*

Predicting future flows of climate migrants is important for planning, but this is a complex process stymied by a lack of baseline data, distorted by population growth and reliant on the evolution of climate change as well as the quantity of future emissions (Rigaud et al. 2018). However, modelling population displacement and asylum seeking is currently among the most dynamic areas of research in migration studies and the population sciences. Projects to predict short-run levels and characteristics of asylum seeking have been undertaken by the OECD, the Danish Refugee Council, Sweden and Switzerland (NAS, forthcoming; NAS 2019). Recent research by PRIO, Norway has advanced modelling by using a ‘machine-learning prediction framework’ to evaluate the relative effects of climate driven migration versus violence and political factors in predictions of variations in asylum seeking to Europe (Schutte, *et al.* 2021). Logical next steps from modelling current and short-term population displacement and migration is to consider likely scenarios for longer term population dynamics in relationship to the arc(s) of climate change. This area of demographic research is well integrated in studies of the role of environmental and climate change on population processes and human mobility specifically (Kraly and Abbasi-Shavazi, 2019: 182; see also Abel *et al.* 2018).

e) *Policy analysis and programs*

The goal of demographic research and studies should be to reduce environmental impacts and risks of refugees and IDPs. The role of demographic analysis in evidence-based policy making is valuable as analytic scales can reflect upon international, regional and state and local level responses to refugees and forced migrants in addressing the causes and consequences of forced population movements (Kraly and Abbasi-Shavazi, 2018: 306; Adamo 2018, 213-214). To this end, the Global Compact for Safe, Orderly, and Regular Migration (adopted by 164 countries—not including the U.S.—in Marrakech in December 2018) called on countries to make plans to prevent the need for climate-caused relocation and support those forced to relocate (UN 2018). Principles of efficiency, effectiveness, equity, and justice in distribution of emergency and other resources are informed by demographic parameters—population size, spatial distribution, and composition by age, gender, ethnicity, etc. (Kraly and Abbasi-Shavazi, 2019: 180).

Demographic analysis should verify who are the disadvantaged and vulnerable populations? Who have access to the services and who is left behind? The values of inclusiveness, equity, promotion of human well-being and health should be followed by demographic research. In other words, voices of people should be heard in studies of forced migration.

Refugees and IDPs living in low- and middle-income countries are especially vulnerable to the economic impacts of the COVID-19 pandemic. The loss of housing due to rising rents and unemployment and relocation to more marginalized areas is an inevitable livelihood strategy for many. Living in overcrowded camps or lower-socioeconomic urban areas, where adequate social distancing is difficult, poor nutrition is common and access to sanitation is limited, makes refugees and IDPs more vulnerable to coronavirus infection than others. Refugees with an undocumented status are disproportionately vulnerable and disadvantaged in situations like this. One of the major

problems facing refugees during COVID-19 is continuing access to educational services. Women and girls are usually more disadvantaged due to the relative increase in the physical and psychological vulnerability of refugee women during pandemic. Like in many other host countries, those who reside without a legal permit are usually denied access to public and welfare services, including having an ID card, and are consequently unable to have the privileges of banking services and internet access. Future direction of policies and programs should include short, medium, and long-term plans. Modelling the post-COVID era, taking into account the conditions of refugees and their numbers in the future of the global economy, is a planning necessity for any country (Abbasi-Shavazi, 2021).

f) *Training and research on demography of forced migration*

Given the size and scale of environmental and climate change refugees and displaced populations, programmes of demography and population studies should more actively engage in studies of forced migration and promote research and training in the field of migration generally. Training of, and investment in, a new generation of scholars in the study of forced migration will not only lead to the generation of new knowledge, but also to better data collection, increasingly rigorous research methodologies and more evidence-based interpretations concerning forced migrations (Abbasi-Shavazi and Kraly, 2018a,b). To be gained is a clearer and more effective understanding of the drivers of forced migration and the experiences and contributions of forced migrants and refugees within both the host and home societies. Planning for refugees and forced migration should also include programmes for the integration of refugees in the host societies while facilitating repatriation. This process is possible with close and creative collaborations among population scientists in government agencies and civil society within all countries.

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