

Climate Change and Internal Migration in Sub-Saharan African Countries

(サブサハラにおける気候変動と国内人口移動)

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Climate change and the associated extreme weather events pose significant threats to both humanity and the planet. One of the ways the effects of climate change could manifest is migration and human displacement, with potentially adverse impacts on both the receiving and sending regions, as well as on the migrants themselves. Using large datasets of migration constructed from harmonized national censuses and local weather conditions, we apply a panel fixed effect model to estimate the impacts of long-term weather changes on within-country migration in 16 sub-Saharan African countries over the period 1969 to 2018. To address potential omitted variable bias, we account for weather conditions in alternative places of residence---an aspect which has been overlooked by previous studies. We report eight findings: first, climate change affects migration, but this effect is observed only in a block of West sub-Saharan African countries. In contrast, when the same specifications and data definitions are applied on East sub-Saharan Africa, we find weak evidence of climate-related mobility in this region. Second, an average annual decrease in rainfall of 120mm, over the sample period, increased internal migration by 11 percentage points while a sustained average-temperature increase of 0.5°C resulted in a 13 percentage points rise in internal relocation. Third, the incremental effects of decreasing rainfall and rising temperatures are diminishing, implying that, in the long run, further climate change will hinder out-migration. Fourth, temperature fluctuations lowered the odds of out-migration by 26 percentage points over the sample period. Fifth, rising temperatures force climate migrants to travel to much farther destination areas. Sixth, the effect of rainfall scarcity on rural-urban mobility is statistically significant but minimal in magnitude. Seventh, climate change affects the mobility patterns of men and women fairly equally. Eighth, climate-related mobility involves relocation of family units, as suggested by the comparable statistical and economic significance of climate mobility of young children. These findings have two policy implications. First, policymakers should explore alternative climate adaptation strategies to migration to assist vulnerable groups that are incapable of out-migration. These strategies may include promotion of irrigation agriculture, for example. Second, policy actions that facilitate migration as an adaptation measure may need to be implemented, following assessments of the potential impacts of such migration flows on the receiving regions.