

# The Cost of **HUNGER** in Ethiopia



Implications for  
the Growth and  
Transformation  
of Ethiopia

The Social and Economic Impact of  
Child Undernutrition in Ethiopia  
**Summary Report**



This document is based on the report “The Social and Economic Impact of Child Undernutrition in Egypt, Ethiopia, Swaziland and Uganda”, 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”, 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 ECA, and Mustapha Sidiki Kaloko, Commissioner for Social Affairs at the African Union Commission (AUC).

Special recognition has to be provided to the National Implementation Team in Ethiopia responsible for collecting, processing and presenting results, led by the Federal Ministry of Health (FMoH) and the Ethiopian Health and Nutrition Research Institute (EHNRI), particularly to Aregash Samuel (FMoH/EHNRI), Biniyam Tesfaye (FMoH/ENRHI), Elias Asfaw (FMoH/EHNRI), Tibebe Moges (FMoH/EHNRI), Ferew Lemma (FMoH/REACH), Israel Hailu (FMoH), Kiflu Tesefaye (Central Statistics Agency), Asalfew Abera (Central Statistics Agency), Yohanes Zewde (Ministry of Finance and Economic Development), Kassu Abdi (Ministry of Education), St. Paul Hospital Millennium Medical College, Akiko Sato (WHO Ethiopia), Mesfin Gebrekidan (WHO Ethiopia), and with the support from the WFP Country Office, specifically Mesfin Gose and Barbara Tembo. The regional support team was originally led by Francisco Espejo from WFP and then led by Carlos Acosta Bermudez from ECA, with the support of Rachel Quint and Yohanan Ermias from WFP and Shewit Aseffa from ECA. and additional technical guidance from Rodrigo Martinez and Amalia Palma, from the Social Development Division of the Economic Commission for Latin America and the Caribbean (ECLAC).

The team is grateful for the institutional leadership provided to this project by H.E. Dr. Kesetebirhan Admasu, Minister of Health, Federal Democratic Republic of Ethiopia; Dr. Amha Kebede, Director-General of EHNRI; H.E. Dr. Nkosazana Dlamini Zuma, Chairperson, AUC; H.E. Dr. Carlos Lopes, Executive Secretary, ECA; Ertharin Cousin, Executive Director, WFP; and Dr. Ibrahim Mayaki, CEO, NEPAD.

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).

The Steering Committee highlights the special contributions by the EHNRI in supporting the adaptation of the Model to Estimate the Social and Economic Impact of Child Undernutrition in Africa. Their contributions indicate Ethiopia’s commitment to regional collaboration.

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Editing and production: African Union Commission, World Food Programme, United Nations Economic Commission for Africa, Design: Rachel Quint, Addis Ababa, Ethiopia

**Initial Funding for COHA  
provided by:**







**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.**

# Foreword

State Minister of Health

**In the last decade, we have made significant strides in addressing nutrition issues in Ethiopia. Interventions have been scaled-up targeting women and children; rates of underweight and stunting have decreased. The Growth and Transformation Plan has identified nutrition as a key goal for 2015. Many sectors have committed to implementing interventions that specifically address nutrition.**

If we invest in nutrition, we will see social and economic gains. Improved nutrition can have a positive effect for individuals and communities in all areas of life — health, education, and productivity — and there are no negative consequences of investing in improved nutrition.

It is known that child undernutrition has long-term negative effects on people's lives, most notably in health, education, and productivity, and seriously affects the human capital of a country on which the economy relies. The study on the Cost of Hunger in Ethiopia has allowed us to quantify the negative impacts of child undernutrition in both social and economic terms.

The study is undoubtedly a call to action, and it is thus appropriate that the study has been launched simultaneously with the National Nutrition Plan (NNP). This program outlines some of the key efforts that must be undertaken in the next few years to address the causes and effects of malnutrition and provides a basis for future nutrition policy. The study illustrates the need for all partners to work together to implement the NNP and collaborate to improve nutrition broadly. Specifically, the critical support required to address the issue of undernutrition is through health and agriculture extension services and through continues research. Moreover, community sensitization and awareness-raising activities on nutrition must be implemented. By doing this, we can reduce the burden of child undernutrition on communities and enhance social and economic growth.

I would like to thank the African Union Commission for leading this important initiative, the UN Economic Commission for Africa for their technical leadership, and the UN World Food Programme for their financial support. Further, I wish to commend the multi-sectoral implementers and supporters of the study including the Federal Ministry of Health, the Ethiopian Health and Nutrition Research Institute, as well as the Ministry of Education, the Ministry of Finance and Economic Development, the Central Statistics Agency, St. Paul Hospital Millennium Medical College, the World Health Organization, and the UN Children's Fund. Studies of this kind can empower us to develop informed policy and provide evidence to support our existing interventions.



**Kebede Worku (MD)**

State Minister of Health

Federal Democratic Republic of Ethiopia

# Foreword

Director-General, Ethiopian Health and Nutrition Research Institute

**This year, Ethiopia was proud to be elected as the chair of the African Union during the year of Pan-Africanism and the African Renaissance and the 50<sup>th</sup> anniversary of this continental organization. In the past fifty years, Ethiopia, and the entire continent, has experienced remarkable growth and achievement. We look forward to another fifty years of growth and success.**

**As this study shows, however, we cannot rely solely on traditional drivers of growth. Our economy is struggling under the burden of child undernutrition. We must invest not only in roads and bridges and enterprise, but also in the nutrition of the youngest Ethiopians.**

In order to improve child nutrition at national level, we must be able to bring together a coordinated inter-sectoral response that is able to address the direct determinant of undernutrition, beyond just the health sector. The Cost of Hunger Study continues aims to bring together the will and actions necessary for a decisive response to address this issue.

