



CASE STUDY 2.1

GROUNDSWELL: PREPARING & ACTING FOR INTERNAL CLIMATE MIGRATION

KANTA KUMARI RIGAUD, VIVIANE CLEMENT • World Bank

BRYAN JONES • City University of New York (CUNY)

ALEX DE SHERBININ • Columbia University

In the face of escalating climate impacts and growing levels of distress-driven mobility, there is an urgent need to assess how climate change could affect large-scale migration in the coming decades in order to steer informed and evidence-based policy and planning.

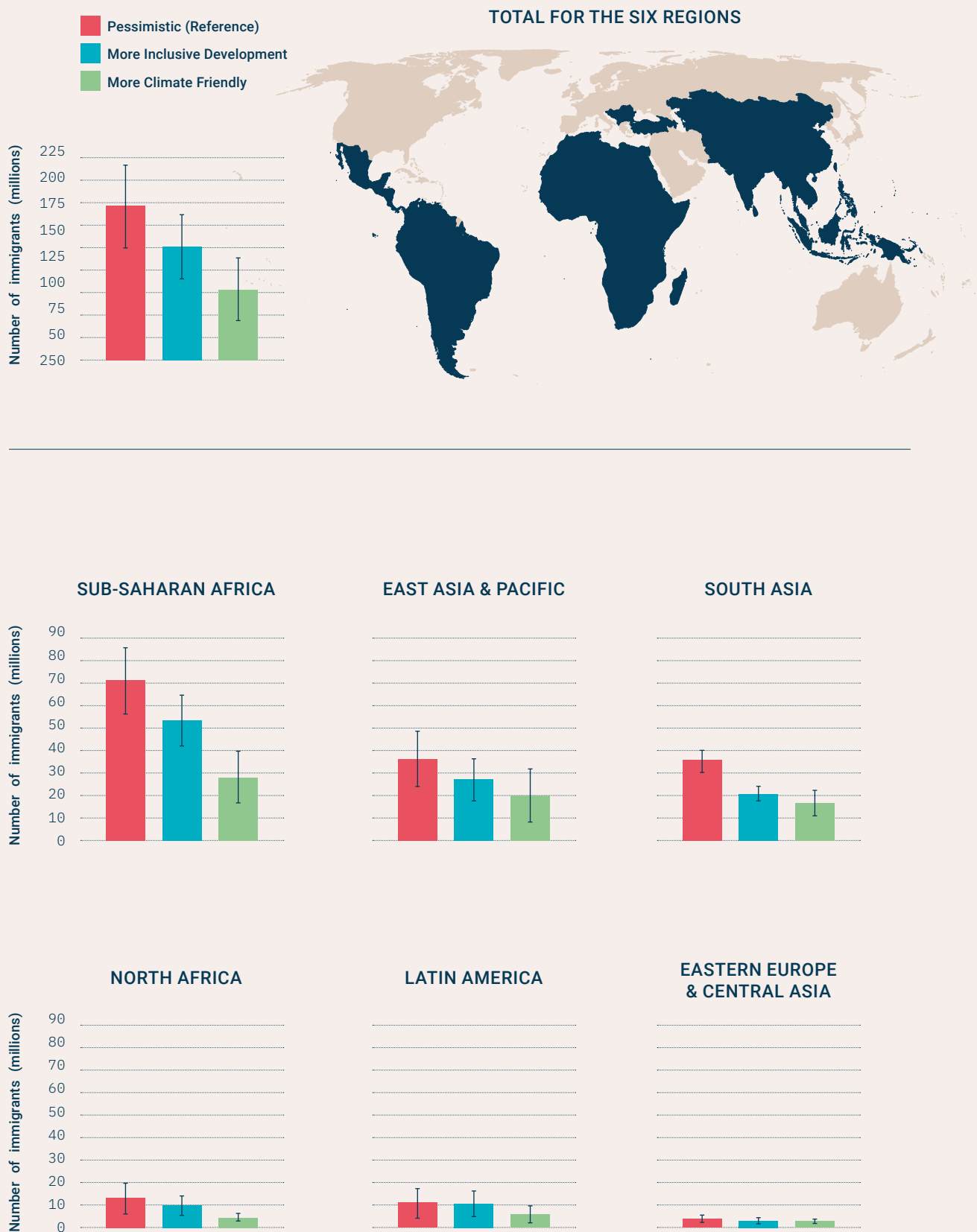
Governments and development actors can no longer assume that the evolution of population distribution and development activities targeting rural livelihoods and urban areas will remain linear in the face of climate change. Using a novel modeling approach, combining big data with tailored assessments, the World Bank developed a tool to help better respond to climate-driven migration through solutions that engender peace, stability, and security.

The World Bank's flagship report, *Groundswell: Preparing for Internal Climate Migration*, used a big data platform to set out for the first time the potency of climate change as a driver of internal migration in Sub-Saharan Africa, South Asia, and Latin America.³⁷ Climate in- and out-migration for the Middle East and North Africa, East Asia and the Pacific, and Eastern Europe and Central Asia was projected in a follow-up study that applied the same approach.³⁸ The Groundswell reports found that as many as 216 million people could be pushed to migrate within their own country by 2050 (FIGURE 2.2).

