



SUMMARY REPORT

Social and Economic Impact of Child Undernutrition on Ghana's Long-Term Development



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Foreword

The Cost of Hunger in Africa (COHA): The Ghana Report

Over the past two decades, Ghana has made some progress in improving the nutritional status of children, particularly those under 5 years of age, recording a substantial reduction in the prevalence of stunting, wasting and underweight among these children. According to the most recent edition of the Ghana Multiple Indicator Cluster Survey (MICS), in 2011, stunting among children 5 years and younger was 23 percent, down from 30 percent in 1988.

Also known as “chronic malnutrition,” stunting is a condition where children under 5 years old are assessed to be too short for their age. Wasting, or “acute malnutrition,” which carries an immediate increased risk of morbidity (disease) or mortality (death), refers to low weight-for-height, where a child is deemed too thin for his or her height. In 2011, about 6 percent of children were found to be wasting, an improvement on the 1988 figure of 8 percent. Underweight, which reflects a combination of “chronic and acute malnutrition,” refers to low weight-for-age, a situation where a child can be either too thin or short for his or her age. About 13 percent of children under 5 years in Ghana were underweight in 2011, a substantial reduction from the 31 percent recorded in 1988. Despite this overall progress, child undernutrition remains unacceptably high in Ghana.

In March 2012, the African Union Commission (AUC), supported by the Economic Commission for Africa and the World Food Programme, launched The Cost of Hunger in Africa (COHA) to assist member states in establishing the social and economic impact of undernutrition on children and by extension national development. The study sought to estimate in a given year the additional cases of morbidity, mortality, school repetition, drop-out rates, and reduced physical capacity that could be associated with a person’s undernutrition status before age 5.

The findings for Ghana, based on data provided by Ghana’s COHA National Implementation Team, are discussed in this report, *The Cost of Hunger in Africa: Implications for Ghana’s Long-term National Development*. The report underscores the importance of nutrition in human development and by extension the socio-economic transformation of a country. In particular, it demonstrates that for children, especially those from poor households, undernourishment has adverse implications for school performance, and for workers it reduces productivity and ultimately earnings and household welfare. The combined effect of these consequences is a cycle of poverty that undermines national and continental development efforts.

On the basis of these findings, the Ghana report estimated the associated cost to the domestic economy of malnutrition through health, education and labour in a single year. It found that in 2012, an estimated GH¢ 4.6 billion (or US\$2.6 billion at the time) was lost to the economy as a result of child undernutrition. The report found that positioning nutrition interventions as a top priority for poverty reduction and broad-based development is often difficult, partly because of lack of data on their short- and long-term returns. Additionally, nutrition is too often regarded narrowly as “a health issue” only, when in fact it has broader social and economic implications.


The Report makes recommendations for addressing these gaps.

It is hoped that the COHA-Ghana Report would help raise awareness among policy makers and development practitioners about the necessity of prioritising nutrition in national development planning and allocating the necessary resources to it as part of a broader strategy for pursuing social and economic transformation in Ghana.

Dr. Nii Moi Thompson



Director-General
National Development Planning Commission



“ 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 s/he lives, learns and works.”

Acknowledgement

This document was prepared within the framework of the Memorandum of Understanding between the UN Economic Commission for Africa (ECA) and the World Food Programme (WFP). “The Cost of Hunger in Africa: The Economic and Social Impact of Child Undernutrition” has been made possible by the institutional leadership provided to this project by H.E Dr Nkosazana Dlamini Zuma, Chairperson, African Union Commission (AUC); H.E Dr Carlos Lopes, Executive Secretary, ECA; and H.E Mrs Ertharin Cousin, Executive Director, WFP. The implementation of the agreement was coordinated by H.E Dr Mustapha Sidiki Kaloko, Commissioner for Social Affairs at the AUC; Mr Thomas Yanga, Director of the WFP Africa Office; and Prof. Takyiwaa Manuh, Director of the Social Development and Policy Division at ECA. The design and implementation of the study was directed by a Steering Committee jointly led by Mrs Wanja Kaaria of the WFP Africa Office and Dr Janet Byaruhanga of the Health, Nutrition and Population Division of the Social Affairs Department at the AUC.

Special recognition goes to the National Implementation Team (NIT) in Ghana which was responsible for collecting, processing and presenting results. The team was guided by the National Development Planning Commission and was composed of the Ministry of Health, Ghana Health Service, Ghana Statistical Service, Ministry of Finance, Ministry of Food and Agriculture, Ministry of Education, Ghana Education Service, Ministry of Gender, Children and Social Protection, and Ministry of Employment and Labour Relations. The Scaling Up Nutrition (SUN) team, the Renewed Efforts against Child Hunger (REACH) team and UN agencies in Ghana provided support to the study. Non-governmental organisations such as Care International and Plan Ghana contributed as NIT members. Acknowledgment also goes to development partners in Ghana, various academics, Parliamentary Select Committees and nutrition champions. Thanks also go to the management of WFP Ghana for the immense support without which this study would not have been possible.

