

What Climate Migration Forecast Means For Risk Management

By **Austin Pierce** (January 27, 2022, 3:06 PM EST)

The Intergovernmental Panel on Climate Change's sixth physical climate assessment, released in August 2021, bore dire news on the state of physical climate impacts across the planet.

Key parts of the IPCC report were subsequently incorporated into the text of the Glasgow Climate Pact, published in November 2021, noting alarm at the degree of warming already incurred and the need to act to reduce future impacts.

But what of the people for whom climate impacts are already occurring, or inevitable? Some will stay put, rebuilding or fighting over increasingly scarce resources. But others will move.



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According to the World Bank's updated Groundswell Report from September 2021, several hundred million such climate migrants[1] may appear by 2050 — and virtually nowhere is ready to receive them.

The Groundswell Report also notes that this is a near-term problem, with hotspots for such migration likely developing by the end of this decade. However, similar to the IPCC's projections for physical climate impacts overall, the report found that rapid adaptation can significantly reduce the scale of climate migration.

In this article, we review the report's key findings, and what this means for how organizations approach climate and environmental, social and governance, or ESG, topics generally — including potential gaps in their risk management strategies.

Every region reviewed will experience climate migration.

The Groundswell Report examines six regions: (1) Eastern Europe and Central Asia; (2) North Africa; (3) Sub-Saharan Africa; (4) South Asia; (5) East Asia and the Pacific; and (6) Latin America. Each of these regions were expected to see climate-induced migration regardless of the scenario reviewed.[2]

The report estimates that, without concrete climate and development action, there may be up to 216 million climate migrants by 2050. However, the report also notes that these figures are likely conservative, due to its limited focus.

Several regions are omitted from the report's analysis, and the report focuses solely on internal climate

migration from slow-onset climate change impacts: namely, water availability, crop performance and sea level rise.

Therefore, the figures do not consider international climate migration or any migration, intranational or international, related to extreme weather phenomena — tropical storms, wildfires, etc. — that may be more frequent or intense due to climate change.

Climate migration hotspots will emerge by the end of the decade, intensifying through 2050.

Modelling from the Groundswell Report indicates clear spatial patterns for climate in-migration and out-migration, at both the country and region levels. Importantly, the report notes that climate-related impacts are already underway, altering the attractiveness of livelihood and resource conditions in multiple environments.

The impacts vary by location, but the results are thematically similar. The slow-onset climate change impacts examined by the report can creep along, eroding the viability of living in an area over time.

In such areas, water scarcity and declining crop production do not necessarily mean that a community will be abandoned wholesale. Instead, climate migration may occur predominantly on the margins, as the carrying capacity or desirability of an area diminishes overtime.

In fact, the report notes that many notable out-migration hotspots and economic and population growth centers will continue to support large populations, despite increasing climate impacts.

However, in other areas, habitability becomes a real question. This can be for a variety of reasons, ranging from heat stress to land loss.

Perhaps the most notable example of this would be sea level rise, as many small island developing states find their available land area decreasing overtime — often exacerbated by extreme weather events or the collapse of key ecosystems. In these locations, entire communities may be uprooted in order to move away from unavoidable climate impacts.

Climate migration results in significant social risks.

For perspective, the 216 million potential climate migrants discussed in the Groundswell Report would be approximately equivalent to relocating the entire present-day populations of the United Kingdom, France, Italy and Australia. Human movement at such a scale is not without social repercussions.

In particular, the report notes that areas receiving climate migrants are often ill-prepared to receive them. Planning for the arrival of climate migrants is tricky, as it requires the expansion of a range of infrastructure — not just the physical buildings and availability of housing, but also the availability of public services, employment opportunities and avenues for social integration.

The challenges only become more complex for in-migration hotspots that may be suffering a mixed bag of impacts, such as better crop performance but decreasing freshwater availability. In such situations, a significant influx of people may spark tensions over competition for increasingly limited resources.

This being the case, climate change presents a one-two punch for social resilience, as it requires institutions and governments to manage the stress of a changing climate while also managing the stress

of potentially large-scale migration.

Action now can significantly reduce the scale of climate migration.

