

The Cost of **HUNGER** **in UGANDA**



**Implications on
National
Development
and Prosperity**



Summary Report

This report on the Cost on the Cost of Hunger in Uganda was prepared within the framework of the Memorandum of Understanding between the UN Economic Commission for Africa (ECA) and the World Food Programme (WFP). At the continental level, the study was coordinated by Josué Dioné, Director of the Food Security and Sustainable Development Division at ECA, Steven Were Omamo and Abdoulaye Diop from the WFP Liaison Office to the African Union and United Nations Economic Commission for Africa, and Mustapha Sidiki Kaloko, Commissioner for Social Affairs at the African Union Commission (AUC).

The Ugandan Study was guided by a National Task Force comprising of the following: Dr. John Ssekamate, Head of Social Sector Planning (NPA), Dr. Robert Mwadime of FANTA 2, Dr. Elizabeth Madraa of GAIN, Peter Rukundo of Kyambogo University, Agnes Chandia Baku of the Ministry of Health, Susan Oketcho of the Ministry of Education and Sports, Alex Bambona of the Ministry of Agriculture, Animal Industry and Fisheries, Dr. Geoffrey Bisoborwa of the World Health Organisation, Beatrice Okello of the Food and Agriculture Organization of the United Nations

Julia Twagireyi and Geoffrey Ebong of World Food Programme

Special recognition has to be given to the National Implementation Team (NIT) in Uganda, which was responsible for collecting and processing data and presenting the final findings of the study. The NIT was coordinated by the National Planning Authority and led by Dr. John Ssekamate, Head of Social Sector Planning (NPA) with support from the Uganda Bureau of Statistics (UBOS). The following NIT members were also instrumental in the collection, processing and analysis of data: Lumala Patrick, Simon Sewakilyanga, Johnson Galande and Fiona Nattembo from UBOS; Martin Ahimbisibwe, Peace Nganwa and Nancy Adero from the World Food Programme; Twaha Rwegema from the Ministry of Health; Evelyn Nakawuki and Sarah Naharamba from the NPA; Frank Senabulya and Gordon Mukasa from the Ministry of Education, Boaz Musiimenta, Senior Policy Analyst from the Office of the Prime Minister (OPM); and finally Dr. Henry Wamani from the Makerere University School of Public Health.

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The design and implementation of the study was directed by a Steering Committee jointly led by Menghestab Haile (WFP), Maurice Tankou (ECA), Ademola Olajide and Janet Byaruhanga from the Health, Nutrition and Population Division of the Social Affairs Department at the AUC and Boitshepo Bibi Giyose from the New Partnership for Africa's Development (NEPAD). Further institutional leadership to this project was provided by Nkosazana Dlamini Zuma, Chairperson, AUC; Carlos Lopes, Executive Secretary, ECA; Ertharin Cousin, Executive Director, WFP; and Ibrahim Mayaki, CEO, NEPAD.

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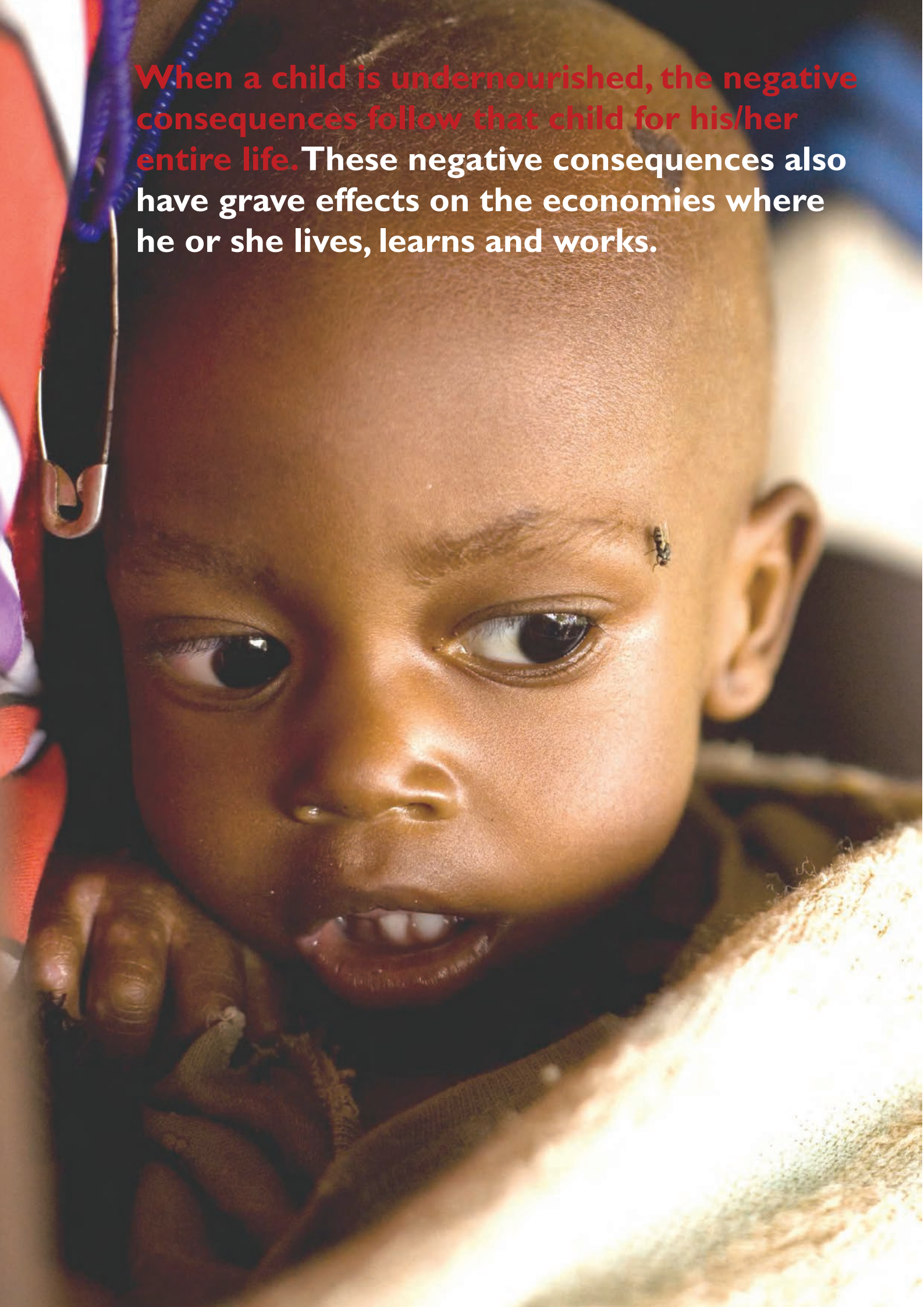
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When a child is undernourished, the negative consequences follow that child for his/her entire life. These negative consequences also have grave effects on the economies where he or she lives, learns and works.



The Cost of HUNGER in Uganda

**Implications on
National
Development
and Prosperity**

**Social and Economic Impacts
of Child Undernutrition
in Uganda**

Summary Report

10 Things Everyone Should Know about Child Under Nutrition in Uganda

1 Today, 1 out of every 3 children in Uganda are stunted.

2 As many as 82% of all cases of child undernutrition and its related pathologies go untreated.

3 44% of the health costs associated with undernutrition occur before the child turns 1 year-old.