We have always suspected the high economic and social impact of malnutrition in Ethiopia. But now we know how much. This study is ground-breaking, as it is able to establish an economic value on this impact.

Unlike other studies of its kind, the data used for COHA is national data from Ethiopian ministries. This study illustrates that we can effectively use our data to evaluate the economic and social situation in our country. This can then be used to develop tailored policy to address specific challenges. Further, the data was processed by a skilled team of professionals from the Ethiopian Health and Nutrition Research Institute and the Federal Ministry of Health who had the opportunity to expand their capacity in data analysis through the process. The systematic approach of data analysis used in COHA can be replicated to other aspects of the activities that are undertaken by the Federal Ministry of Health and other ministries.

As the Government of Ethiopia moves forward in the implementation of the Growth and Transformation Plan, we need to emphasize the importance of eliminating undernutrition. In the context of the COHA results, the FMOH has developed a comprehensive National Nutrition Plan, which has the possibility of bringing together actions that can reduce the barriers that are imposed in undernourished children, from an early age, up until they become productive members of society.

As we congratulate the African Union on the monumental 50<sup>th</sup> anniversary and celebrate the successes of the past 50 years, we look forward to an exciting new era that will focus on human capital, and specifically nutrition, as a key element for Ethiopia's development.



**Dr. Amha Kebede**  
Director-General

Ethiopian Health and Nutrition Research Institute

# 10 Things Everyone Should Know about Child Nutrition in Ethiopia

**1** Today, more than 2 out of every 5 children in Ethiopia are stunted.

**2** As many as 81% 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** 28% of all child mortality in Ethiopia is associated with undernutrition.

**5** 16% of all repetitions in primary school are associated with stunting

**6** Stunted children achieve 1.1 years less in school education.

**7** Child mortality associated with undernutrition has reduced Ethiopia's workforce by 8%

**8** 67% of the adult population in Ethiopia suffered from stunting as children.

**9** The annual costs associated with child undernutrition are estimated at Ethiopian birr (ETB) 55.5 billion, which is equivalent to 16.5% of GDP.

**10** Eliminating stunting in Ethiopia is a necessary step for growth and transformation.



# About the Study

The **Cost of Hunger in Africa (COHA) Study** is 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 the four first-phase countries, Egypt, Ethiopia, Swaziland, and Uganda.

The COHA study in Ethiopia is led by the Federal Ministry of Health (FMoH), through the Ethiopian Health and Nutrition Research Institute (EHNRI), Ministry of Education (MoE), Ministry of Finance and Economic Development (MoFED), Central Statistics Agency (CSA), St. Paul Hospital Millennium Medical College, and the country offices of the World Health Organization (WHO) and the World Food Programme (WFP). At regional level, the COHA project is being led by the African Union Commission (AUC) with technical leadership from the United Nations Economic Commission for Africa (UNECA) and support from WFP.

During the process, all data for the study was collected from national data sources including the Ethiopia Household Income, Consumption and Expenditure Survey 2010/11 (EHICES), CSA Databases, Demographic and Household Survey (DHS) 2011, previous DHS studies, the African Centre for Statistics (ACS), 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 of anaemia, diarrhoea, fever, 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

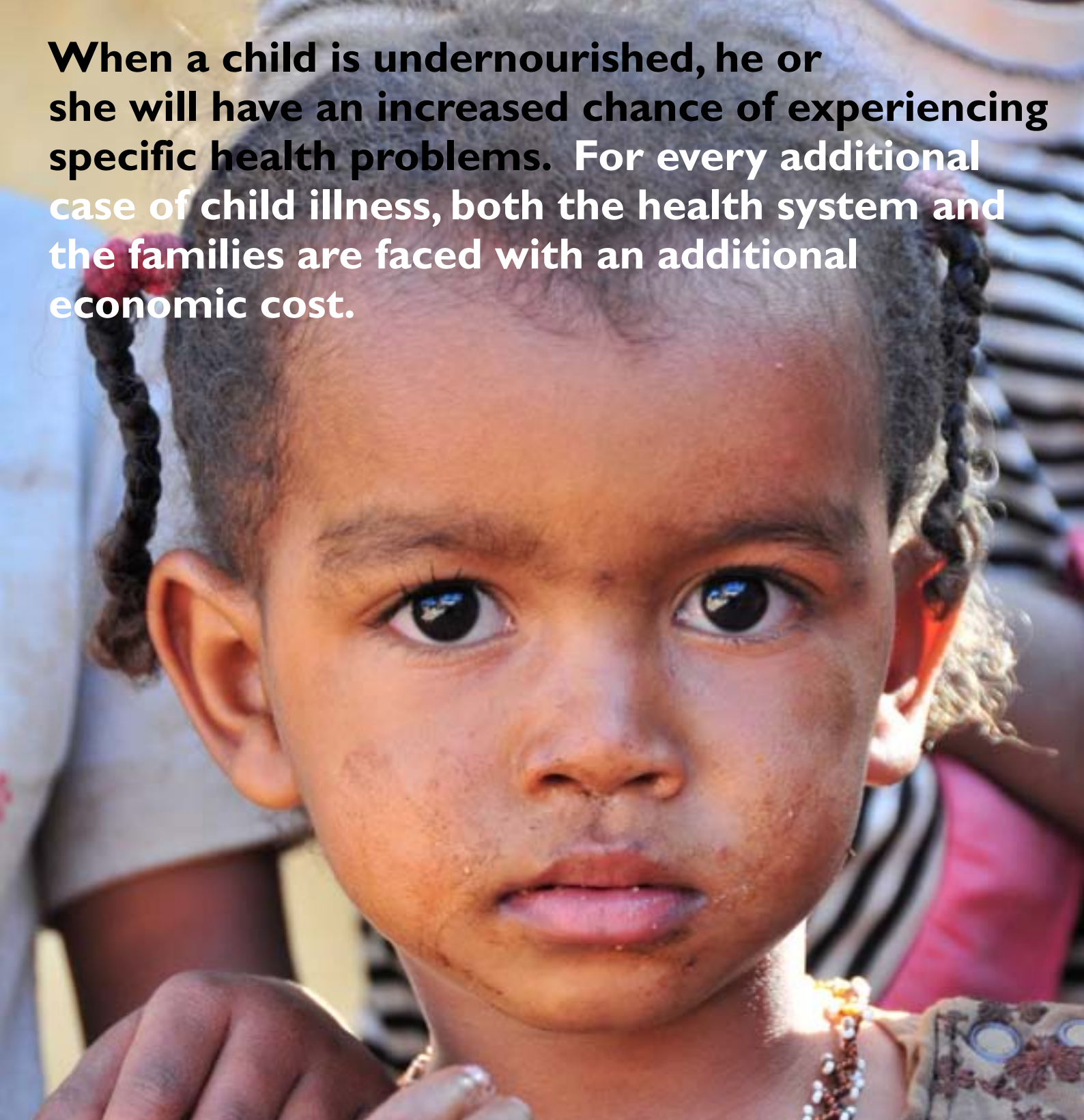
Stunted<sup>1</sup> children are at higher risk of repeating grades in school and at higher risk for dropping out of school. Additional instances of grade repetitions are costly to the education system and families.