Despite its ominous warnings, the Groundswell Report highlights that targeted action taken today could more than halve the scale of future climate migration.

While the report cautions that adaptive practices are not one-size-fits-all, it gives several general policy recommendations to help address climate migration.

Cut global greenhouse gas emissions.

The reason this recommendation is so commonplace is because it's effective. Despite dire projections, physical climate models indicate that rapidly reducing GHG emissions can still prevent the worst climate impacts.

Consider climate migration in development planning.

Unfortunately, some climate migration is still likely to occur as a result of committed warming — i.e., the amount of warming that is predicted as being unavoidable.

But investing in people can help to reduce the risks of any climate migration that does occur by (1) improving communities' resiliency to climate impacts, and (2) increasing the opportunities available to those who still have to move.

Craft policy so climate migration can have positive development impacts.

Large-scale movements of people are ripe for conflict or other negative interactions. But planning in advance can help to reduce such risks.

Slow-onset climate change impacts allow policymakers at least some time to organize relocation efforts and initiate managed retreat, so as to better preserve people's safety and dignity in migration.

Invest in better understanding of climate migration.

Policies are more effective when they are targeted, but the report suggests that targeted policies require better data than is currently available. More work is needed to incorporate the various factors that contribute to climate migration into models to better inform decision making at appropriate scales.

So what does this mean for you?

Climate migration is perhaps one of the most poignant examples of the interaction between the "E" and "S" pillars of ESG. Physical climate impacts are poised to uproot livelihoods, as people move away from homes that are in many cases no longer capable of sustaining them. And, as tragic as that is, these decisions to move are not the end of the saga.

How climate migration unfolds is dependent on multiple veins of future choices and action, including future emissions, inclusion in development and the infrastructure in place for migrants. The findings of the Groundswell Report thus raise several key considerations, for both businesses and policymakers, in

their climate strategies.

Discussion of risk and impact needs to consider the nexus between environmental and social issues.

Climate migration shows the human impact of climate change in a very palpable way. As such, it directly raises questions of human rights and climate change, as well as environmental and social issues more broadly.

The need to integrate these topics has received increased attention and traction in recent years. This can be seen in several ways.

Environmental issues may result in social impacts, such as how air pollution can impinge upon people's health. And, similarly, social issues can have environmental implications. The relationship can be synergistic or inverse, depending on the particular issues at hand.

However, there is also a third category of interaction that cannot be separated from this nexus itself, having both inherent environmental and social aspects. This includes such topics as environmental justice, which looks at how environmental harm can be intersectional with social marginalization, as well as the increasing push for a specific human right to environmental quality.

In October 2021, the United Nations Human Rights Council endorsed a right to a healthy environment, which multiple countries, or political subdivisions thereof, have also adopted into their constitutions.

This being the case, organizations will be increasingly tasked to understand and address the complex interrelationships between environmental and social issues and the organization's performance, in a more holistic and comprehensive manner.

For climate migration, one example of this is that coastally-focused enterprises may need to consider not only sea level rise on its own, but also how sea level rise may result in the loss of human capital, as employees are pushed to relocate inland.

Infrastructure of all types is fundamental to managing climate-related risks.

The role of certain forms of physical infrastructure is well-cemented in the dialogue around climate adaptation. But the Groundswell Report shows that a broader approach to infrastructure can yield substantial benefits.

For example, expanding access to educational opportunities can have a prophylactic effect, by helping to improve people's human capital, and making them and their communities more resilient to climate-related impacts.

And the report also notes the importance of social infrastructure in managing the climate migration that does emerge. Just as bridges and seawalls may need to be built or reinforced to withstand climate-related impacts, expanding and reinforcing social services will be important to managing and accommodating the surge in climate migration that is predicted to occur as soon as 2030.

Similarly, accommodating such migrants requires expanding economic and environmental infrastructure, such as housing stock, water and wastewater services, and power generation and transmission capacity.

Certain forms of infrastructure can be built out more quickly, or with less disturbance to existing activities, than others. However, as a general rule, building infrastructure takes time, and building it to accommodate increase future usage requires significant pre-planning.

Therefore, to achieve the climate risk management benefits it can provide, businesses and governments need to be planning well in advance.

