

Under the weather: Early-life rainfall has lasting effect on Indonesian women

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(PhysOrg.com) -- Indonesian women born into rural communities in rainy years grow taller, stay in school longer and live in households with greater wealth than women born in years with lower rainfall, a new University of Michigan study suggests.

The study extends previous research on the long-run impact of extreme environmental conditions in the critical first year of life to focus on a common source of vulnerability in poorer agricultural economies—weather.

"These patterns most plausibly reflect a positive impact of rainfall on agricultural output, leading to higher household incomes and [food availability](#) and better health for infant girls," said Sharon Maccini, the study's co-author and a lecturer at the Gerald R. Ford School of Public Policy.

The findings highlight the importance of public policies that help households cope with year-to-year variations in economic conditions.

Maccini and Dean Yang, an assistant professor also at the Ford School, used decades' worth of data on hundreds of rainfall stations across Indonesia to measure deviations from local rainfall norms.

They matched these yearly variations to the place and year of birth reported by several thousand Indonesian adults in an ongoing survey with detailed information on health, income, schooling and living conditions.

Women born in years with relatively low rainfall were shorter, reported themselves in worse health, attained less schooling and lived in households with fewer assets than comparable women who happened to be born in wetter years.

[Rainfall](#) did not affect outcomes for boys, suggesting gender bias where households give preferential treatment to boys in distributing food or other household resources. This might be especially true in times of hardships when a poor family's resources are strapped, Maccini said.

"Social insurance and food security or other public health programs can help households in poor rural communities worldwide protect their young children from ill health driven by temporary environmental shocks like droughts," Yang said.

This study, the researchers say, provides additional justification for these programs, as good nutrition and health investments for infant girls have a long reach into adulthood.

The findings appear in the June issue of the *American Economic Review*.

Provided by University of Michigan ([news](#) : [web](#))

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