4 15% of all child mortality cases in Uganda are associated with undernutrition.

5 7% of all repetitions in school are associated with stunting.

6 Stunted children have 1.2 years less in school education.

7 Child mortality associated with undernutrition has reduced Uganda's workforce by 4%.

8 54% of the adult population in Uganda suffered from stunting as children.

9 The annual costs associated with child undernutrition are estimated at 1.8 trillion UGX, which is equivalent to 5.6% of GDP.

10 Eliminating stunting in Uganda is a necessary step for sustained development in the country.

About the Study

The Cost of Hunger in Africa (COHA) Study is a multi-country study led by the African Union Commission (AUC) and NEPAD Planning and Coordinating Agency and supported by the Economic Commission for Africa (ECA) and the UN World Food Programme (WFP). COHA is a multi-country study aimed at estimating the economic and social impacts of child undernutrition in Africa.

In March 2012 the COHA Study was presented to African Ministers of Finance, Planning and Economic Development, who met in Addis Ababa, Ethiopia. The ministers issued Resolution 898 confirming the importance of the study and recommending it continue beyond the initial stage.

The COHA study is being carried out in twelve countries, namely: Botswana, Burkina Faso, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Malawi, Mauritania, Rwanda, Swaziland, and Uganda. The data in this document are the results collected from the COHA initiative in Uganda.

The COHA study in Uganda was led by National Planning Authority (NPA), with support from the Ugandan Bureau of Statistics (UBOS), the Ministry of Health, Ministry of Agriculture, Ministry of Education and Sports, the Office of the Prime Minister (OPM) and the World Food Programme (WFP), among others.

During the process, all data for the study were collected from national data sources including the Uganda National Household Survey (UNHS) 2009/2010, Population and Housing Census 2002, Demographic and Household Survey (DHS) 2011 and previous DHS studies published by UBOS, demographic data from the African Centre for Statistics (ACS) and UN Population Division as well as primary data collection.

The COHA model is used to estimate the additional cases of morbidity, mortality, school repetitions, school dropouts, and reduced physical capacity that can be directly associated to a person's undernutrition before the age of five, and the associated costs to an economy.



0-5 years

Undernourished children are at higher risk for anaemia, diarrhoea, and respiratory infections. These additional cases of illness are costly to the health system and families. Undernourished children are at higher risk of dying.



6-18 years

Stunted¹ children are at higher risk for repeating grades in school and at higher risk for dropping out of school. Additional instances of grade repetitions are costly to the education system and families.



15-64 years

If a child dropped out of school early and is working in non-manual labour, he/she may be less productive. If s/he is working in manual labour he/she has reduced physical capacity and may be less productive. People who are absent from the workforce due to undernutrition-related child mortalities represent lost economic productivity.

¹**Stunting:** height for age index, and it is a result of a failure to receive adequate nutrition over a long period of time or the effect of chronic illness.

When a child is undernourished, he or she will have an increased chance of experiencing specific health problems. For every additional case of child illness, both the health system and the families are faced with an additional economic cost.

Effects on Health
Results from Uganda



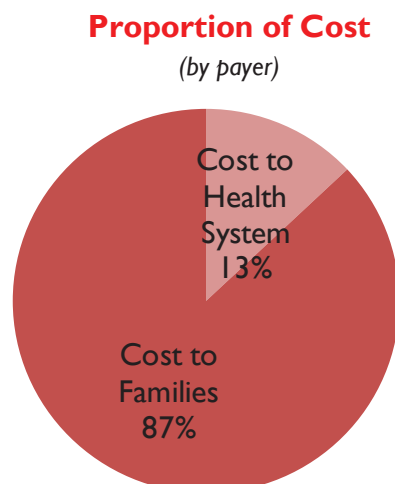
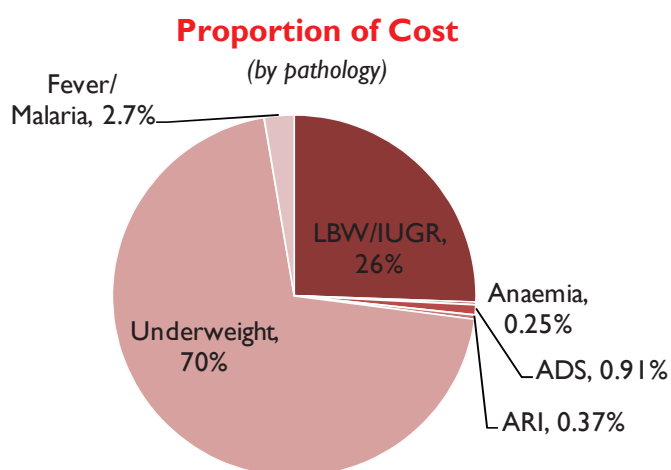
Results in Health

Research shows that undernourished children under five are more likely to experience cases of anaemia, acute diarrhoeal syndrome (ADS), acute respiratory infection (ARI), and in some cases, fever. For every additional case of child illness, both the health system and the families are faced with an additional economic cost. **"Incremental morbidity" are the additional number of episodes that affect underweight² children.**

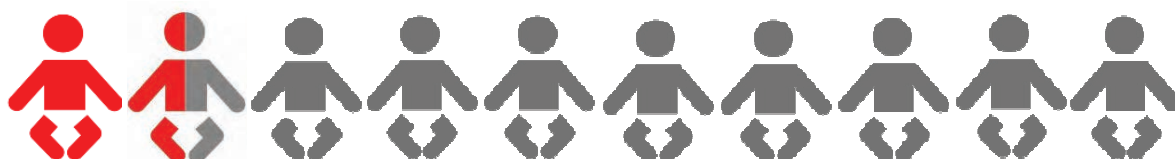
Health Cost of Undernutrition – Related Pathologies

(Cost in millions of UGX)

Pathology	Incremental Morbidity	Cost to Families	Cost to System	Total Cost
Underweight	975,450	344,447	25,029	369,477
Low Birth Weight/ Intrauterine Growth Restriction	82,635	94,802	39,540	134,342
Fever/Malaria	121,943	9,976	3,978	13,955
Acute Diarrhoeal Syndrome	289,994	4,686	92	4,778
Anaemia	55,923	1,189	124	1,313
Acute Respiratory Infections	27,462	1,007	964	1,971
Total	1,553,407	456,108	69,728	525,835



