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How agricultural droughts are contributing to child undernutrition in sub-Saharan Africa

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Countries in sub-Saharan Africa (SSA) have some of the highest levels of child malnutrition, with more than one-third of children under five in the region characterized as chronically undernourished. High reliance on subsistence farming, poor adoption of irrigation technologies, and variable climate conditions make populations in SSA highly vulnerable to malnutrition during droughts. We use anthropometric data for 520,734 children under the age of five from 34 countries in SSA collected between 1990 and 2022 in combination with high-resolution agricultural and climate data to estimate the association between agricultural droughts and child undernutrition in the region. We use global gridded data on the geographical distribution of crop areas for 15 major crops. Data on crop planting and harvesting dates are also collected for each crop. The Standardized Precipitation Evapotranspiration Index (SPEI), a multi-scalar drought index, is used to measure the intensity and spatial distribution of droughts during key periods of agricultural production (planting, growth, and harvesting) and of different duration (seasonal and long-lasting droughts). Our analysis shows that droughts during the crop-growing seasons are associated with an increased risk of child undernutrition in SSA. The findings presented in this study call for urgent action to improve drought monitoring and response in SSA where the risks to child health posed by global warming are considerable. Under climate change, the severity and frequency of extreme weather and climate events, including droughts, are projected to increase, which will place millions of children at risk of hunger unless timely action plans are taken to improve food security in the region.