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SCHOOL OF PUBLIC HEALTH

SickKids
Centre for Global Child Health

Study Brief
Uganda Stunting Case Study
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Exemplars in Stunting Reduction: Uganda Country Case Study

Investigators and lead institutions

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The Exemplars in Stunting Reduction project was designed to investigate the trends, determinants, and success factors among countries that had achieved a rapid rate of childhood stunting reduction relative to their economic growth. Phase I of the project comprised 5 countries that decreased stunting by almost 50% over a 15-20 years period: Peru, Kyrgyzstan, Nepal, Senegal, and Ethiopia. Results from Phase I suggested that stunting declines were driven by advances from both within and outside the health sector, including higher maternal education, improved household wealth, access to improved sanitation, and the scale-up of certain health and nutrition interventions.

Building on these findings, the second phase of the project aims to explore two additional *exemplar* countries, which have had an outsized reduction in stunting, along with three *counterfactual* countries, which have not managed to reduce national-level stunting despite economic growth and improvements in other sectors.

Uganda was chosen as a phase II *exemplar* country because of its considerable reduction in childhood stunting over the past 30 years. Stunting declined from 48% in 1988 to 29% in 2016, while GDP per capita (constant 2010 USD) increased from $377 to $957 over the same period **(Figure 1)**. Moreover, since the early 2000s, Uganda has experienced considerable poverty reduction; decreased maternal, newborn, and child mortality; increased adult/youth literacy and female empowerment; increased livestock and cereal production; improved access to maternal care; and widespread malaria-reduction strategies – all of which link to a multifactorial stunting reduction success story.

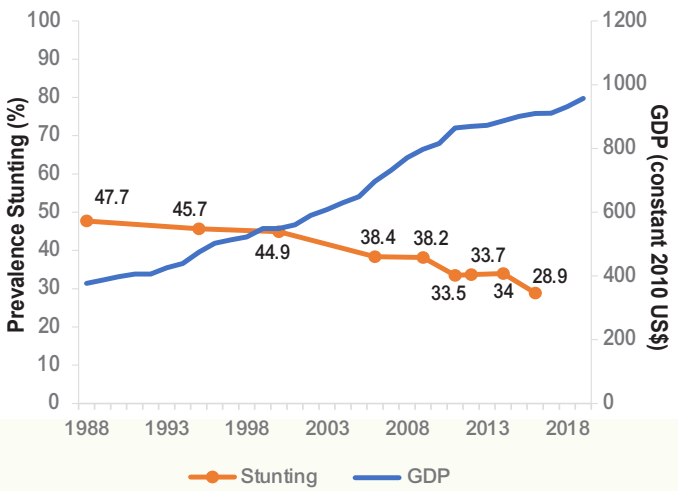

Figure 1: Trends in under-5 stunting prevalence and GDP per capita from 1988 to 2019.

To examine the national-, community-, household-, and individual-level factors that have driven stunting reduction in Uganda from 2000 to 2016, a mixed-methods study was conducted. A systematic review, descriptive and advanced quantitative analyses, qualitative research, a policy/program review, and a nutrition financing analysis were undertaken, and data was triangulated to inform study objectives. Key findings of the study are summarized in this brief.

Summary of Main Findings

- National stunting prevalence decreased by 16% points and mean height-for-age z-score (HAZ) improved by 0.55 standard deviations between 2000 and 2016; however, improvements were not consistent across Uganda's regions, with the Northern region experiencing the slowest gains (**Figure 2**). Furthermore, ***child stunting prevalence was consistently lower among the richest, most educated, and urban households.***

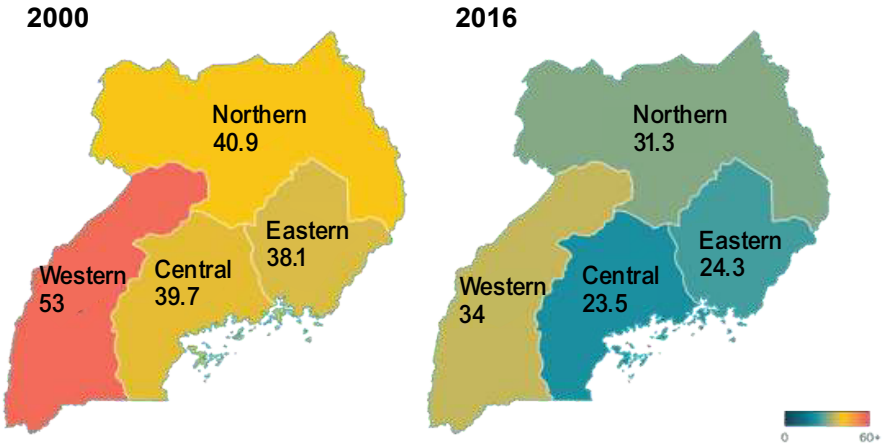

Figure 2: Regional under-5 stunting prevalence in 2000 versus 2016.