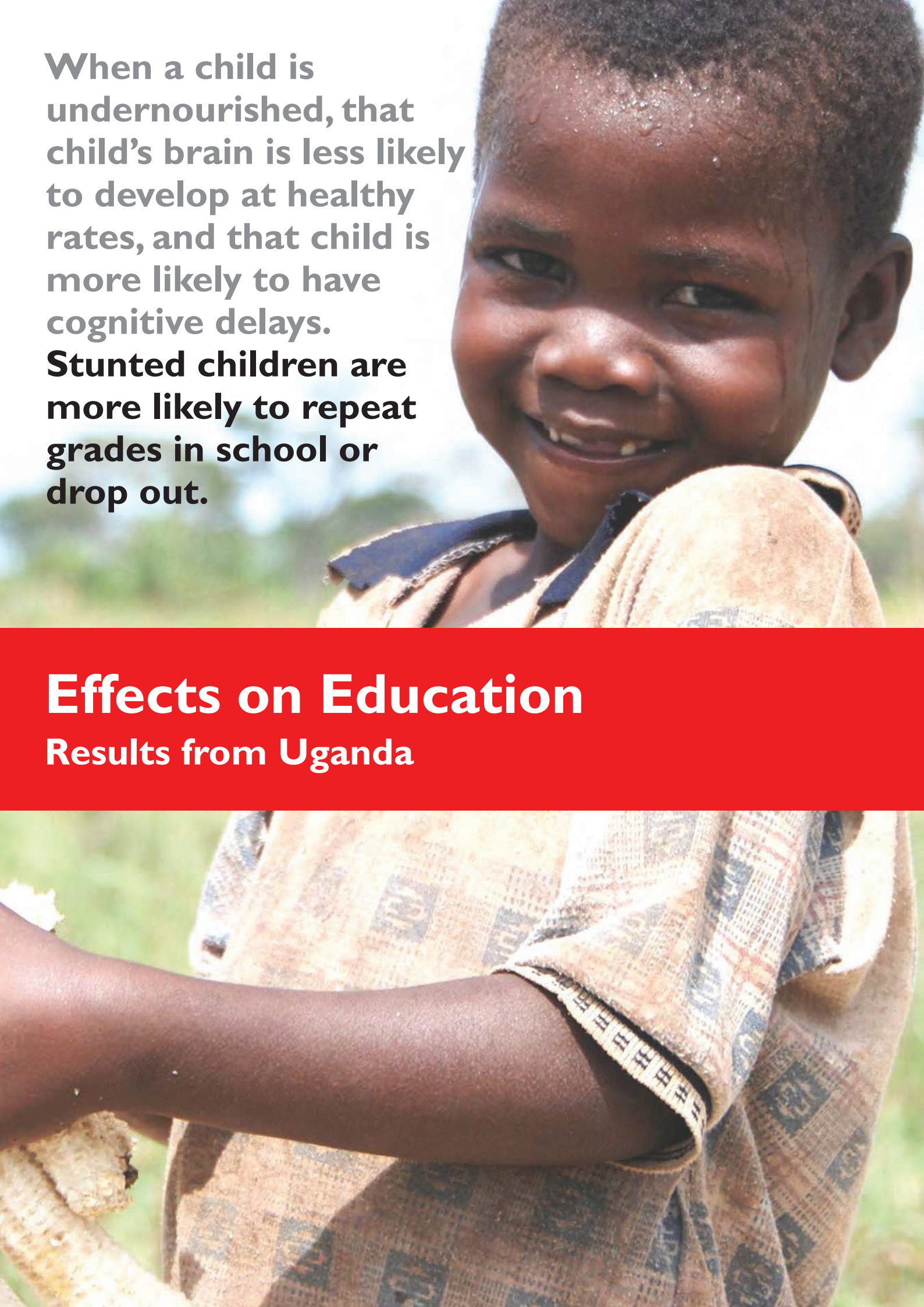
Children who are underweight are also more likely to die from illnesses related to undernutrition.



15% of child deaths are associated with undernutrition

There are an estimated **110,220** cases of child mortality associated with child undernutrition in the period from 2004 to 2009.

²**Underweight:** the weight for age index, and it is a composite index of stunting and wasting.

A close-up photograph of a young child with a stunted physique, smiling and holding a piece of bread. The child's face is the central focus, showing a joyful expression. The background is a soft-focus outdoor setting with greenery. The child is wearing a patterned, light-colored garment.

When a child is undernourished, that child's brain is less likely to develop at healthy rates, and that child is more likely to have cognitive delays.

Stunted children are more likely to repeat grades in school or drop out.

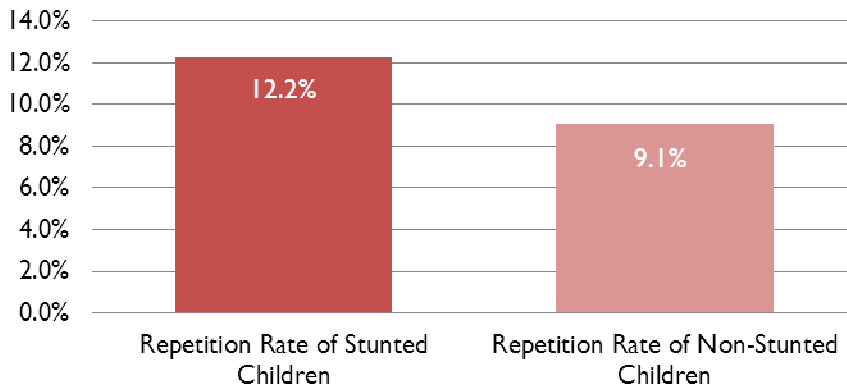
Effects on Education

Results from Uganda

Results in Education

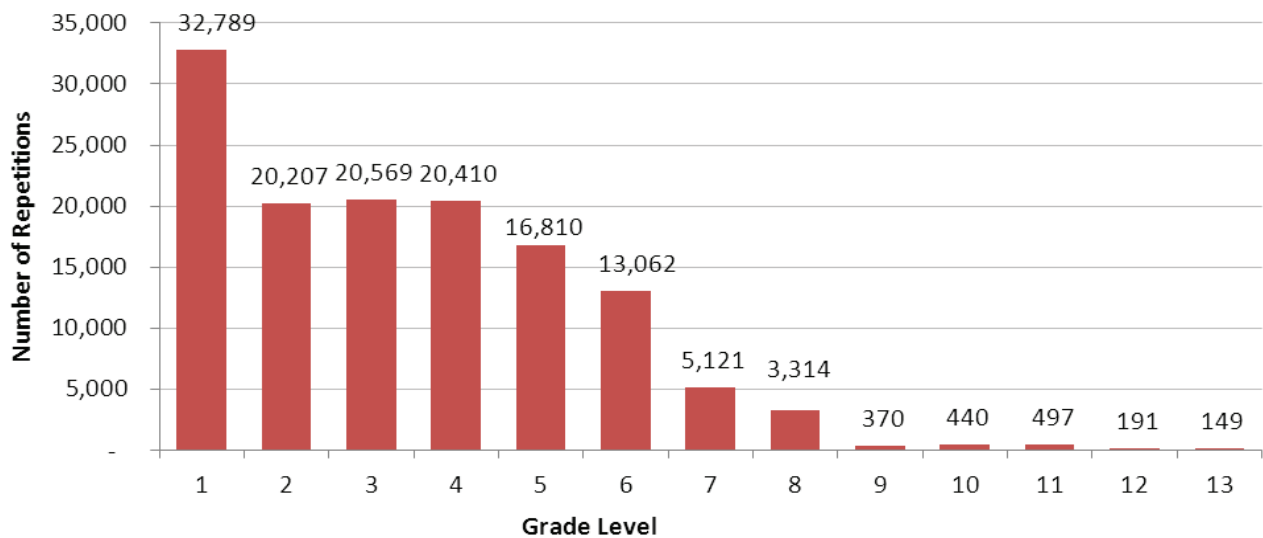
There is no single cause for repetition and dropout; however, there is substantive research that shows that students who were stunted before the age of five are more likely to underperform in school. As a result, undernourished children are faced with the challenge of competing favourably in school due to having lower cognitive and physical capacities than children who were able to stay healthy in the early stages of life.