The regional support team was led by Dr Carlos Acosta Bermúdez and Mr Kalkidan Assefa, aided by Dr Jack Jones Zulu, Mr Iris Macculi, Mrs Melat Getachew with contributions from Mr Adrian Gauci and Mrs Semia Guermas Tapia all of ECA; Mrs Priscilla Wanjiru of WFP, and additional technical guidance from Mr Rodrigo Martínez and Mrs Amalia Palma of the Social Development Division of the Economic Commission for Latin America and the Caribbean (ECLAC).

10 Things Everyone Should Know about Child Nutrition in Ghana

- 1** Stunting has declined from 23% to 19% among children in Ghana
- 2** Only 1 child out of three suffering from undernutrition received adequate medical attention
- 3** Most of the health costs associated with undernutrition occur before a child turns 1 year old
- 4** 24% of all child mortality cases in Ghana are associated with undernutrition
- 5** 10.5% of all repetitions in school are associated with stunting
- 6** Undernourished children achieve an average of 0.8 years less at school, than well nourished children
- 7** Child mortality associated with undernutrition has reduced Ghana's workforce by 7.3%
- 8** 37% of the adult population in Ghana suffered from stunting as children
- 9** The annual costs associated with child undernutrition are estimated at 4.6 billion GH¢, which is equivalent to 6.4% of GDP
- 10** Eliminating stunting in Ghana is a necessary step for sustained development in the country




About the Study

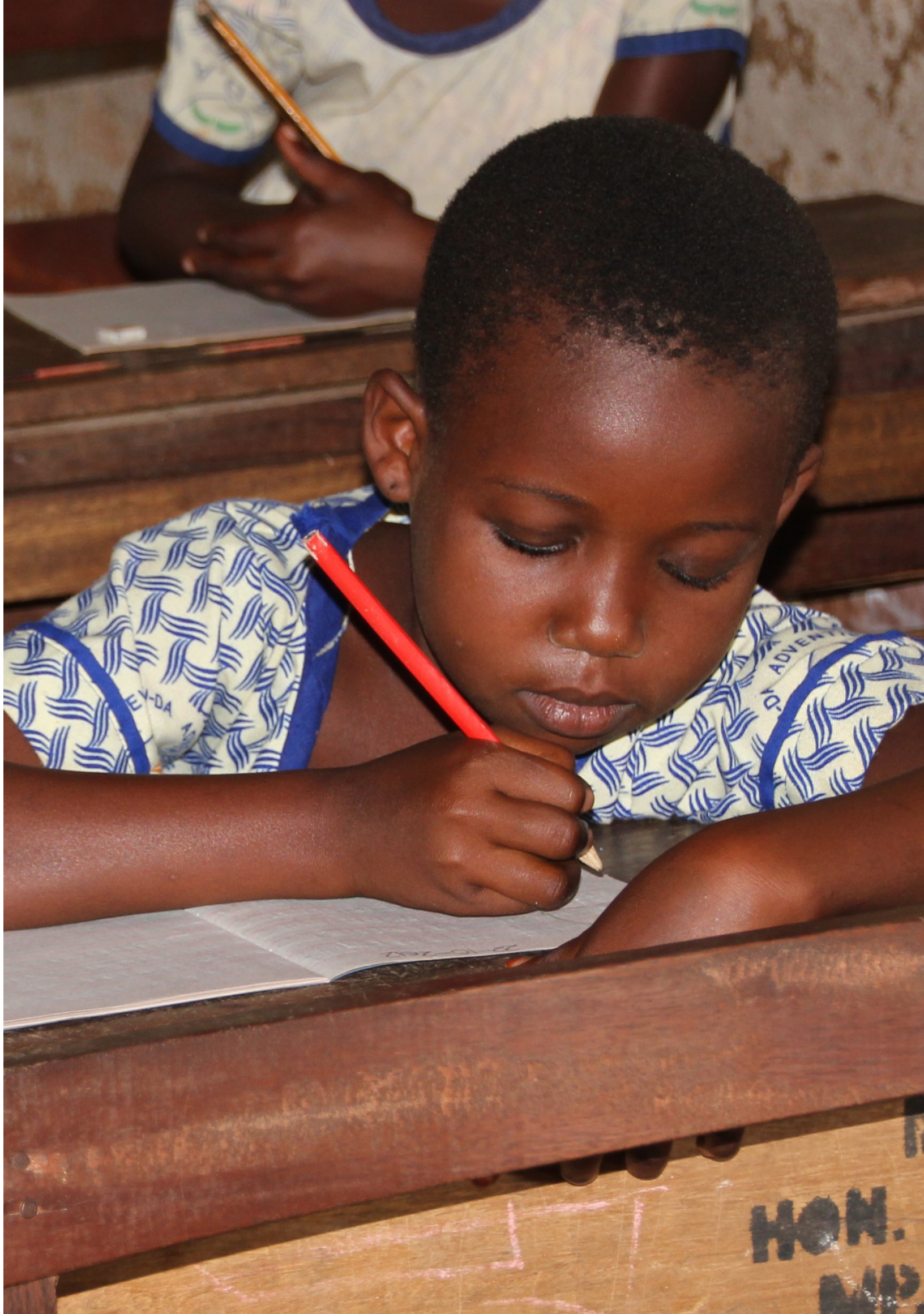
The Cost of Hunger in Africa (COHA) study is an African Union Commission (AUC) led initiative through which countries are able to estimate the social and economic impacts of child undernutrition in a given year.