- The most important drivers of stunting decline **(Figure 3)** among children under-five were increased coverage of ***insecticide-treated bed nets***, improved ***maternal nutrition***, and ***improved maternal education***.

- Other important factors included: ***maternal and newborn care, paternal education,*** access to ***piped water***, increased ***household wealth***, reduced ***open defecation***, women's empowerment, reductions in ***diarrhea***, improved ***inter-pregnancy intervals***, and declines in ***adolescent births***.

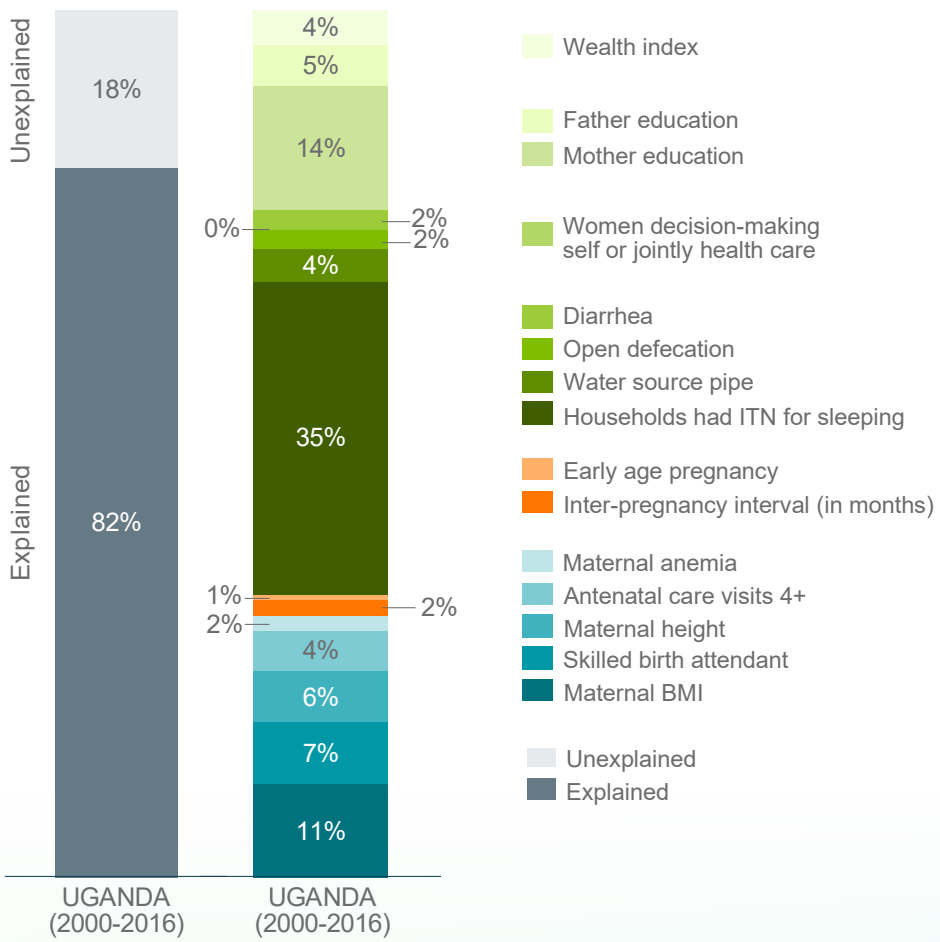

Figure 3: Decomposing predicted changes in height-for-age z-score (% contribution of determinant domains) for children under-5 for the period 2000-2016.

- Insecticide-treated bed net coverage, along with preventive and curative approaches in pregnancy, worked to reduce maternal malaria burden and subsequently ***improve HAZ at birth*** **(Figure 4).** Effects on stunting may have also been achieved through reduced malaria prevalence among children.