## 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.

<sup>1</sup>**Stunting:** the 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 Ethiopia**



# 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 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 underweight<sup>2</sup> children.**

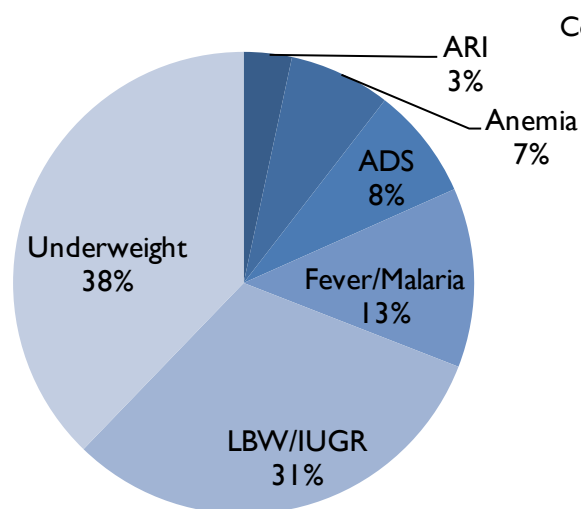
## Health Cost of Undernutrition – Related Pathologies

(Cost in millions of ETB)

Pathology	Incremental Morbidity	Cost to Families	Cost to System	Total Cost
Low birth weight/IUGR	148,173	575	117	693
Anaemia	365,311	572	1	572
ADS	527,153	216	15	231
ARI	114,300	122	22	144
Underweight	2,991,509	113	17	130
Fever/Malaria	264,232	48	13	61
<b>Total</b>	<b>4,410,678</b>	<b>1,646</b>	<b>185</b>	<b>1,831</b>

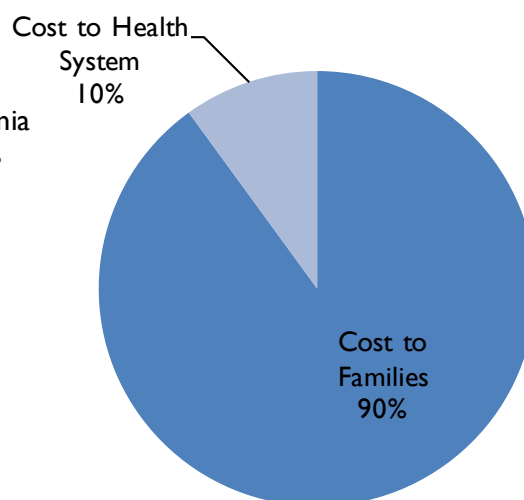
### Proportion of Cost

(by pathology)



### Proportion of Cost

(by payer)