In March 2012 the regional COHA study was presented to African Ministers of Finance, Planning and Economic Development during the 5th joint African Union (AU) and the Economic Commission for Africa (ECA) Conference of Ministers of Economic Planning and Finance held in Addis Ababa, Ethiopia. At the meeting, the Ministers issued a resolution confirming the importance of the study and recommending it to continue beyond the initial stage. Twelve countries are initially selected to participate in the study in phases, Ghana being among the four countries in the second-phase to implement the study.

In 2014, during the 24th African Union Summit in Malabo, Heads of State and Government urged all member states to consider implementing the COHA, which was seen as influencing critical policy reforms towards ending poverty and hunger.

The COHA model is used to estimate the additional cases of morbidity, mortality, school repetitions, and dropouts and reduced physical capacity that can be associated to a person’s undernutrition status before the age of five. In order to estimate these social impacts for a single year, the model focuses on the current population, identifies the percentage of that population who were undernourished before the age of five, and then estimates the associated negative impacts experienced by the population in that year. Using this information and the data provided by the Ghana NIT, the model estimates the associated economic losses incurred by the economy in health, education and potential productivity in a single year. The reference year used in the analysis of the study model is 2012, which is referred throughout the text as ‘current year’.

 0-5 years	Undernourished children are at higher risk of anaemia, diarrhea, 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	Stunted children are at higher risk of repeating grades in school and at higher risk of 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.



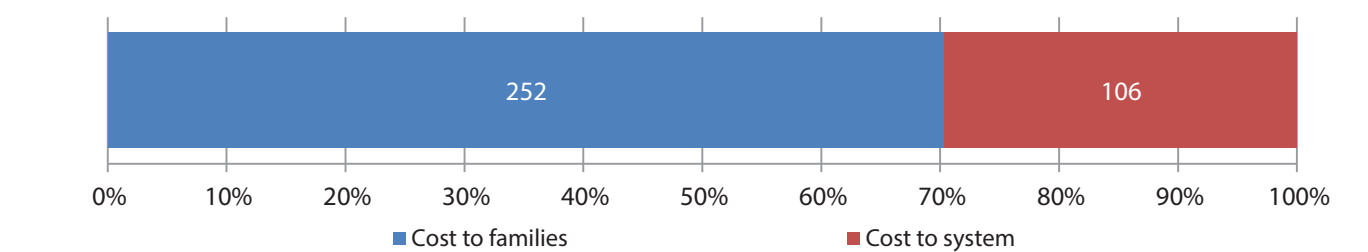
Results in Health

When a child is undernourished, he or she will have an increased chance of experiencing specific health problems.

Research shows that undernourished children under five are more likely to experience cases of anaemia, acute diarrhoeal syndrome (ADS), acute respiratory infection (ARI), and 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 underweight children.

Health Cost of Undernutrition – Related Pathologies(2012 cost in millions of GH¢)

Pathology	% of episodes	Cost (in GH¢)	Cost (in USD)	% of cost
Underweight	79.4%	313.30	174.46	88%
Lowbirthweight (IUGR)	2.8%	16.14	8.99	5%
Anaemia	2.5%	3.34	1.86	1%
Acutediarrhealsyndrome (ADS)	8.5%	18.03	10.04	5%
Acuterespiratoryinfection (ARI)	3.9%	3.30	1.84	0.9%
Fever/Malaria	2.9%	3.69	2.05	1.0%
Total		357.8	199.2	



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



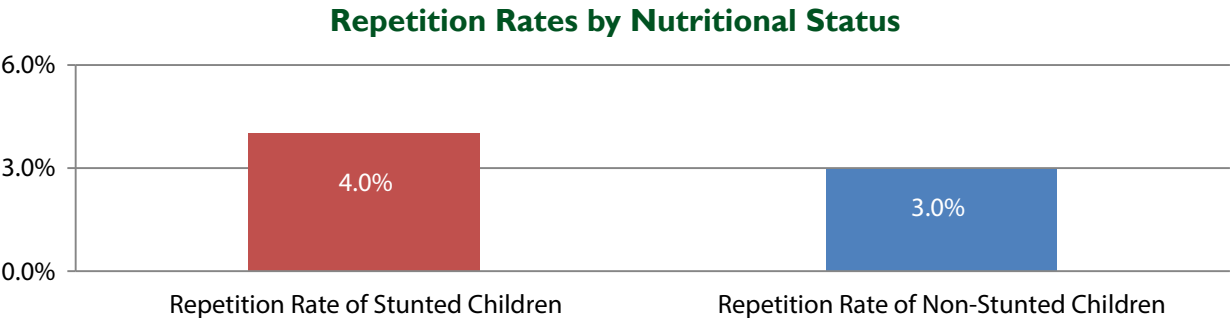
23.8 of child deaths are associated with undernutrition. There are an estimated 71,711 additional annual cases of child mortality associated with child undernutrition, in the period from 2008-2012.



