

Assessing the Impact of Drought on Women and Child Undernutrition in India-A Disaggregated Perspective

Present Coexistence or Emerging Threat?

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Introduction

Background

- India's agriculture sector relies on the monsoon, however, the **rainfall patterns have become erratic** with **longer drought spells**.
- **29 percent** of India's land experienced over three months of extreme drought per year from 2013-2022 (Romanello et al., 2023).
- The frequency of drought spells has **increased from <50 to around 800** between 1990-99 and 2010-19 (Mohanty, 2020)
- Sea level rise, **glacial melts and groundwater shortages** have been predicted (Lee et al., 2023). Between 1901 and 2018, the **average annual temperature in India rose** by around 0.7°C (Singh et al., 2021; PIB, 2023)

Objective of this study

Objective 1

- This study attempts to empirically analyse the association of drought with undernutrition among women and children in India.

Objective 2

- This study explores the role of rural-urban intersectional identities in the impact of drought on women and children in India.

Methods and Analysis

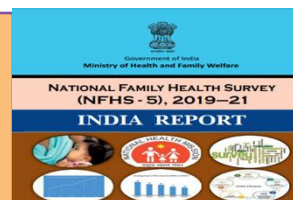
Data Source and Study Design

Climate Change Indicators



District level Decadal frequency for drought for the period 2010-19 by the Council on Energy, Environment and Water (CEEW)

Undernutrition Indicators



Fourth and fifth round of National Family Health Survey (NFHS) under Ministry of Health and Family Welfare for 2015-16 and 2019-21

Developing Pooled Data

Integrating decadal drought data from CEEW (2010-2019) with two rounds of the National Family Health Survey (NFHS) from 2015-16 and 2019-21, examining the overlap between the nutritional status of children and mothers and actual drought occurrences.

Method

Multivariate logistic regression is used on pooled data to quantify the association between drought and undernutrition.

Disaggregated Analysis

The study population is disaggregated by place of residence (rural, urban) to analyse the intersectional impact of drought on women and children.

Results

Results

Impact of exposure to drought on nutritional indicators using adjusted multivariate pooled regression analysis

	Drought-Overall	Drought-Urban	Drought-Rural
Women Underweight¹	1.06***	1.09***	1.05***
Child Stunting²	1.04**	1.02	1.05***
Child Underweight²	1.10***	1.13***	1.10***
Minimum Dietary Diversity²	0.72***	0.72***	0.71***

¹Adjusted for Place of Residence, Social Group, wealth status, household with sanitation facility, household with clean water, household with clean fuel, mass media exposure, women's education, number of household member, survey year

²Adjusted for Place of Residence, Sex of Child, Social Group, wealth status, household with sanitation facility, household with clean water, household with clean fuel, mass media exposure, mother's education, mother BMI, birth order, mother age at first birth, child current age, number of household member, ICDS, survey year

Level of significance at 95% confidence interval ***<0.001, **<0.01, *<0.05

Cont...

- The impacts of drought on malnutrition and mortality are often indirect and complex.
- Droughts affect ecosystems, reducing food supplies, mainly crops and livestock. Consequently, this decline in food availability or quality diminishes nutrient intake, making individuals more vulnerable to malnutrition and increasing the likelihood of mortality or illness (Stanke et al., 2013).
- Further, these findings highlight the strong link between **drought and agricultural production in rural areas**, and **drought and food markets in urban regions**.
- A decline in food quality, dietary imbalance, and reduced consumption of essential items like milk and vegetables, leads to adverse health outcomes for women and children (Goh, 2012).
- Women primarily bear responsibilities such as ensuring water supply, cooking fuel, and food security. Consequently, they are disproportionately affected by drought (UN-ECOSOC, 2010). Women also secure fuel, fodder, and water for their homes, increasing their workload (Shah, 2007).
- This underscores the broader social implications of drought on nutrition and well-being for women and children.

Recommendations

- Comprehensive longitudinal studies are needed to understand women's specific health impacts in different occupations.
- Need for collective action, such as strengthening social security schemes (e.g., Public Distribution System) in drought-prone regions across South Asia.
- Gram Panchayat development plans should address local hazards (droughts, floods etc) and have a Climate Action Plan.

Thank You!

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