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

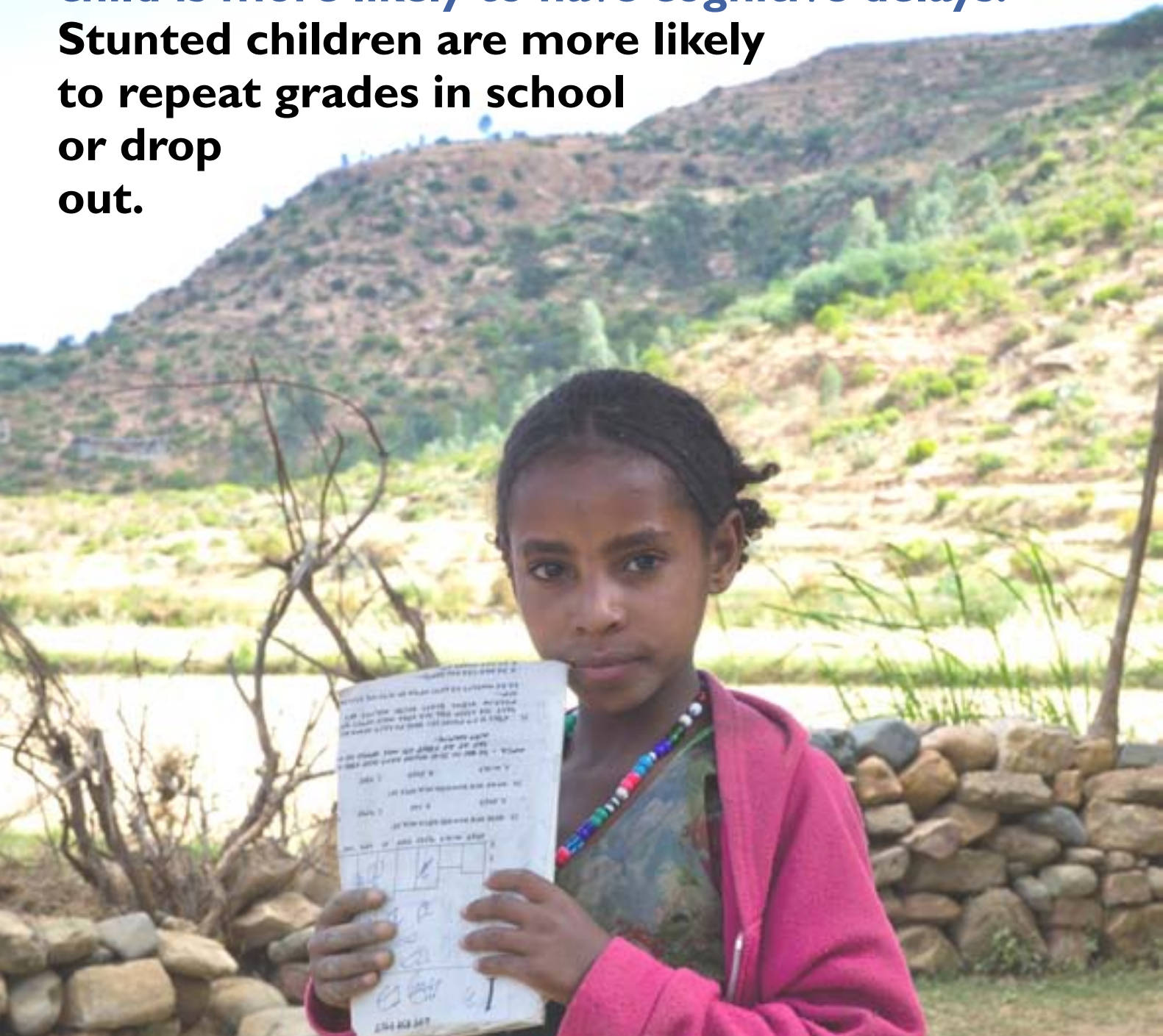


**28%** of child deaths are associated with undernutrition

There were an estimated **378,591** additional annual cases of child mortality associated with child undernutrition, in the period from 2004 to 2009.

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

**When a child is undernourished, his/her 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 Ethiopia**

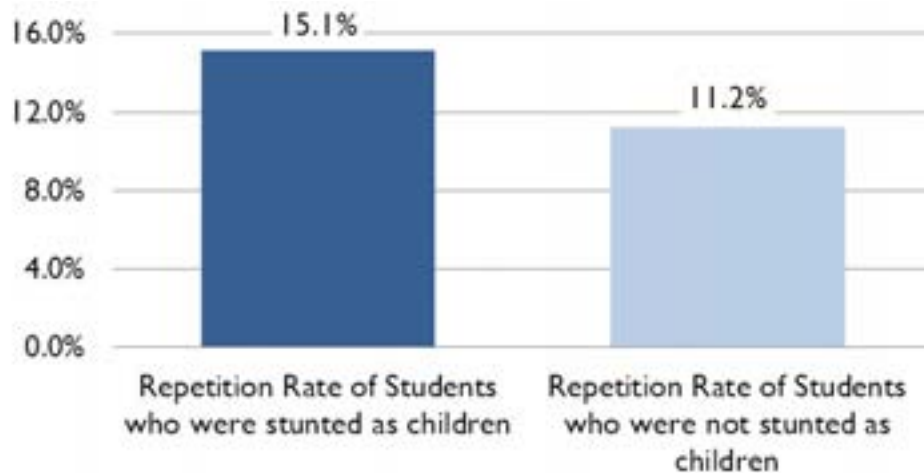


# Results in Education

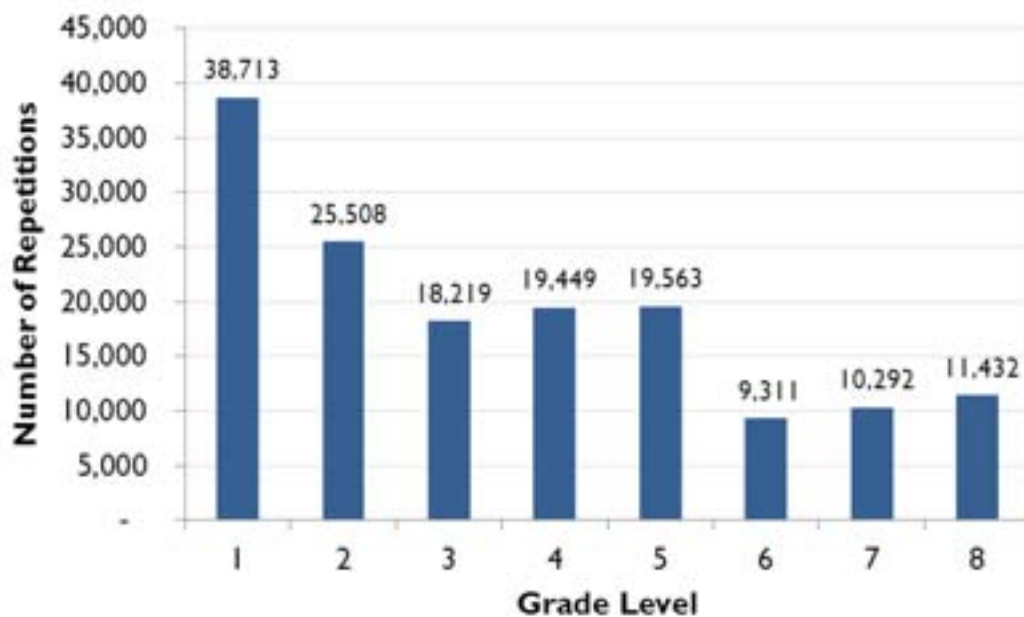
Students who were stunted as children will have reduced cognitive capacity and are therefore more likely to repeat grades in school.