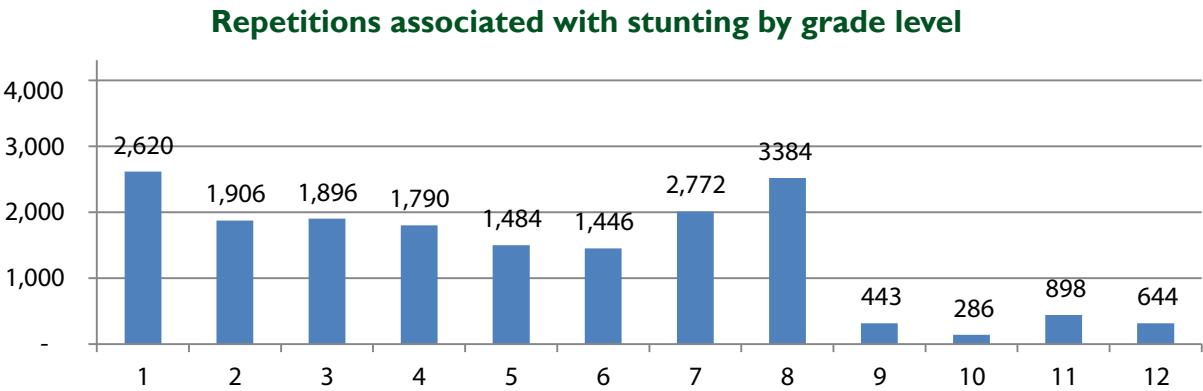


Results in Education

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 unfavourably in school due to having a lower cognitive and physical capacity than children who were able to stay healthy in the early stages of life.



According to official government records, **160,576 children repeated grades in 2012**. Using data on increased risk of repetition among stunted students, the model estimated that the repetition rate for stunted children was **4.0** percent, while the repetition rate for non-stunted children was **3.0** percent. Given this incremental differential risk of **1.0** percentage points, **the model estimates that 16,874 students or 10.5 percent of all repetitions in 2012 were associated with stunting**.



Repetitions are costly both to the family of the student, as well as to the education system.

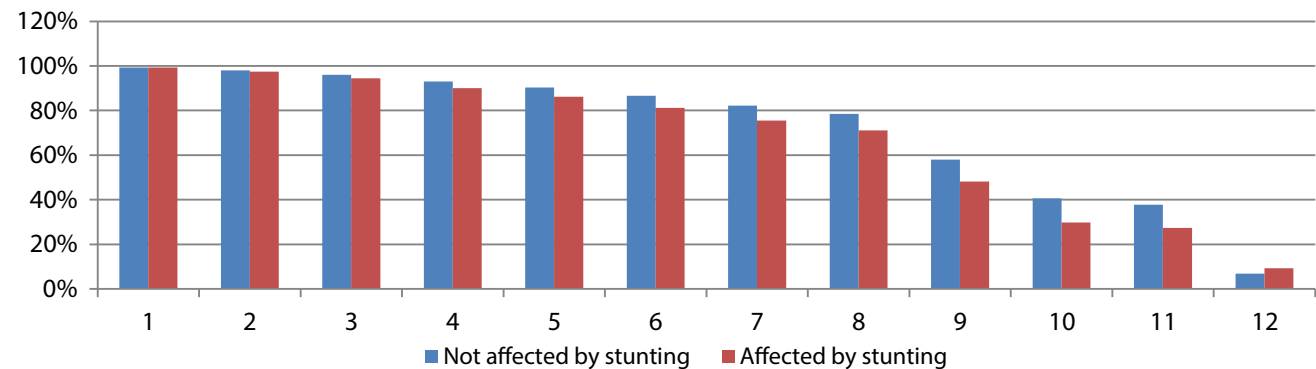
Both need to invest resources for an additional year of schooling. Costs for families include uniforms, books and exercise books, and school fees. Economic costs have been calculated to estimate the cost of the additional years of schooling associated with undernutrition.

