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Farmers’ and academia’s views”

The effects of drought on inequality: evidence from rural Mozambique

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Abstract

This study analyses the distributional effects of an extreme weather event among poor rural households. Climate change increases the frequency and intensity of extreme weather events and climate shocks, causing adverse economic effects for many households worldwide. Low- and middle-income countries are disproportionately more affected when considering damages relative to GDP. While pointing to an important geographic inequality, such cross-country studies do not help us to understand the effect of climate change on the poor since society’s poorest members contribute little to macroeconomic indicators. The effects of climate risks are unlikely to be equally distributed within a given country. Poor households tend to be geographically more exposed to climate risk, own assets that are more susceptible to damage, while also being less able to cope with losses. Furthermore, affected lower-income households might lack the resources to sustain their livelihoods, potentially trapping them in poverty in the long term. Thus, understanding the within-country distributional effects of climate change is central for national level policy targeted at different groups within the country.

Exploiting the quasi-random spatial variation in weather conditions and using a first-difference estimator to control for time-invariant household characteristics allows us to causally identify the effect of exposure to drought conditions on income inequality in rural Mozambique – a population particularly susceptible to extreme weather events. Our empirical analysis builds on two waves of a representative household panel survey collected in 2002 and 2005, which contain detailed information on agricultural and non-agricultural income of rural households. The socio-economic data is combined with the drought intensity measure derived from the Standardised Precipitation Evapotranspiration Index (SPEI) aggregated at the village level. Our analysis disentangles the heterogeneity in effects across income groups, distinguishing effects on total household income as well as agricultural and non-agricultural household income. Results show exposure to drought conditions has a significant negative effect on agricultural income among the poorest households whereas the effects for the rest of the population was significantly less negative. There is no detectable effect on non-agricultural and total income, suggesting that poor households have been able to partly offset the shock to agricultural income.

Keywords: Climate change, extreme weather event, household analysis, inequality, Mozambique, panel analysis

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