The graph below illustrates the relatively higher repetition rates among stunted students.

**Repetition Rates by Nutritional Status**



**Repetitions Associated with Stunting by Grade Level**



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.

<b>Costs of repetitions associated with undernutrition</b>	
<b>Total Public Costs:</b>	ETB 34 million
<b>Total Private Costs:</b>	ETB 59 million
<b>Total Cost:</b>	ETB 93 million
<b>% Social expenditure on education:</b>	1.48%

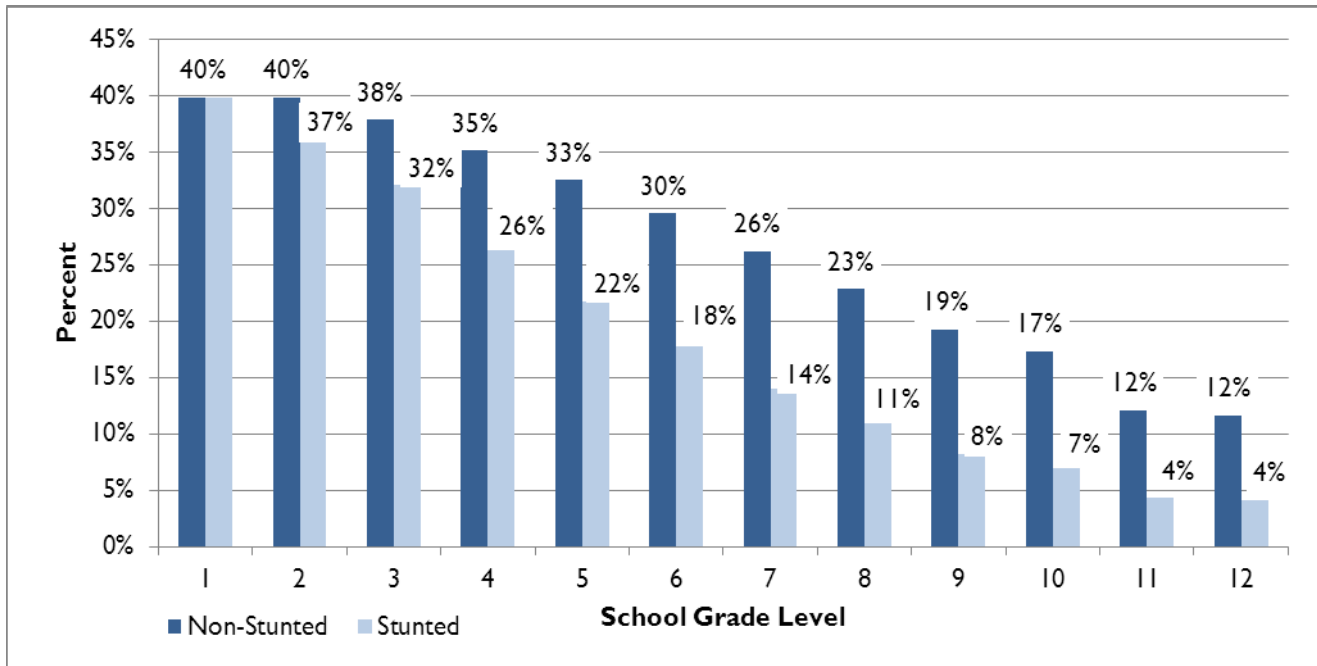


# Results in Education (continued)

## Students who are undernourished are also more likely to drop out of school.

The data from Ethiopia 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 in 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 are described in the section that relates to labour productivity in non-manual activities.





A young child with dark skin and short hair stands in a field of green corn plants. The child is wearing a simple, light-colored, short-sleeved shirt and has their hands clasped together in front of their chest. The background shows more corn plants and a clear blue sky.

**Theory indicates that when a child is stunted, this will impact them when they enter the labour force. On the whole, stunted workers are less productive than non-stunted workers, and are less able to contribute to the national economy.**

## **Effects on Productivity**

### **Results from Ethiopia**



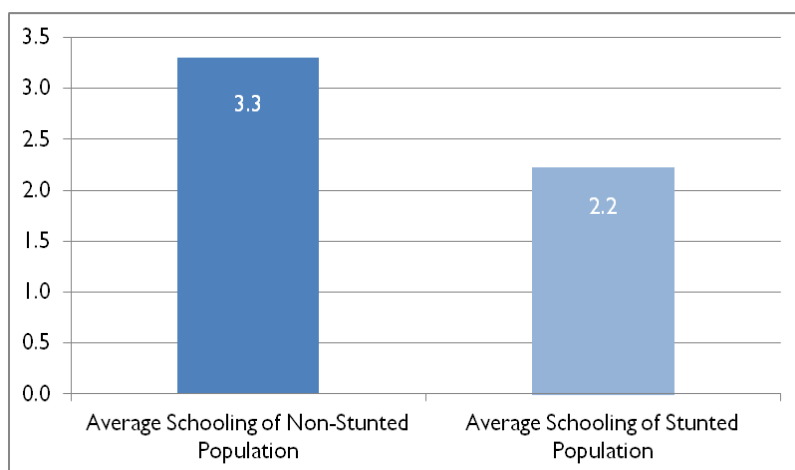
# Results in Productivity

**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 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 **67%** of the working age population, or **26 million** people were stunted as children