Climate change can result in many more risks than may be directly apparent.

The recommendations of the Taskforce on Climate-related Financial Disclosures continue to serve as the most prominent framework for conceptualizing climate risk, including its classification of such risks into transition and physical risks.

Transition risks are the vulnerability of an organization's business model to various policy, technological, market or other changes to mitigate or adapt to climate change. Physical risks are typically seen as the direct climate events that occur — the stronger and more frequent storms, or the changes in sea level or precipitation patterns.

However, in using this framework, companies have often focused on first-order impacts, instead of the various knock-on effects that may occur from either transition or physical climate risks.

For example, when companies discuss physical risks, they oftentimes focus on direct impacts, such as damage to company assets, or indirect impacts that have an immediate, salient effect on operations, such as supply chain interruptions. They do not commonly consider how impacts from physical climate events may affect others in a way that creates some secondary risk event, with its own impacts on the company.

Climate migration is such a second-order risk, as slow-onset climate change impacts such as sea level rise spur the mass movement of individuals to different locations, contributing to a loss of human capital where they are leaving, and potentially straining the resources of wherever they have relocated to. And climate migration is not the only such second-order risk.

Various research has suggested that climate change will have a profound effect on the global distribution of infectious diseases, as well as providing increased opportunities for severe zoonotic diseases like the current COVID-19 pandemic.[3]

Such outbreaks can, in turn, have a host of impacts. Without accounting for these secondary risks, companies cannot fully reflect the extent of their vulnerability to climate-related impacts.

This is not to imply that companies must reflect every possibility in their planning. The data and modeling requirements to do so would be untenable. However, companies should at least be considering the possibility and likelihood of more notable second-order risks in their risk management processes.

And as modeling capabilities become more robust, companies may be expected to incorporate second-order risks into their scenario analyses. Here, climate migration poses a particularly striking example of the potential gap in companies' climate risk management.

If scenario analysis of first-order risks indicated that a company's assets and operations are located in areas that are relatively resilient to climate change, those assets and operations are more likely to be in areas that are attractive to climate migrants, increasingly the potential for second-order risks — or opportunities.

For example, a company that relies on ample water supplies for its operations may find itself facing risk of water stress or shortages, even in an area with relatively modest precipitation changes, if a population surge places significant additional demand on water supplies.

These considerations are not unique to climate migration or climate policy in general. As businesses and policymakers continue to engage with more systems-driven issues, the potential for complex relationships between a company's operations and various environmental and social topics needs to be taken into robust consideration.

Otherwise, we create situations where there is nowhere to run — but we are running anyway.

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[1] While there is often discussion of climate "refugees," current international refugee law does not actually contemplate refugees from environmental events such as climate change. For more information on this topic, see Dina Ionesco, Let's Talk About Climate Migrants, Not Climate Refugees, UN Sustainable Development Blog (June 6, 2019), <https://www.un.org/sustainabledevelopment/blog/2019/06/lets-talk-about-climate-migrants-not-climate-refugees/>.

[2] Three scenarios were developed from combinations of a Shared Socioeconomic Pathway (SSP), either SSP2 (moderate development) or SSP4 (unequal development), with a Representative Concentration Pathway (RCP), either RCP2.6 (low emissions) or RCP 8.5 (high emissions). A pessimistic baseline used SSP4 and RCP 8.5; a climate-friendly scenario used SSP4 and RCP 2.6; and an inclusive development scenario used SSP2 and RCP 8.5.

[3] See, e.g., Eric P. Hoberg & Daniel R. Brooks, Evolution in Action: Climate Change, Biodiversity Dynamics and Emerging Infectious Disease, 370 *Philosophical Transactions of the Royal Society B* 20130553 (2015); Kevin D. Lafferty, The Ecology of Climate Change and Infectious Diseases, 90 *Ecology* 888 (2009). See also Patrick R. Stephens et al., Characteristics of the 100 Largest Modern Zoonotic Disease Outbreaks, 376 *Philosophical Transactions of the Royal Society B* 20200535 (2021) (identifying unusual weather patterns as a driver substantially more commonly seen in large disease outbreaks).