Costs of grade repetitions associated with undernutrition	
Total Public Costs: 9.7 million GH¢	
Total Cost to Families/caretakers: 5.1 million GH¢	
Total Cost: 14.8 million GH¢	

Results in Education

Students who are stunted are also more likely to drop out of school. The data from Ghana illustrates that expected grade level achieved 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 information 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

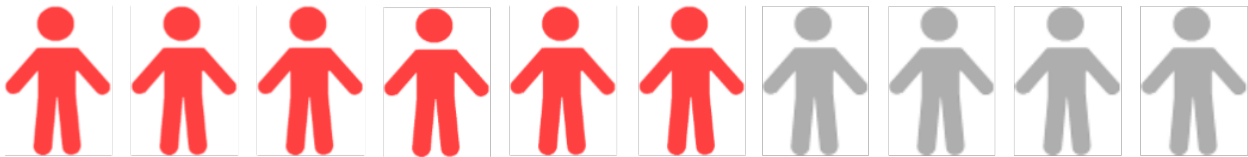


The economic impact of school achievement is not, however, reflected in the educational sector. Rather, the economic impact appears in the working age population, as the group with lower schooling achievements may be less productive and earn less income, than a more educated group, particularly in the non-manual sector. Thus, considerations of losses associated to lower schooling levels are described in the section that relates to labour productivity in non-manual activities.



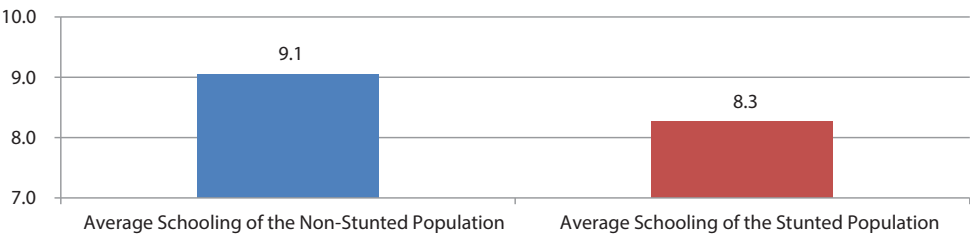
Results in Productivity

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 make 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 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.



An estimated **37%** of the working age population, or **5.49 million** people were stunted as children

Average Schooling in Years of Education



The Cost of Hunger in Africa model analyses the differential impact of undernutrition of a person’s productivity based on the type of labour. For non-manual activities, the analysis considers the consequences of lower schooling levels in 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 **59%** of the population in Ghana is engaged, the model generates an estimation of differential income, per grade of school and for each age group, based on the nutritional situation of the population. In the case of Ghana in which the stunted population has on average, 0.8 years less of education, the economic loss in non-manual activities is estimated at **628 million GH¢, which is equivalent to 0.86% of the GDP in 2012.**

On the other hand, for manual intensive activities, where 8,230,455 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 **319 million GH¢ which is equivalent to 0.44% of GDP.**

Losses in potential productivity in manual activities associated with stunting

Age in 2012	Population working in non-manual sectors who were stunted as childrens	Income losses in non-manual labour	
	Population working in non-manual sectors who were stunted as children	Millions of GH¢	Millions of USD
15-24	947,948	168.5	93.82
25-34	795,554	234.9	130.85
35-44	445,832	112.1	62.46
45-54	295,190	70	39.01
55-64	188,066	42.5	23.68
Total	2,672,591	628	349.83
% GDP		0.86%	

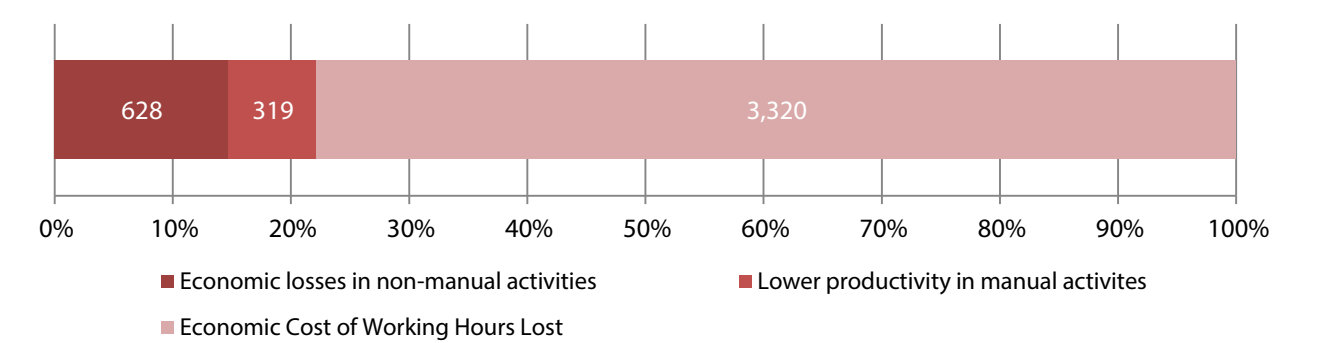


Undernourished children have a higher risk of dying compared to children who are not underweight. The COHA model estimates that **1,077,906** people in Ghana are absent from the workforce due to mortality associated with undernutrition. This represents **7.3%** of the **total working age population** (15 to 64) in excess of **3.3 billion working hours**.

Considering the current productive levels of the population, by age and sector of labour, the model estimates that the economic impact of working hours lost due to mortality are **3.3 billion GHC** which represents **4.5% of the country's GDP for 2012**.