## Average Schooling by Nutritional Status



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 7% of the population in Ethiopia 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 Ethiopia, in which the stunted population has on average, 1.1 years less of education, the economic loss in non-manual activities is estimated at **ETB 625 million, which is equivalent to 0.2% of the GDP in 2009.**

On the other hand, for manual intensive activities, where 93% of Ethiopians 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 **ETB 12.8 billion which is equivalent to 3.8% 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 ETB)
15-24	9,053	4,251
25-34	3,031	3,455
35-44	4,307	2,508
45-54	2,867	1,612
55-64	1,984	1,030
<b>Total</b>	<b>24,273</b>	<b>12,857</b>
<b>% GDP</b>		<b>3.8%</b>



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

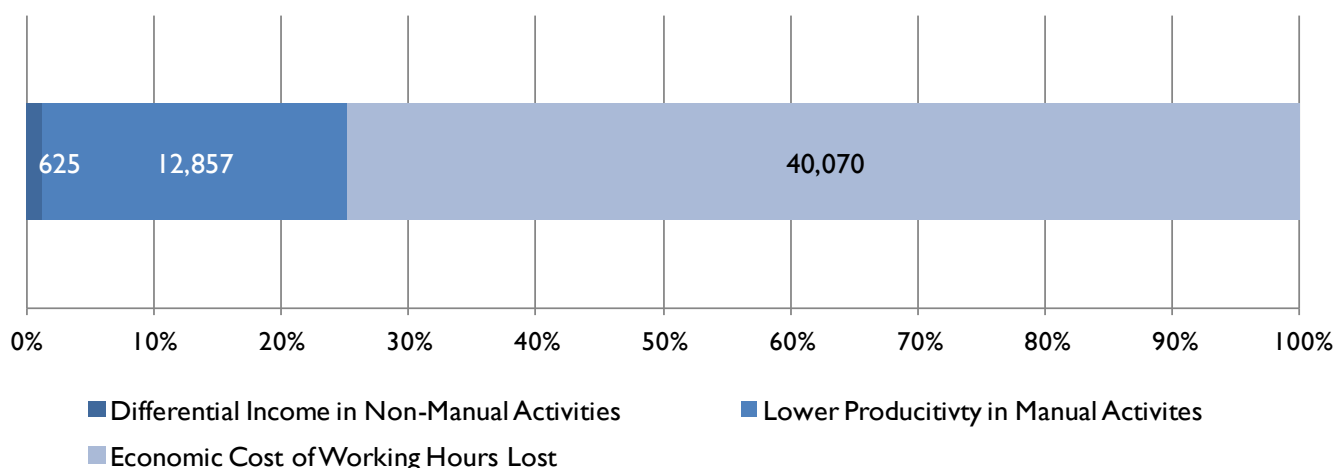
As such, the COHA model estimates the proportion of child mortalities that are associated to undernutrition. Further, the model estimates those mortalities who would have been of working age (15-64) today, but are absent from the workforce. The model estimates that the estimated 3.2 million working age people that would be part of the economy in 2009 could have increased national productivity in excess of 4.8 billion working hours.

Considering the productive levels of the population, by their age and sector of labour, the model estimates that the economic losses of the working hours due to mortality is ETB 40 billion, which represents 11.9% of the country's GDP for 2009.

**Total losses in productivity for 2009 are estimated at approximately ETB 53.6 billion, which is equivalent to 16% of Ethiopia's GDP.**

The figure below, illustrates the distribution of losses. The largest share of cost, amounting to 75%, is due to working hours lost from individuals who died, before reaching the age of five, due to high rates of undernutrition. Lower productivity in manual activities represents 24% of the cost, as there is a large proportion of the population in Ethiopia engaged in agriculture.

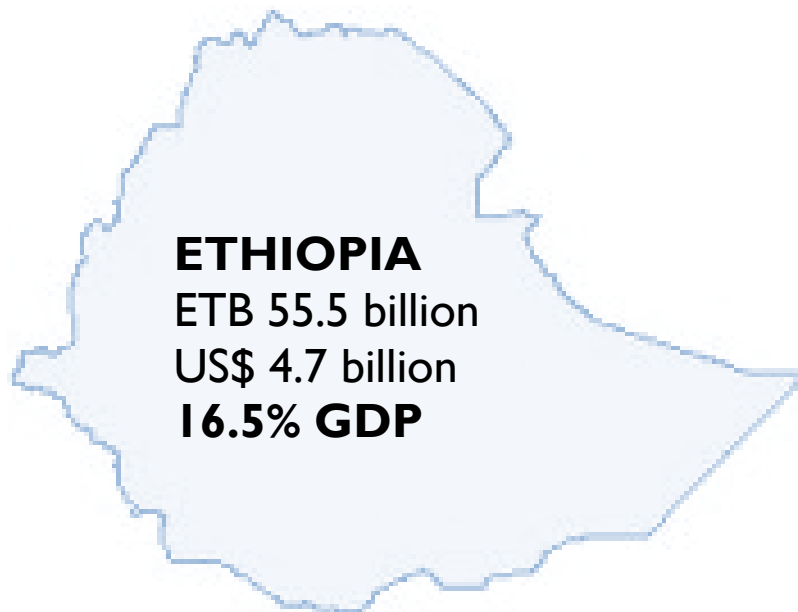
### Distribution of Losses in Productivity





## Total Costs Results from Ethiopia

Total losses associated with undernutrition are estimated at **ETB 55.5 billion**, or **US\$4.7 billion** for the year 2009. These losses are equivalent to **16.5% of GDP** of that year.