Repetition Rate by Nutritional Status

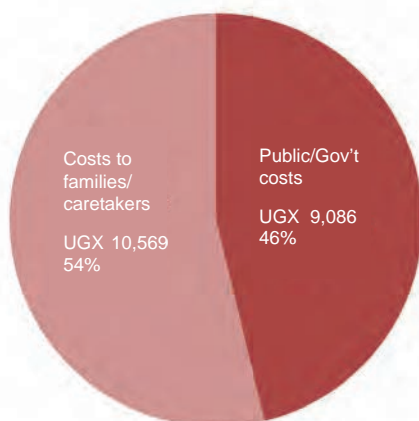


As a result, from the 1.8 million cases of grade repetition reported by the Ministry of Education in the year 2009, 133,000 (7.3% of all cases), are estimated to be associated with the higher risk of stunted children repeating grades. These children are currently generating an incremental cost to the education system, as they require twice as many resources to attend the same year. In addition, the caretakers also have to cater to their educational cost for an extra year.

Repetitions Associated with Stunting by Grade Level



Repetitions are costly both to the family of the student and the education system.



Both need to invest resources for an additional year of schooling. Costs for families include uniforms, text books and exercise books, and school fees. Economic costs have been calculated to estimate the cost of the additional years of schooling associated with under nutrition.

Cost of Grade Repetitions associated with stunting
19,655 million UGX

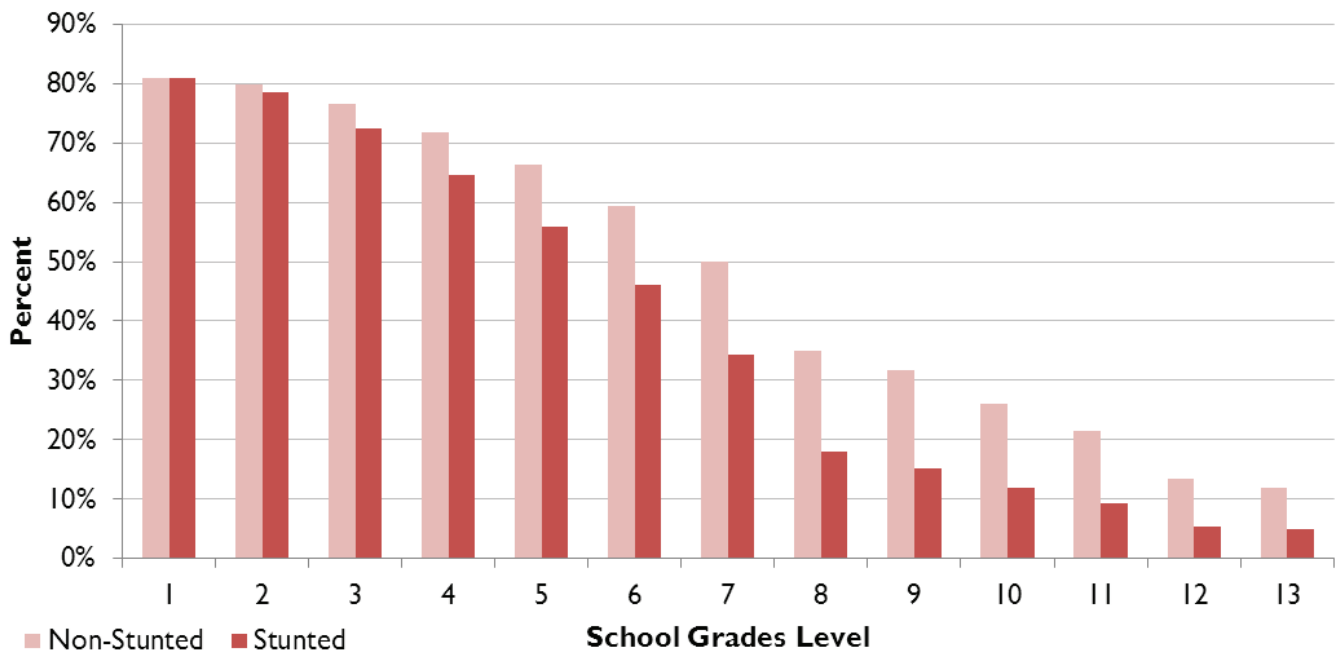
Total Public Investment in Education
1,079.63 billion UGX

The cost of repetitions is equivalent to **1.8% of the total national investment in Education**

Results in Education (continued)

Students who are stunted are also more likely to drop out of school. The data from Uganda illustrates that expected grade level achievement by a stunted person is lower than the expected schooling for a person who did not suffer from childhood growth retardation. This information, which is based on the data of the working age population (15 to 64), shows the degree to which stunting affects the income-earning capacity of an individual.

