

# I44/I215—Food or Water for Sanitation: Explaining Regional Differences in Child Malnutrition Rates in Uganda

Kabunga N<sup>1</sup>, Ghosh S<sup>2</sup>, Duggan C<sup>3</sup>, Bashaasha B<sup>4</sup>, Griffiths JK<sup>2</sup> and Webb P<sup>2</sup>  
<sup>1</sup>International Food Policy Research Institute-Kampala Office, Uganda, <sup>2</sup>Tufts University, Boston, Massachusetts, USA, <sup>3</sup>Harvard TH Chan School of Public Health, Boston Massachusetts, USA <sup>4</sup>Makerere University, Kampala, Uganda.

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## Background and Objectives

- Maternal and child malnutrition rates are generally high in Uganda.
- There is a great regional imbalance in malnutrition rates, with the southwestern region—described as the country's food basket— persistently recording disproportionate higher levels of child malnutrition compared to the northern region, which is largely impoverished and recovering from several years of civil war.
- This study analyzed factors driving the persistent differential stunting rates (using height-for-age Z-scores) across Northern and Southwestern Uganda.

## Methods

- The analysis used panel datasets collected from 2 rounds of household surveys in 6 districts (Kamwenge, Kisoro Agago, Kole, Dokolo and Lira) of rural Uganda in late 2012 and late 2014.
- The datasets contains more than 3,300 self-weighted random sample of households at each round with more than 5,400 children below 5 years.
- Data were collected by trained enumerators; datasets contain a range of variables on agriculture, household socioeconomics, health and nutrition aspects as well as on child anthropometry.
- For this analysis, height-for-age z-scores (HAZ) were used to measure child linear growth as the key outcome.
- Oaxaca decomposition methods, controlling for time and locational fixed effects were employed to examine factors that drive mean differences in HAZ scores between southwestern and northern regions.

## Results

- Figures 1 and 2 show that HAZ scores are generally low but persistently lower for SW Uganda
- Mean HAZ scores were  $-0.95 \pm 0.03$  and  $-1.77 \pm 0.06$  for northern and southwestern Uganda, respectively representing a significant mean difference of  $0.82 \pm 0.07$  ( $p < 0.001$ ).
- Decomposition analysis revealed that major differences existed in water access/volumes than in the food production gradient/ diversity as is commonly believed.
- Households in Northern Uganda averagely used 8 more liters ( $p < 0.001$ ) of water per capita per day for domestic purposes compared to households in SW Uganda. This accounted for  $0.40 \pm 0.07$  ( $p < 0.001$ ) difference in HAZ scores observed.
- Interacting domestic water use with food-related sanitation patterns showed that northern households were likely using domestic water for sanitation related habits, such as washing hands after toilet use.
- Further work will explore potential significant unobserved factors that may contribute to this wider difference.

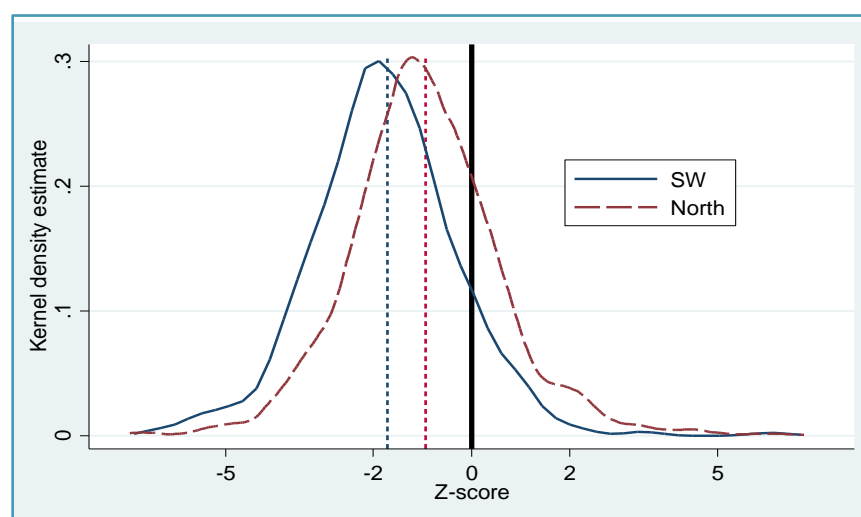


Fig. 1: Kernel density estimates for HAZ, for North and SW Uganda, 2012

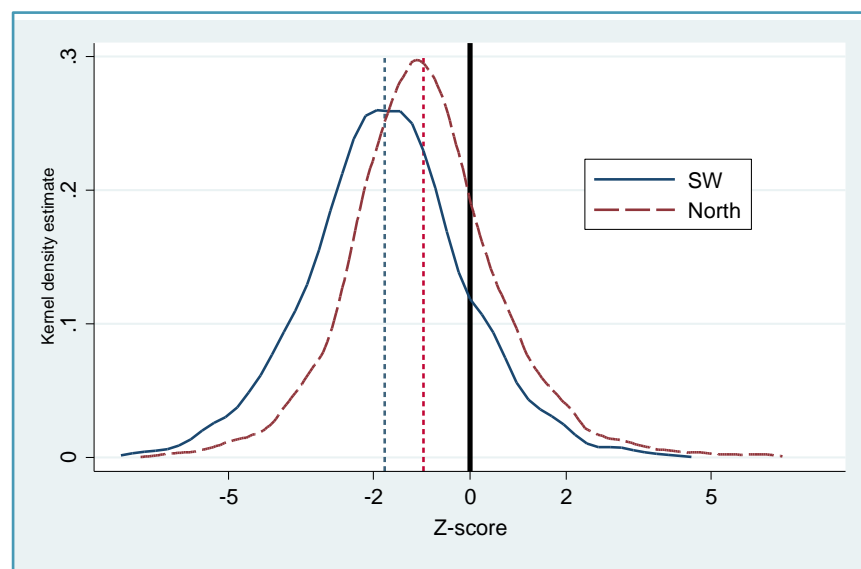


Fig. 2: Kernel density estimates for HAZ, for North and SW Uganda, 2014

## Conclusions

- There were persistent differential malnutrition rates across SW and Northern Uganda.
- Contrary to common hypothesis, this study showed that differentials in malnutrition rates across Northern and SW Uganda were not necessarily due to differences in food production and food diversity but rather due to differences in domestic water use quantity.

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