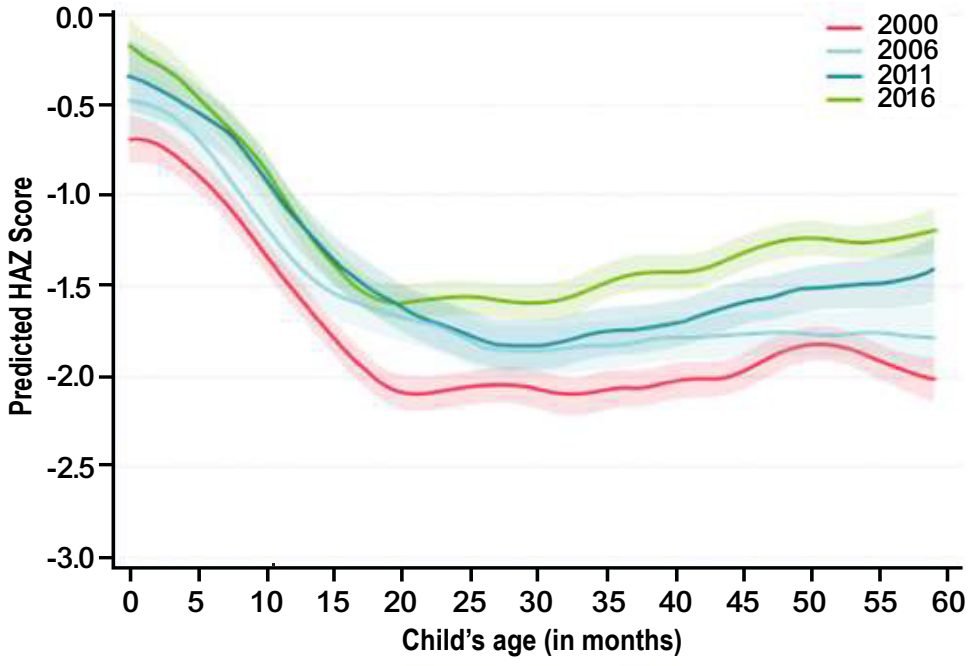

Figure 4: Mean height-for-age z-score by age (months), from 2000 to 2016.

- Continued strengthening of Uganda's health system through outreach by Village Health Teams (VHTs), community level behavior-change-communication strategies, and an increased number of health facilities improved ***access to quality health services and increased coverage of direct and indirect nutrition interventions.***
- Investments in expanded access to primary and secondary education, especially for girls, improved school attendance over the last several decades. This had ***downstream, positive effects on women's empowerment, employment opportunities, adolescent births, and the intergenerational transfer of malnutrition.***
- The ***agricultural sector has been a major driver of poverty reduction*** through employment opportunities, and many Ugandans rely on subsistence farming for household consumption. However, national investments in new technologies to improve productivity have been low, so the sector is stalling as land is used up and processes remain inefficient. Coupled with this, Uganda is ***prone to climate shocks*** such as droughts and floods which contribute to poor agricultural productivity and food insecurity.
- The 2011 Uganda Nutrition Action Plan was a critical multi-sectoral strategy that ***shifted nutrition out of health and mainstreamed it across related sectors.*** However, stakeholders have noted that enhanced oversight and coordination could help to translate policy into action at the local level.

Key Recommendations for Further Accelerating Stunting Reduction

- Strengthen strategies that deliberately target the poor, least educated, and rural populations, along with high-burden northern and western districts.
- Invest in new technologies and nutrition-sensitive innovations in the agriculture sector to improve productivity. For example, scaling-up biofortification of orange sweet potato would reach subsistence farmers and potentially improve vitamin A status among women and children. The average cost of this program would be $8.70 per child/woman[1], and $4-7 per DALY averted, underscoring a very cost-effective intervention by WHO standards[1].
- Develop expanded social protection schemes for vulnerable populations to manage the increasing impact of climate shocks and other humanitarian crises which can contribute to food insecurity.
- Continue to prioritize malaria-reduction strategies, including bed-net distribution campaigns and prevention/treatment approaches for mothers and children.
- Ensure that adolescent-friendly health services are available, and keep girls in school to further reduce adolescent pregnancies.
- Promote antenatal and postnatal care for mothers, including education around breastfeeding and complementary feeding practices. The unit cost of a community- and facility-delivered breastfeeding and complementary feeding promotion program in Uganda is estimated to be $6.90[1], and would avert 102,998 cases of childhood stunting annually[1].
- Harmonize federal-level coordination and regional-based programming for nutrition, through improved multi-sectoral planning, implementation, and monitoring and evaluation of nutrition actions.

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1 Shekar, M., Hyder, Z., Subandoro, A., Dayton Eberwein, J., Pereira, A., & Akuoku, J. K. (2016). *An Investment Framework for Nutrition in Uganda: Reducing Stunting and Other Forms of Child Malnutrition. World Bank.*

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The study was conducted by Makerere University School of Public Health in partnership with Centre for Global Child Health at The Hospital for Sick Children (SickKids), Canada