Total losses in productivity for 2012 are estimated at approximately 4.3 billion GHC which is equivalent to 5.8% of Ghana's GDP. As presented in the figure below, the largest share of productivity loss is the result of reduced productivity due to mortality related to under nutrition, which represents 77.8 percent of the total cost. The lost productivity in non-manual activities represents 14.7 percent of the costs. The income differential in manual labour, due to the lower physical and cognitive capacity of people who suffered from growth retardation as children represents 7.5 percent of the total costs.

Distribution of losses in productivity

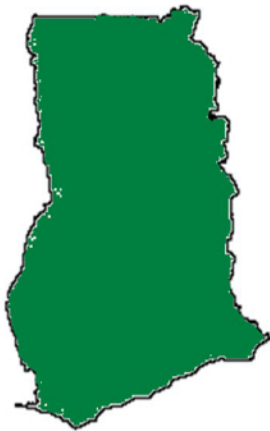


TOTAL COSTS

Results in Ghana

	Episodes	Cost in Millions of GH¢	Cost in Millions of Dollars	Percentage of GDP
Heath Costs				
LBW and Underweight	1,092,424	329	183.5	
Increased Morbidity	236,256	28	15.8	
Total for Health	1,328,680	358	199	0.5%
Education Cost				
Increased Repetition - Primary	11,142	8	4.5	
Increased Repetition – Junior Secondary	6,599	10	5.5	
Increased Repetition – Senior Secondary	1,979	5	2.9	
Total for Education	19,720	23	12.9	0.03%
Productivity Costs				
Lower Productivity - Non-Manual Activities	2,672,591	628	349.8	
Lower Productivity - Manual Activities	3,384,680	319	177.6	
Lower Productivity - Mortality	71,711	3,320	1,848.7	
Total for Productivity	6,128,983	4,267	2,376	5.8%
TOTAL COST	...	4,647	2,588	6.4%

Total losses associated with undernutrition are estimated at GH¢ 4.6 billion or US\$2.6 billion for the year 2012. These losses are equivalent to 6.4 percent of the GDP of that year.



Ghana
GH¢ 4.639 Billion
USD 2.583 Billion
6.4% GDP

Scenarios for Improved Nutrition

The previous section showed the social and economic costs associated with high historical trends of child undernutrition. Most of these costs are already cemented in 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.

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: The Cost of Inaction. Progress in reduction of stunting and underweight children remains at the level achieved in 2012

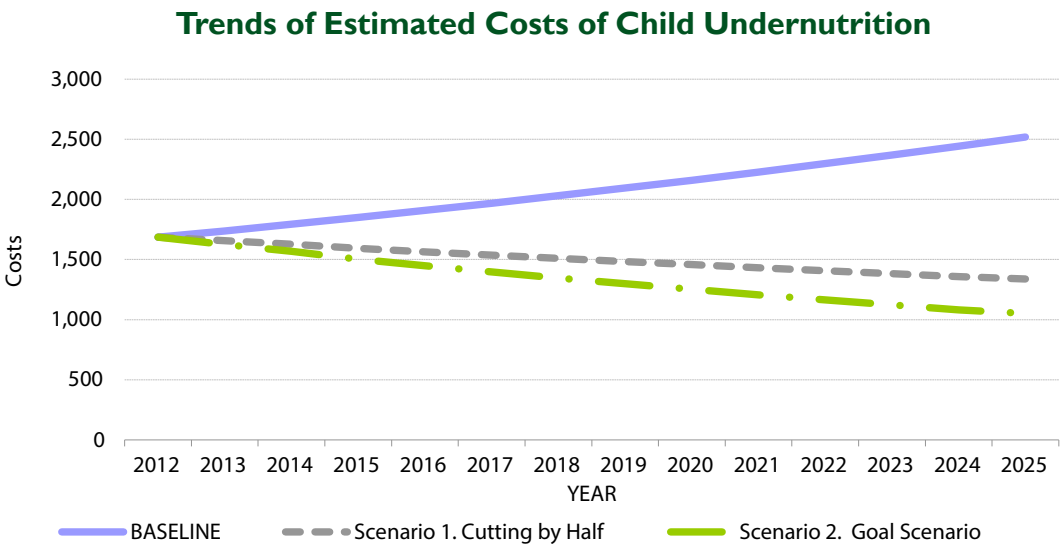
For the baseline, the progress of reduction of the prevalence of undernutrition stops at the levels achieved in 2012. It also assumes that the population growth would maintain the pace reported in the year of the analysis, hence increasing the number of undernourished children and the estimated cost. As this scenario is highly unlikely, its main purpose is to establish a baseline, to which any improvements in the nutritional situation are compared in order to determine the potential savings in economic costs.