# 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 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 value of the reference year of 2009. In the case of Ethiopia this would mean a constant reduction of 1.5% points annually in the stunting rate, from 46.4% (estimate. 2009) to 23.2% in 2025. With the right combination of proven interventions, this scenario would be achievable, as the rate of reduction for stunting from 2001 to 2011 is estimated at 1.1%, which is close to the progress rate required in achieving this scenario
- **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 underweight children with less than five years, to 5%. Currently, the global stunting rate is estimated at 26%, with Africa having the highest prevalence as a region at 36%. This Goal Scenario, would require a true call to 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 2.3% annual reduction for a period of 17 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





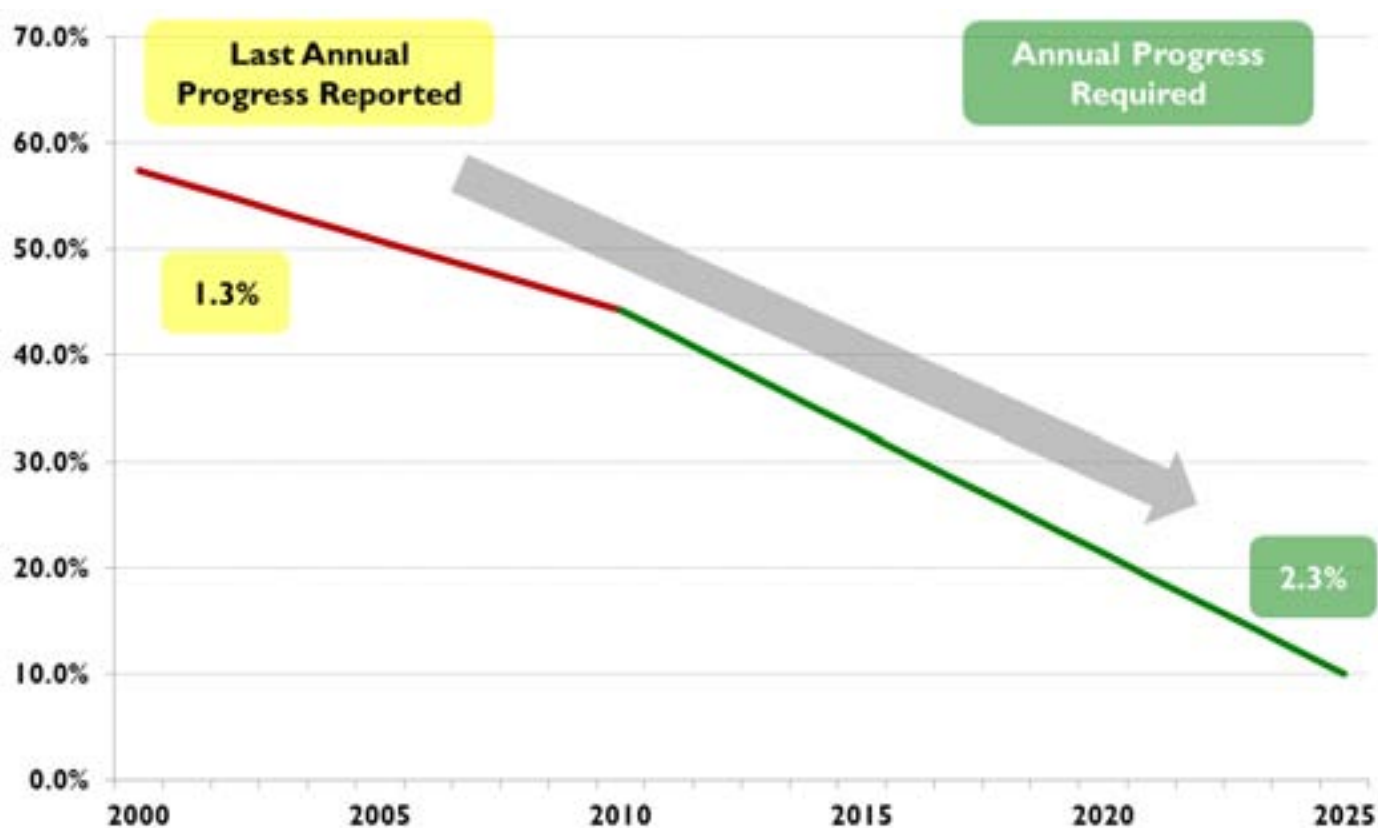
# Scenarios for Improved Nutrition

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 in national productivity.

	Halving Child Stunting	Reaching 10 % & 5 % by 2025
<b>Required progress per year</b>	1.5%	2.3%
<b>Total Savings</b>	ETB 70 billion US\$ 6 billion	ETB 148 billion US\$ 12.5 billion
<b>Average Annual Savings</b>	US\$376 million	US\$784 million

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

## Current and Required Progress to Achieve Goal Scenario



In addition to the scenarios presented, an additional analysis has been carried out for Ethiopia. The National Nutrition Plan has established a target of achieving 30% stunting by the year 2015. If this target were to be achieved, the model estimates that the annual average savings of this scenario would be an average of US\$106 million, and would require a progress of 2.7% annually from the values estimated for 2009.

# Conclusions

## Child Undernutrition: Implications for Ethiopia's Growth and Transformation Plan

The Cost of Hunger Study is an important step forward to better understand the role the child nutrition and human development can play as a catalyser, or as a constraint, in the implementation of Ethiopia's Growth and Transformation Plan (GTP). This plan, that projects a sustained GDP growth of 11% to 15% from 2010 to 2015, represents the national strategy of Ethiopia towards poverty eradication. In its implementation, the GTP outlines opportunities in the agricultural and industrial sectors, and a series of indicators that need will be monitored to assess the progress towards the ultimate goal. The results of the COHA study demonstrate that in order to enhance and sustain the results envisioned in this plan, child stunting must be addressed as a key priority.