Average Grade Achievement of Working-Age Population by Nutritional Status

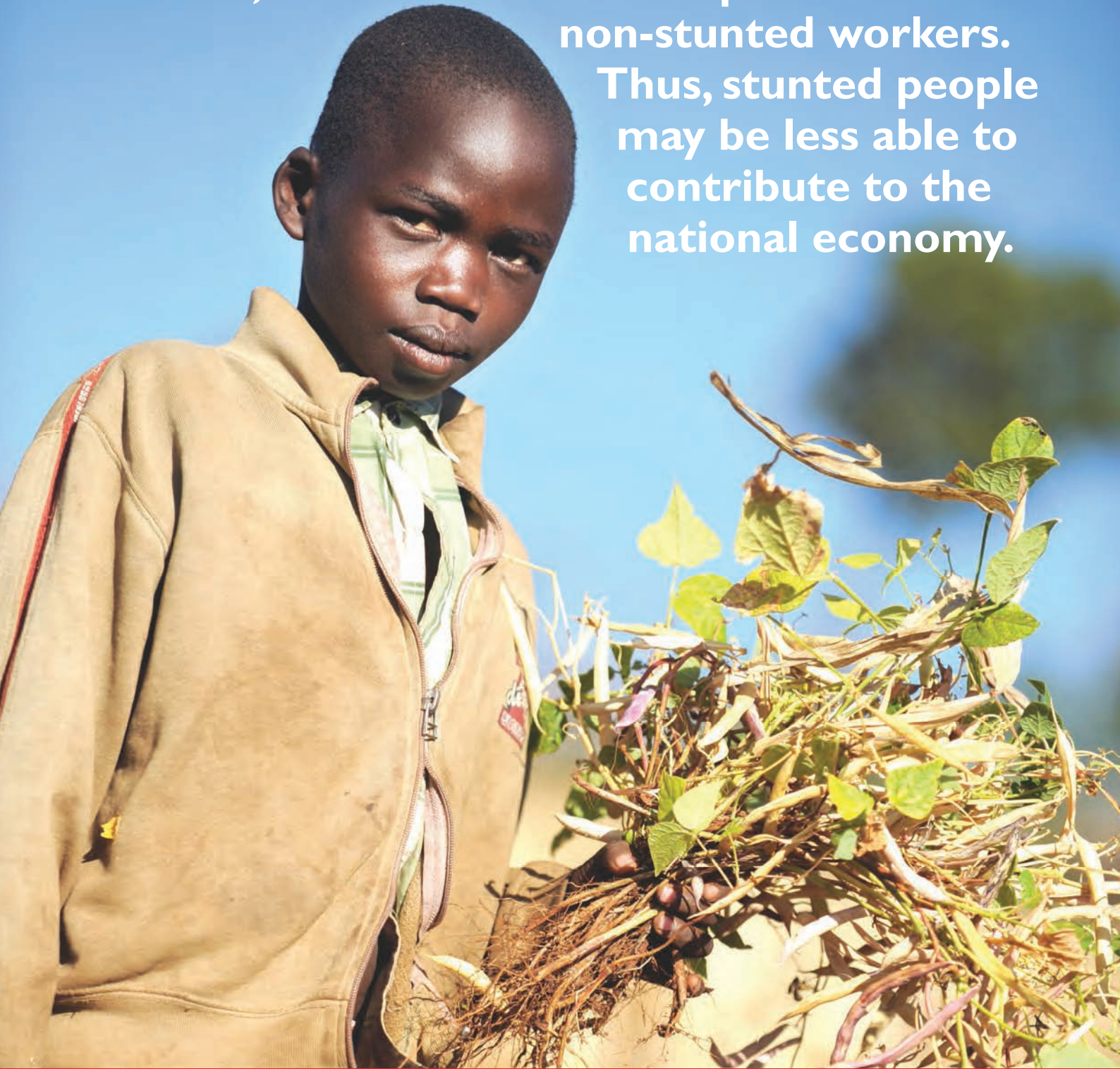


The economic impact of school dropout is not, however, incurred while a person is in school. Rather, the economic costs are incurred when the population is of working age, as people may be less productive, and earn less income, as a result of fewer years of schooling achieved. Thus, considerations of losses associated to lower schooling are described in the section that relates to labour productivity.



Theory indicates that when a person is stunted as a child, he or she will be less productive than non-stunted workers.

Thus, stunted people may be less able to contribute to the national economy.



Effects on Productivity

Results from Uganda

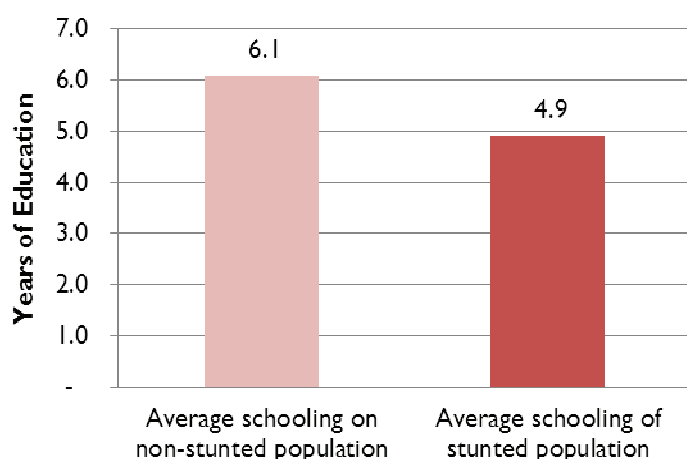


Results in Productivity

Child undernutrition affects human capital and productivity in several dimensions. Children who suffered from undernutrition are more likely to achieve lower educational levels than healthy children. The low education levels attained, often makes them less qualified for work, thus reducing their income-earning potential for non-manual work. Adults who suffered from stunting as children tended to have less lean body mass and are therefore more likely to be less productive in manual intensive activities than those who were never affected by growth retardation. Moreover, the population lost in a country due to child mortality hinders economic growth, as they could have been healthy productive members of society.



Average Schooling by Nutritional Status



The Cost of Hunger in Africa model analyses the differential impact of undernutrition on a person's productivity based on the type of labour. For non-manual activities, the analysis considers the consequences of lower schooling levels on income earning capacity in the labour market. In the case of manual and manual intensive activities, the analysis is based on the average productivity loss due to lower physical capacity, and not to the educational level achieved.

For activities that are not manual intensive, in which 12% of the population in Uganda is engaged, the model generates an estimation of differential income, per each grade of school and for each age group, based on the nutritional situation of the population. In the case of

Uganda, in which the stunted population has on average, 1.2 years less of education, the economic loss in non-manual activities is estimated at **241 billion UGX, equivalent to 0.7% of the GDP in 2009**.

On the other hand, for manual intensive activities, where 88% of Ugandans are currently engaged, the model estimates the economic consequences based on the reduced physical capacity of a stunted person compared to a person who was never stunted. The analysis is carried out by applying a differential risk factor, to the current earnings of the population by the different age groups. As a result, the model estimates lower productive capacity of this stunted population working in manual activities at **417 billion UGX, which is equivalent to 1.28% of GDP**.

Age in 2009	Population working in manual labour who were stunted as children (in thousands)	Loss in productivity due to stunting (In millions of UGX)
15-24	360	51,549
25-34	301	60,246
35-44	174	59,834
45-54	81	56,046
55-64	30	13,389
Total	945.6	241,064
% GDP		0.7%

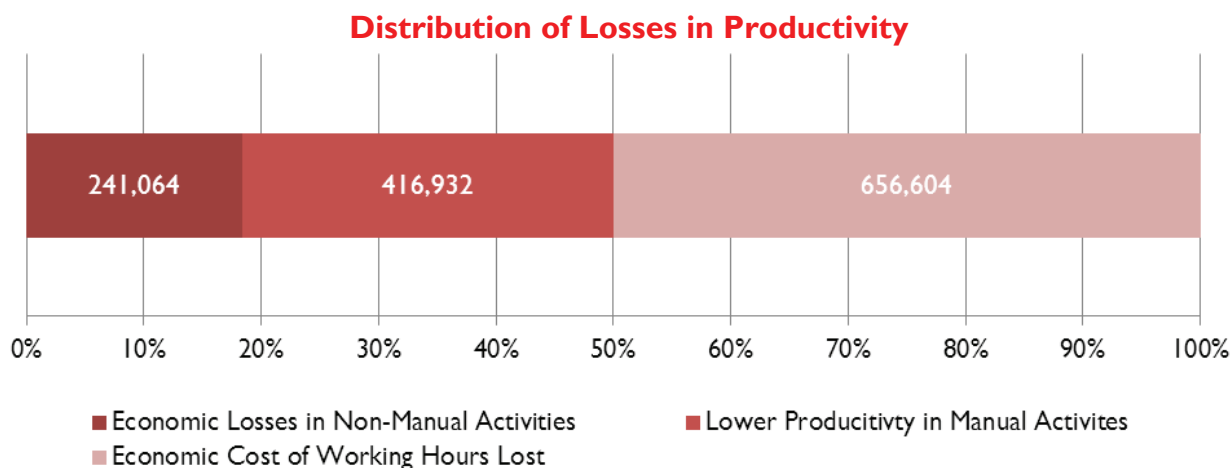
Undernourished children have a higher risk of dying compared to children who are not underweight.

As such, the COHA model estimates the proportion of child mortalities that are associated to undernutrition. Further, the model estimates those mortalities which would have been of working age (15-64) today, but are absent from the workforce. The model estimates that the 567,000 people of working age population that would be part of the economy in 2009 could have increased national productivity in excess of 943 million working hours.

Considering the productive levels of the population, by their age and sector of labour, the model estimated that in 2009, the economic losses, as measured by working hours lost due to undernutrition-related child mortality amounted to 656 billion shillings, which represented 2% of the country's GDP for 2009.

Total losses in productivity for 2009 are estimated at approximately 1.2 trillion UGX, which is equivalent to 3.91% of Uganda's GDP.

