Tropentag, September 9-11, 2020, virtual conference

"Food and nutrition security and its resilience to global crises"

Climate Variability and Rural Children Health Outcomes in Uganda

Emily Injete Amondo[1], Alisher Mirzabaev[2]

[1] *University of Bonn, Center for Development Research (ZEF), Economics and Technological Change, Germany*

[2] *University of Bonn, Center for Development Research (ZEF), Economics and Technological Change, Germany*

Abstract

Children in rural farming households are often vulnerable to a multitude of risks, including health risks associated with climate change and variability. Cognizant of this, we empirically assess the relationship between climate variability and nutritional health outcomes in rural children. Importantly, the potential transmission mechanisms through which climate variability impacts the children nutritional outcomes were explored. We combined four waves of the rich Uganda National Panel Survey (UNPS), part of the World Bank Living Standards Measurement Studies (LSMS) for the period 2009–2014 with objective high quality, and consistent gridded rainfall and temperature data products. In particular, long-term rainfall and temperature datasets were from Climate Hazards group Infrared Precipitation Station (CHIRPS) and Moderate Resolution Imaging Spectroradiometer (MODIS) products respectively. Self-reported drought and flood shock variables were further used in separate regressions for triangulation

purposes.

Fixed effects regressions was applied for empirical analysis. Generally, significant negative associations between children anthropometric measurements and lagged temperature based indicators, and drought events were apparent. On the contrary, seasonal rainfall was positively associated with some of nutritional measures. Agricultural production and child diarrhea were the main transmission channels, with extreme temperatures, droughts and high rainfall variability negatively affecting crop output. Probability of diarrhoea was positively associated with increase in temperature. Results further revealed that children in households who engaged in *ex-ante* or anticipatory risk reducing strategies such as precautionary savings had better health outcomes as opposed to those engaged in *ex-post* strategies such as involuntary change of diet. These results suggest the importance of adaptation in smoothing the harmful effects of climate variability on health of rural households and children in Uganda.

Keywords: Agricultural production, children, diarrhea, drought, *ex-ante* adaptation, extreme temperatures, gridded weather data, undernutrition

Contact Address: Emily Injete Amondo, University of Bonn, Center for Development Research (ZEF), Economics and Technological Change, Genscherallee 3, 53113 Bonn, Germany, e-mail: emijete@gmail.com