The analysis in the report found that the poorest and most climate-vulnerable areas will be the hardest hit. People will migrate more from areas with lower water availability and crop productivity and from areas affected by rising sea levels and storm surges. These trends, alongside the emergence of "hotspots" for climate migration, will have major implications for the poorest groups engaged in climate-sensitive sectors and will affect the adequacy of infrastructure and social support systems. While these trends are plausible outcomes, the scale of climate migration can be significantly reduced by pursuing global action on mitigation and inclusive, climate-resilient pathways within countries.

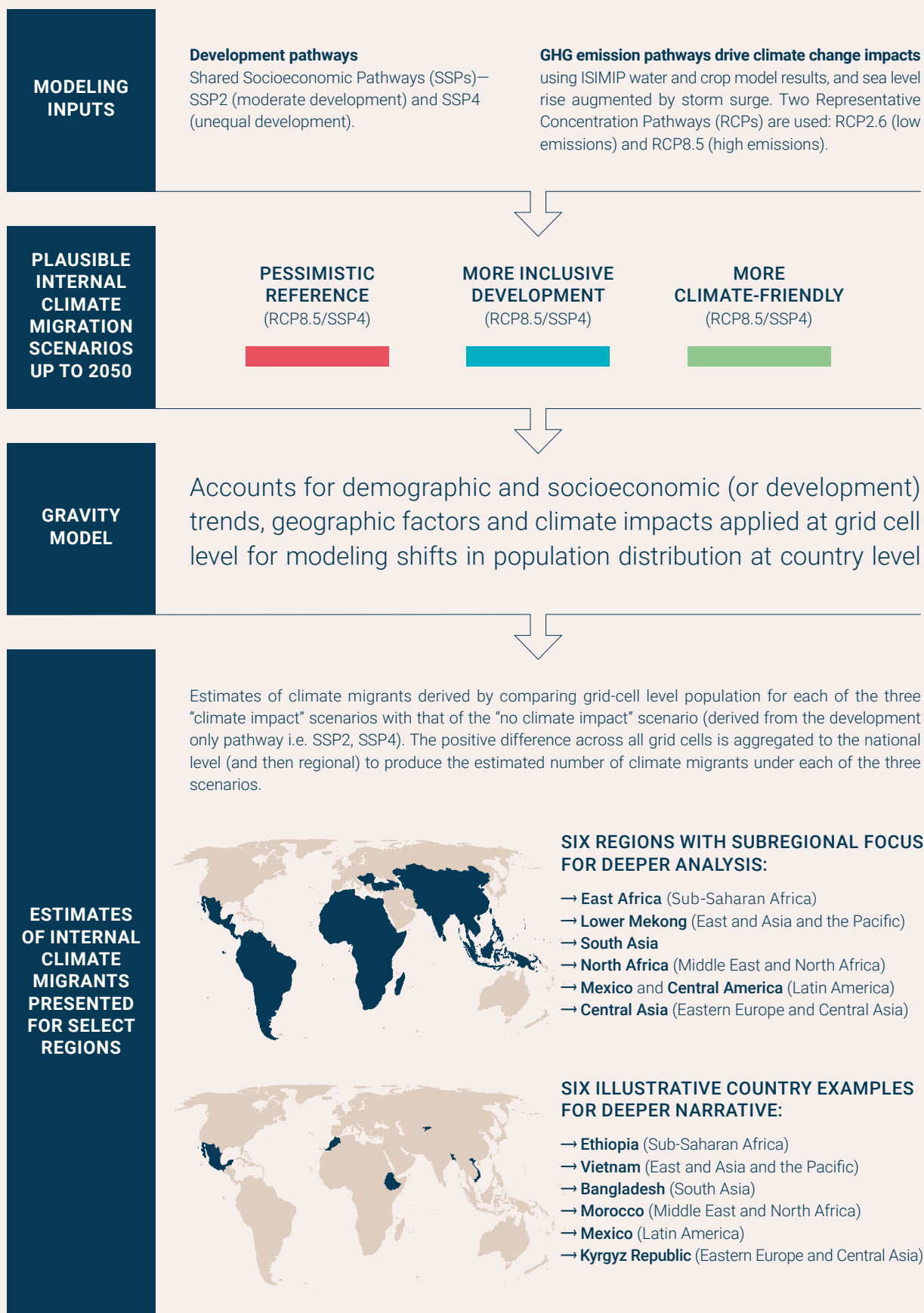
The Groundswell reports adopted a scenario-based approach and implemented a modified form of the gravity model to isolate the projected portion of future changes in the spatial population distribution that could be attributed to slow-onset climate factors up to 2050 (FIGURE 2.3). The gravity model used in Groundswell has the advantage of modeling at scale, over larger geographies, to illuminate the relative importance of push factors such as environmental or economic factors at the point of origin which influence the decision to migrate, versus pull factors. The full methodology is available in the appendices of the two Groundswell reports.

FIGURE 2.2: PROJECTED NUMBER OF CLIMATE MIGRANTS IN SIX REGIONS BY 2050, IN THREE DIFFERENT SCENARIOS.



Source: Adapted from World Bank 2021.

FIGURE 2.3: MODELING APPROACH TO ESTIMATE CLIMATE CHANGE-INDUCED INTERNAL MIGRATION.



Source: Adapted from World Bank 2021.