The figure below, illustrates the distribution of losses. The largest share of productivity loss is due to the working hours lost from individuals who died due to undernutrition. Reduced productivity in manual activities represents 29% of the total loss, as there is a large proportion of the population in Uganda engaged in manual activities. For non-manual activities, the loss seems relatively low, although the per capita losses in this sector are higher than the losses in manual activities.

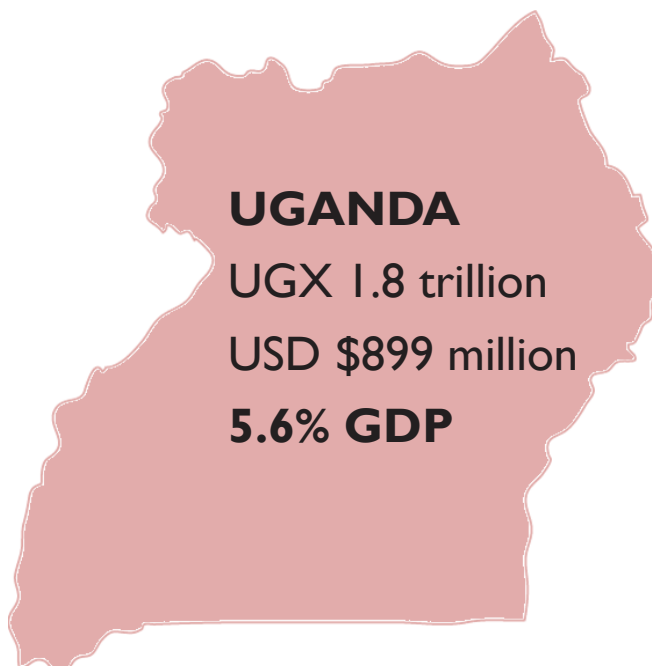




Total Costs

Results from Uganda

Total losses associated with child undernutrition are estimated at 1.8 trillion UGX in the year 2009. This is equivalent 5.6% of GDP of that year.



Scenarios for Improved Nutrition

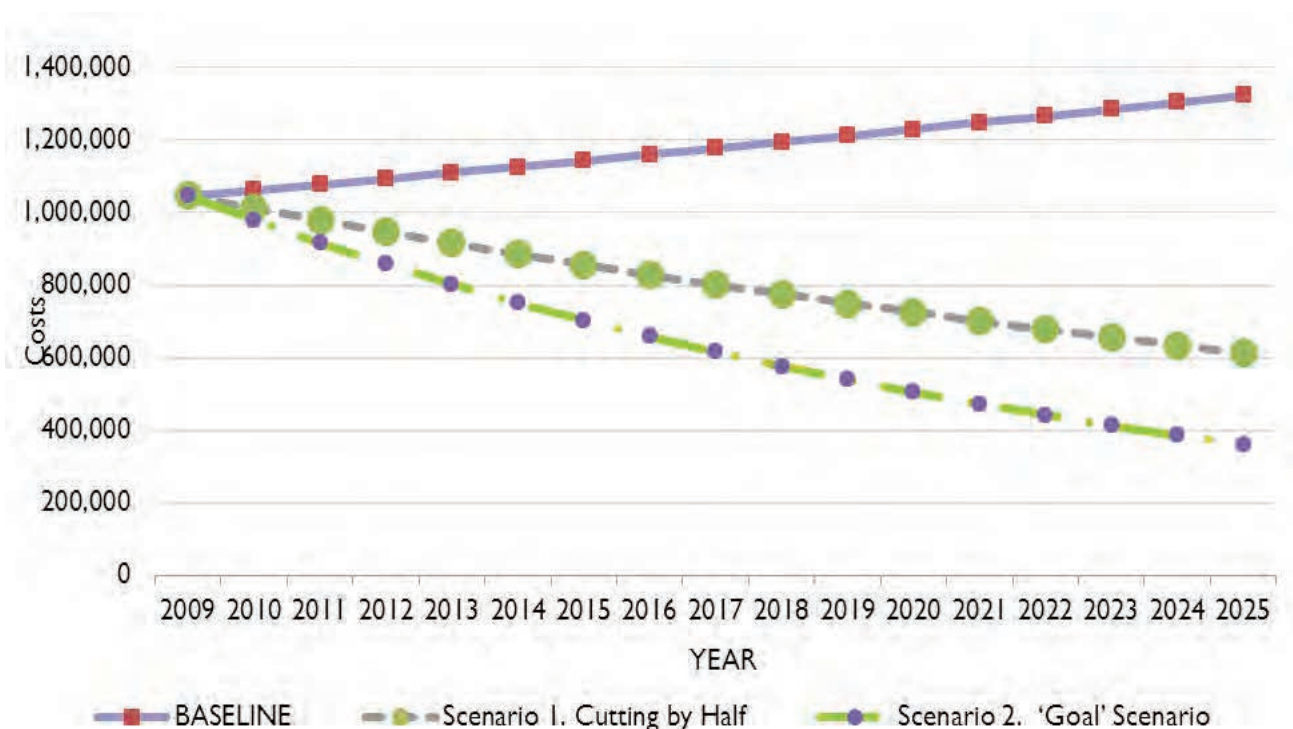
The previous chapters showed the social and economic costs that affected Uganda in 2009 due to high historical trends of child undernutrition. Most of these costs are already cemented in the society and policies must be put in place to improve the lives of those already affected by childhood undernutrition. Nevertheless, there is still room to prevent these costs in the future. Currently, one out of every 3 children under the age of five in Uganda is stunted.

A key element of discussion are the potential economic savings that could be achieved in each context with a firm reduction of the prevalence of stunting. In this sense, the model is able to generate a baseline for various scenarios, based on nutritional goals established in each country. For this initial analysis, two different change scenarios are being proposed.

- **Baseline Scenario: The Cost of Inaction. Progress in reduction of stunting and underweight child stops.** In this scenario, the progress of reduction of the prevalence of undernutrition stops at the level achieved in 2009. Although highly unlikely, it serves as a basis for estimating the saving for scenarios of change.
- **Scenario #1: Cutting by Half the Prevalence of Child Undernutrition by 2025.** In this scenario, the prevalence of underweight and stunted children would be reduced to half of the 2009 values. In the case of Uganda this would mean a constant reduction of 1.11% points annually in the stunting rate from 35.5% (estimate for 2009) to 17.8% in 2025. With the right combination of proven interventions, this scenario would be achievable, as the average rate of reduction for stunting between 2001 and 2011 was estimated at 1.14%, which is higher than the progress rate required in achieving this scenario. Nevertheless, for the period 2006-2011, a minor slowdown in the reduction rate (1.06%) was registered, which appears to indicate that stronger investments are required to continue the downward trend.
- **Scenario #2: The 'Goal' Scenario. Reduce stunting to 10 percent and underweight children to 5 percent, by 2025.** In this scenario, the prevalence of stunted children would be reduced to 10% and the prevalence of underweight children under the age of five, to 5%. This Goal Scenario, would require a true call for action at country level and efficient multisectoral response. The progress rate required to reach this scenario would be 1.6% annual reduction for a period of 16 years, from 2009 to 2025.

The progressive reduction of child undernutrition generates a similar reduction in the cost associated with it. The distances between the trend lines would indicate the savings that would be achieved on each scenario.