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 2012 values corresponding to the reference year. In the case of Ghana, this would mean a constant reduction of 0.87 percentage points annually in the stunting rate from 22.7 percent (estimate for 2012) to 13.4 percent in 2025. A strong effort has to be carried-out to complete this scenario that would require a revision of the effectiveness of on-going interventions for the reduction of stunting as the average rate of reduction for stunting between 2005 and 2010 was estimated at 0.52 percent. This is however an improvement from the previous measurement, where from the year 2000 to 2005, the average annual rate of progress in the reduction of stunting was only 0.3 percent.

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 percent and the prevalence of underweight children under the age of five, to 5 percent. Currently, the global stunting rate is estimated at 26 percent, with Africa having the highest prevalence at 36 percent. This Goal Scenario would require a true call for action and would represent an important regional challenge, in which countries of the region could collaborate jointly in its achievement. The progress rate required to achieve this scenario would be 0.98 percent annual reduction for a period of 13 years, from 2012 to 2025.





Conclusions and Recommendations

Like in many similar case studies across Africa, the Cost of Hunger in Ghana Study confirms the magnitude of the consequences that child malnutrition can have on health, education, productivity, but most importantly, it emphasizes the impact on the national economy and the need for a multi-sectorial policy approach in order to stem the consequences of stunting. If not addressed early enough, child malnutrition has the potential to impair a child's capacity to develop cognitive skills through mental retardation. More fundamentally, the study has shown that child malnutrition leads to repeated episodes of ailments, increased repetition in school grades and poor performance in labour markets in adult life.

Thus, the study highlights both challenges and opportunities for the country in reducing child undernutrition. It sheds some new light on the implications of adequate child nutrition for development, and thus, provides an opportunity to renew national commitments towards the elimination of child malnutrition in the country. Arguably, strategic investments in nutrition now will yield far higher benefits to Ghana than the imputed costs imposed on the economy for not preventing the scourge of child malnutrition in early life. For instance, the report found that the total losses in productivity for 2012 were approximately GHC 4.267 billion (US\$ 2.376 billion), that is, equivalent to 5.8 percent of Ghana's GDP. These costs or losses to the economy could be averted through strategic interventions such as ensuring adequate nutrition for pregnant mothers and newly-born children.

Indeed, the report argues that the cost of inaction would be too colossal for the economy both now and in the future and hence makes a case for Ghana to leverage policy actions for a drastic reduction of stunting and malnutrition in the next ten to fifteen years. To achieve this, it is recommended that aggressive targets are set in Ghana for the reduction of stunting that go beyond proportional reduction, to an absolute goal. Several countries, including Ghana, in the continent are planning on setting the goal to reduce stunting to 10% by the year 2025 which would represent a 56% decrease from 2012.

In order to define actions and commitments towards the elimination of stunting in Ghana, national experts and stakeholders met in Accra in 2014 and suggested key actions that can contribute to this goal. In their recommendations five key areas were identified:

STRATEGIC PLANNING

It is recommended that appropriate strategies and policy actions should be devised that can effectively contribute to reduce the impact of child undernutrition in Ghana:

In this regard, nutrition should be positioned as a key development priority of the government as it is currently submerged within the Family Health Division of the Ghana Health Service. By allowing nutrition its own standalone place within the health sector, it will allow stakeholders to aggressively solicit and enforce a strong government commitment on nutrition concerns and issues and accelerate the implementation of the nutrition strategy.

This should be followed by a statutory provision or benchmark that allows a certain percentage of the Assembly's common fund to be spent on nutrition related programmes. This will include enhanced communication and coordination among all governmental and non-governmental strategic partners, as well as allocating adequate funding to the relevant agencies.

COORDINATION

In order to cut down on ad hoc arrangements and duplication of functions, there is need to put in place a robust coordination mechanism. This calls for the establishment of a multi-sectorial policy approach for a concerted fight against malnutrition, while improving the coordination of interventions. Some of the necessary steps to achieve a coordinated approach are:

Raising the profile of the nutrition agenda in the country, through the establishment of a Nutrition Agency under the National Development Planning Commission. Among many other functions, this agency should be charged

with a clear legal mandate to coordinate the activities of different sectors and position nutrition as a priority in Ghana. This will facilitate and support a holistic and multi-sectorial approach to nutrition issues across Ghana.

Decentralising the multi-sectorial approach by establishing desk offices at key institutions and relevant Ministries, Departments, Agencies and MMDAs to ensure proper coordination. As part of the national bureaucracy, this should be supported by adequate allocation of funding for all relevant agencies across the nutrition value chain.

As part of a wider communication strategy, authorities should enhance information flow and reporting by establishing a dedicated website/portal for nutrition interventions in Ghana. By creating a one-stop information shop for nutrition issues in Ghana, it is envisaged that key stakeholders can be continuously engaged on nutrition matters. The proposed one-stop-public-information-shop will subsequently help to generate national policy debates to advocate for an allocation of national budget for nutrition activities.

In order to sustain the national momentum on nutrition, it is absolutely imperative to get increased government commitment to combat malnutrition as part of a broader strategy for improving people's welfare. This can be achieved in several ways that include the financial commitment of the Ghanaian government, the coordination of the activities of international organizations and initiatives among them SUN, REACH and GAIN toward nutrition issues in Ghana.