Trends of Estimated Costs of Child Undernutrition



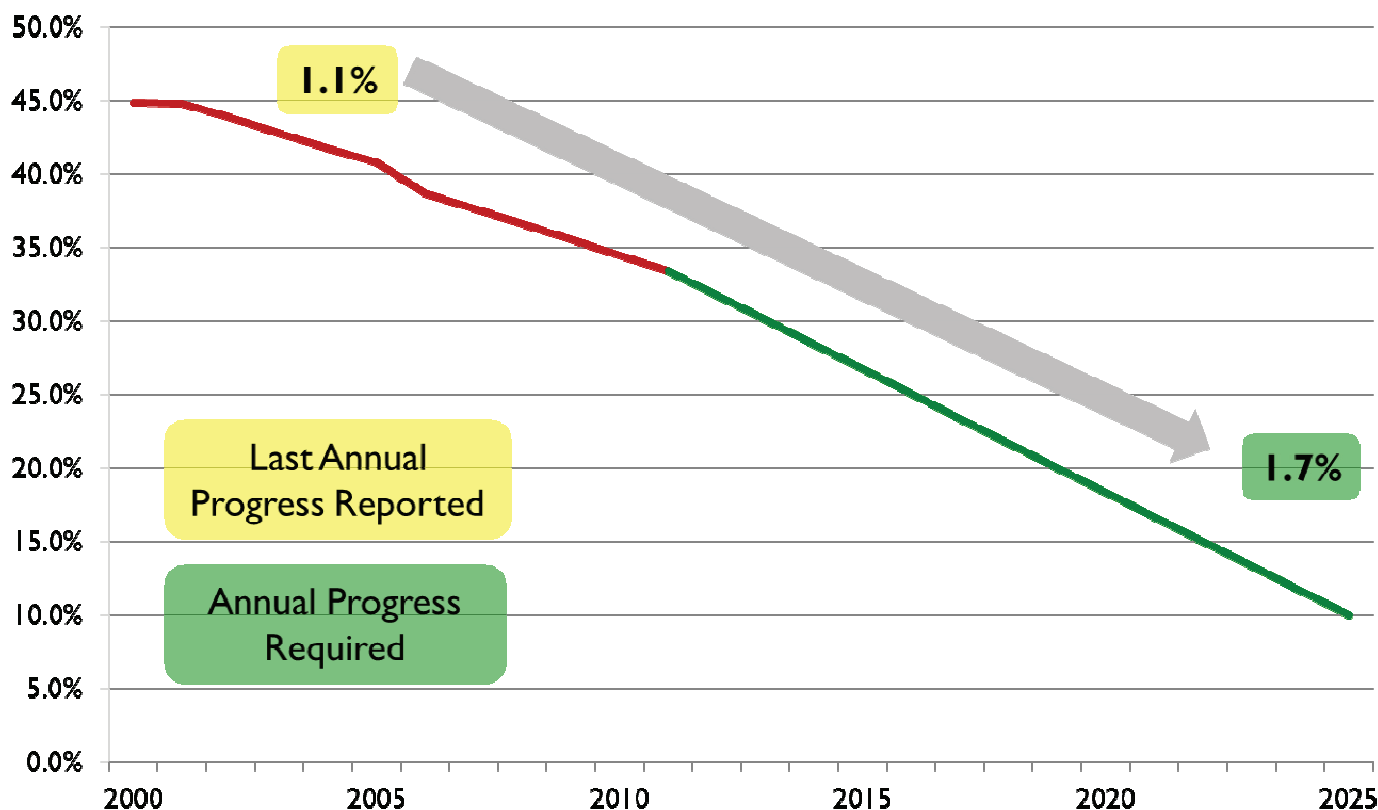
Scenarios for Improved Nutrition

The potential economic benefits of reducing undernutrition are a key element in making the investment case for nutrition investments. The reduction in clinical cases for the health system, grade repetition, improvements in educational performance and physical capacity are elements that have a direct contribution to national productivity.

	Halving Child Stunting	Reaching 10 % & 5 % by 2025
Required progress per year	1.1%	1.7%
Average Annual Savings (millions \$US)	1,413	2,103

In order to make the goal scenario achievable, more effort must be made at national level. The following graph illustrates the progress rate required in the reduction of stunting to meet the 10 percent stunting and 5 percent underweight targets.

Current and Required Progress to Achieve Goal Scenario





Conclusions

Child Undernutrition: Implications for Uganda's Social and Economic Development

The Cost of Hunger in Africa (COHA) Study presents an opportunity to better understand the role that child nutrition can play as a catalyst for social and economic transformation, and human development. This report marks an important step forward for Uganda, serving as a gateway for policy-makers to understand the socio-economic consequences of child undernutrition on Uganda's economy and population.

The results of the study strongly suggest that, in order for Uganda to achieve sustainable human and economic growth, special attention must be given to addressing nutrition in the early stages of an individual's life. The results of the study are supported by a nationally representative evidence-base, and a model of analysis specially adapted for the African context. The model uses nationally collected data to estimate the additional costs in health, education and productivity that are incurred as a result of child undernutrition. This study further quantifies the potential gains of addressing child undernutrition as a priority. As a result of this study, stakeholders now not only have the ethical imperative to address child nutrition, but a strong economic rationale to position nutrition at the centre of Uganda's development agenda.

The study estimates that child undernutrition generates health costs equivalent to 11% of the total public budget allocated to health. These costs are due to episodes directly associated with the incremental quantity and intensity of illnesses that affect underweight children and the protocols necessary for their treatment. It is also important to note that only 1 out of every 5 children is estimated to be receiving proper health attention. As the health coverage expands to rural areas, there will be an increase of people seeking medical attention; this can potentially affect the efficiency of the system to provide proper care services. This study illustrates that a reduction of child undernutrition could facilitate the effectiveness of this expansion by reducing the incremental burden generated by the health requirements of underweight children.

Further, the study estimates that 15% of all cases of child mortality are associated with the higher risk of undernutrition. Hence, a preventive approach to undernutrition can help reduce this incremental burden to the public sector, and also reduce the costs that are currently being covered by caretakers and families.

Increasing the educational level of the population, and maximizing the productive capacity of the population dividend, is a key element to increase competitiveness and innovation. This represents a particular opportunity in Uganda where the population under 15 years is estimated to be 48% of the total population. These children and youth must be equipped with the skills necessary for competitive labour. Thus, the underlying causes for low school performance and early desertion must be addressed. As there is no single cause for this phenomenon, a comprehensive strategy that considers improving in the quality of education and the conditions required for school attendance must be put in place. This study demonstrates that stunting is one barrier to attendance and retention, and to effectively elevate the educational levels and improve individuals' labour opportunities in the future, this barrier must be removed.

The study estimated that children who were stunted experienced a 3.1% higher repetition rate in school. As a result, 7% of all grade repetitions in school were associated to the higher incidence of repetition that is experienced by stunted children. 96% of these grade repetitions occur in primary school, suggesting that a reduction in the stunting prevalence could also support an improvement in schooling results, as it would reduce preventable burdens to the education system.

On the continent, more than half of the population is expected to live in cities by 2050. An important component to prepare for this shift is to ensure that the workforce is ready to make a transition towards a more skilled labour, and economies are able to produce new jobs to reduce youth unemployment. By preventing child stunting thus avoiding the associated loss in physical and cognitive capacity that hinders individual productivity, people can be provided with a more equal opportunity for success.

The study estimates that 54% of the working age population in Uganda is currently stunted. This population has had lower schooling levels than those who did not experience the average loss of 1.2 years in school. As the country continues to urbanize, and an increasing number of people participate in skilled employment, this loss in human capital will be reflected in a reduced productive capacity of the population. Thus, it may be a particularly crucial time to address child undernutrition and prepare future youth for better employment by prioritizing the reduction of stunting in Uganda's transformation agenda.

Conclusions (continued)

The COHA model also provides an important prospective analysis that sheds light on the potential economic benefits to be generated by a reduction in the prevalence of child undernutrition. The model estimates that in Uganda, a **reduction of the prevalence to half of the current levels of child undernutrition by the year 2025 can generate annual average savings of UGX 174 billion (\$US86 million). An additional scenario shows that a reduction to 10% stunting and 5% underweight for that same period could yield annual average savings of UGX 260 billion (\$US128 million).** This economic benefit that would result from a decrease in morbidities, lower repetition rates and an increase in manual and non-manual productivity, presents an important economic argument for the incremental investments in child nutrition.

This study is also an important example of how **South-South collaboration** can work to implement cost effective activities in development and knowledge sharing. Uganda's participation as one of the pilot countries of the study, and its feedback in challenges faced in collecting the data at national level was an important element in adapting the COHA methodology to Africa. The contributions of the Uganda NIT will serve to facilitate the expansion of this tool in the continent.

Lastly, this study illustrates the valuable role that **data and government-endorsed research can play in shedding light on pertinent issues on the continent.** This study will help the country engage within global nutrition movements such as the Scaling Up Nutrition Initiative as programmes and interventions are put in place to address stunting as a national priority.



Recommendations

This study presents some key findings of the Cost of Hunger in Uganda, as well as, both challenges and opportunities regarding the reduction of child undernutrition to the country.

Recommendations for on-going interventions:

The Government of Uganda and its development partners have a series of activities in place, which in most cases, are demonstrating results in the reduction of child undernutrition. Nevertheless, an improvement in the reduction rate will require a scaling-up in current interventions that have proved effective. Some of the actions recommended by the NIT include the following.

- **Promotion of access to and utilization of essential services.** The Government of Uganda has put in place maternal child health services such as Pre Natal Care (PNC), Ante Natal Care (ANC), and young child health services provided through the health delivery system. These are directed at ensuring healthy pregnancies and good birth outcomes are achieved while promoting positive health seeking behaviour. However, the coverage and utilization is still remain limited. To increase the rate of reduction of child stunting in Uganda, **it is recommended that the health system outreach services coupled with logistics and supplies management be strengthened and supported to facilitate access and promotion of the utilization of services at community and household level.**
- **Scaling up of food fortification for school going children and children above 6 months.** In Uganda, consumption of balanced diets is often limited to the affluent population group mostly located in the urban areas. The bigger proportion of Uganda's population is located in the rural areas. While access to food may not always be a problem, food diversity is limited and food consumed depends on the region. Worse still, the complementary foods used for children above six months of age are often starch-based and of low nutrient value. Children in primary school face similar challenges of limited diversity. Given the strong link between micronutrient deficiencies and stunting, **it is recommended that flour fortification is scaled up to facilitate mandatory use of fortified food in school meals and ensure increased nutrient intake for school going children.**
- **Promotion of the consumption of fortified complementary food especially in populations most affected by micronutrient deficiencies and stunting.** This could include exploring home fortification using Micronutrient powders as a strategy for improving the quality of complementary food for children above 6 months of age.
- **Promotion of Public-Private Partnerships.** Encouraging public-private partnerships can serve as a way to engage the private sector (especially in the food production and processing industry) to incorporate the health and nutritional needs of the population in their products, promotions and distribution mechanisms. This might also assist in addressing the constraints (such as raw material imports, taxes on processing technology equipment, fortificants, etc) of the private sector related to coming up with the right products.
- **Increase efforts and explore further opportunities in bio-fortification.** Given that most rural communities practice subsistence farming and may not be able to access fortified food products due to either remoteness or affordability, biofortification of common staples such as beans, maize, sweet potatoes could be promoted through the Ministry of Agriculture and other existing mechanisms in order to allow households practicing subsistence farming access to improved food commodities from their own production.
- **Promotion of awareness of the entire population.** The government supports awareness activities through various sectors and mechanisms. Nutrition awareness remains limited across the whole population including the educated. The demonstrated impact of nutritional deficiencies in most parts of the country requires enhancing the awareness on the importance of nutrition especially in the first 1000 days of a child's life and the school-going age group. This would facilitate nutritional and growth catch-up during the early childhood (from two to five years).
- **An important mechanism to help raise this awareness is to increase nutrition sensitization actions in existing sector activities.** These may include developing a nutrition hand guide that facilitates not only the literate but also educators on the locally available food commodities that could be used, blended, processed to develop a nutritionally enriched food that can be used by the various vulnerable groups. The last version of such a guide for Uganda was last updated in 1969. An updated version the takes into account foods that have since been introduced into country (as imports or locally grown) could be considered.

Recommendations (continued)

Recommendations for addressing bottlenecks:

Addressing the bottlenecks that undermine the efficiency of existing interventions. In order for nutrition intervention to maximize their results, certain elements, that are not directly within the scope of the activities themselves must be addressed, in order to achieve a sustained reduction in child undernutrition.

Coordination of multi-sectoral nutrition interventions for common objective of addressing undernutrition:

- A clear recommendation coming out of this study is that the **Government of Uganda needs to review its national strategies to ensure that the stunting is an outcome indicator of the country's social and economic development framework.** Chronic child undernutrition can no longer be considered a sectoral issue, as both its causes and solutions are linked to social policies across numerous sectors. As such, stunting reduction will require interventions from the health, education, social protection, and social infrastructure sectors and serve as an effective indicator of success in larger social programs.
- **Support the Office of the Prime Minister UNAP secretariat** in their coordination role of ensuring the different sectors play their role in contributing to the implementation of the national nutrition plan is critical.
- **From the policy perspective,** an enabling policy environment to facilitate planning and implementation of the above recommendations will be much needed, for example mandatory large scale industrial fortification of common staples widely consumed such as wheat, maize and vegetable oil, mandatory use of fortified maize flour and vegetable oil in school meals.
- This study has allowed participating countries to re-evaluate what are considered to be “acceptable” levels of stunting, and as such **recommends that aggressive targets are set in Uganda for the reduction of stunting and establishing a goal of 10% reduction.**
- To have a decisive impact on improving child nutrition, the multi sectoral nutrition framework (UNAP) currently in place needs strong political commitment and allocation of adequate resources for its implementation.
- It is of paramount importance that enhanced national capacity to address undernutrition is coupled with effective monitoring and evaluation systems. Currently, assessments on the prevalence of child under nutrition are carried-out every 3 to 5 years. **In order to accurately measure the short term results of stunting prevention, a more systematic approach with shorter assessment period of every 2 years is recommended.** As the focus on the prevention of child undernutrition should target children under 2 years of age, these results will provide information to policy makers and practitioners on the results being achieved in the implementation of social protection and nutrition programmes.
- Understanding of the determinants of child undernutrition in each context is also very important and as an initial step, it is **recommended that the assessment of child nutrition in Uganda includes information that relates the nutritional status of the children to the livelihoods and economic activities of the households.** This information can be used to inform programme design to ensure that interventions effectively reach vulnerable families with appropriate incentives and innovative approaches within social protection schemes.

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