MONITORING AND EVALUATION

In order to ensure sustainability of interventions, authorities should improve monitoring and evaluation systems to be more nutrition sensitive and effective in assessing short-term, medium-term and long-term impacts of reduction in child stunting in Ghana. The following practical ways should be put in place to help realise sustainability of the programme:

Ensure the systematic production of credible data and findings on nutrition issues and disseminate them widely to critical stakeholders, including communities to generate national policy debates.

Ensure the multi-sectorial role of workers to collect data for M&E officers is enhanced and strengthened – both at national and district levels. In this regard, the linkages between sectorial statistics derived from agriculture, health, water, education, etc. should be developed and sustained. In the health sector, for instance, the monitoring of community-based growth of under-fives and antenatal care should be made available and fed into overall health management information systems.

COMMUNICATION

Ultimately, the success of government and stakeholder interventions on addressing undernutrition in Ghana will be judged by its communication strategy in terms of how many people it is able to reach with appropriate and accurate information. In this context, increased awareness and behavioural change in the population to adopt good practices of hygiene and nutrition in favour of children and pregnant women is imperative. The following proposals could support to achieve an effective communication strategy for Ghana:

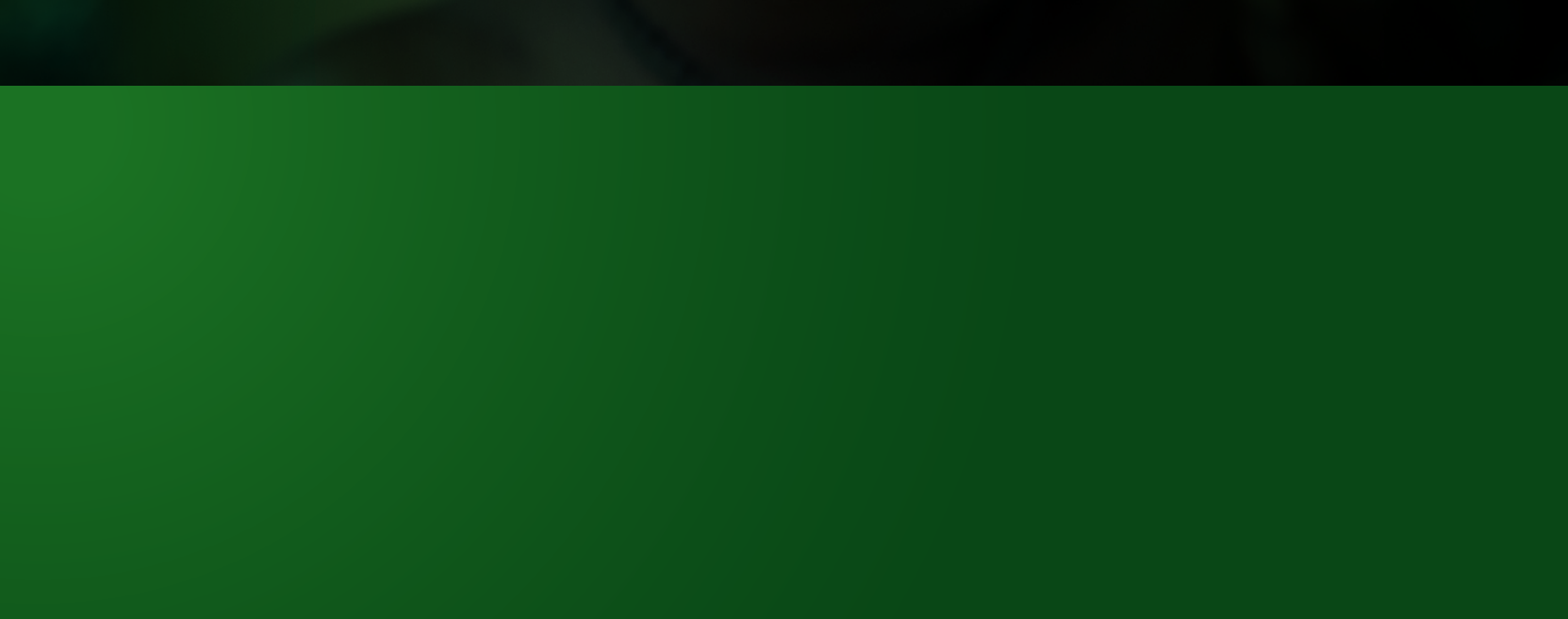
Strengthen awareness on good practices regarding feeding, nutrition and hygiene, while encouraging practices such as exclusive breastfeeding and food diversification from the perspective of nutrition, food hygiene and preservation of the environment.

Promote nutritional practices based on a better use of local food potential. Actions of awareness need to be enhanced to convince the population on the nutritional quality of local foods and to promote culinary practices that preserve these qualities.

Integrate nutrition programmes in the education curricula to instil the importance of nutrition, food security and dietary diversification in education from early childhood.







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