The results of the COHA in Ethiopia strongly suggest that in order for the country to achieve sustainable human and economic growth, special attention must be given to the early stages of life as the foundation of human capital. The results of the study are supported by a strong evidenced base, and a model of analysis specially adapted for Africa, which demonstrates the depth of the consequences of child undernutrition in health education and labour productivity. This study further quantifies the potential gains of addressing child undernutrition as a priority. Now, stakeholders have not only the ethical imperative to address child nutrition as a main concern, but a strong economic rationale to position stunting in the centre of the development agenda.

The GTP has a key element in its implementation that addresses the importance of improving access and quality of health services. This study estimates that child undernutrition generates health costs equivalent to 0.5% 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. Although this amount might seem relatively small, it is important to note that only 3 out of every 10 children are 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.

The GTP also prioritizes the importance of reducing child mortality. The COHA study estimates that 28% 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.

One of the key elements of the GTP is the expanding preschool, primary and secondary access and increase enrolment. This represents a particular opportunity in Ethiopia where the population under 15 years is estimated to be 40% 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 must be put in place that considers improving in the quality of education and the conditions required for school attendance. This study demonstrates that stunting is one barrier to attendance and retention that must be removed to effectively elevate the educational levels and improve individuals' labour opportunities in the future.

The study estimated that children who were stunted experienced a 3.9% higher repetition rate in primary school. As a result, 16% of all grade repetitions in primary school are associated to the higher incidence of repetition that is experienced by stunted children. These numbers suggest 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. There was not enough information to analyse this aspect for secondary education in Ethiopia.

A critical pillar in the successful implementation of the GTP lays in the capacity of the country to elevate the levels of productivity in the population, both in the rural and urban context. Achieving this in short-term, in a way that also has an impact in the reduction of poverty rates, it requires an important investment in specialized training to continuously build the capacities in the population. This will facilitate the shift of the workforce towards a more skilled labour, as the economy is able to produce new jobs to reduce youth unemployment.

# Conclusions (continued)

The study estimates that 67% of the working age population in Ethiopia is currently stunted. This population has achieved, on average, lower school levels than those who did not experience growth retardation of 1.1 years of lower schooling. As industries continue to develop 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 the GTP.

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 the analysed countries, a reduction of the prevalence to half of the current levels of child undernutrition by the year 2025 can generate annual average savings of ETB 4.4 billion (US\$ 376 million). An additional scenario shows that a reduction to 10% stunting and 5 % underweight for that same period could yield annual average savings of ETB 9.2 billion (US\$784 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. Ethiopia'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 Ethiopia 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 Initiative as programmes and interventions are put in place to address stunting as a national priority.





# Recommendations

This study presents some key initial findings of the Cost of Hunger in Ethiopia, as well both challenges and opportunities regarding the reduction of child undernutrition to the country. This analysis was been presented in 2 dimensions:

## Recommendations for On-going Interventions:

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

- a. **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 that has been found to facilitate nutritional catch-up starting from the early childhood care and development centres.
- b. **Promote the delivery of nutrition services integrated with other essential services:** The government of Ethiopia has in place maternal child health such as ANC, PNC and Young child health services provided through the health delivery system. While these are directed to ensure healthy pregnancies and good birth outcomes while promoting positive health behaviour, the utilization is still limited. Because of this reason, nutrition services delivery at health facility level is low. Therefore **utilization of essential health services should be increased and nutrition services should be delivered at all contact points.**
- c. **Promote optimal complementary feeding practices:** Though there is some improvement in breast feeding practice in the country, the level of appropriate complementary feeding practices is still very low. **Therefore it is recommended that best practices observed in some area regarding improving the complementary feeding practice, through improved local food processing should be scaled up and interventions should be employed to enrich food with micronutrients.**
- d. **Initiate mandatory food fortification programs:** In Ethiopia, consumption of balanced diets is often limited to the affluent population group mostly located in the urban areas. The bigger proportion of Ethiopia's population is located in the rural areas. While access to food may not always be a problem, food diversity is limited and depends on the region. Hence the level of micronutrient deficiency in specific vulnerable group and the general population is high. Therefore **it is recommended that mandatory fortification of staple foods with multiple micronutrients should be initiated and scaled up.**
- e. **Promotion of Public-Private partnerships:** Public-private partnerships could be promoted as a strategy of engaging the private sector (especially in the food production and processing industry) to better understand and incorporate the health and nutritional needs of the population in their products, promotions and distribution mechanisms. This might also address the constraints (such as tax subsidies on processing technology equipment, fortificants, etc) of the public sector related to coming up with the right products.
- f. **Increase efforts and explore further opportunities in Biofortification:** Given that most rural communities practice subsistence farming and may not be able to access fortified food products due to either remoteness or affordability, bio fortification of common staple such as bean, maize, sweet potatoes may be promoted through the Ministry of Agriculture and other existing mechanisms in order to allow households practicing subsistence farming access better improved food commodities from own production.
- g. **Increase nutrition sensitization in existing sector activities:** Sensitization may include developing of 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 Ethiopia was last updated in 1969.
- h. **Promote the nutrition service delivery of adolescents:** In a country like Ethiopia where there is high rate of malnourished adolescent which is coupled by high teenage pregnancy, high levels of stunting can be predicted. To break the intergenerational cycle of malnutrition, **programs that address the nutritional needs of adolescents should be implemented.**

# Recommendations (continued)

## 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.

### Improvements in the Policy Environment:

- An enabling policy environment to facilitate planning and implementation of the above recommendations.
- 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 feeding programmes.
- Tax subsidies on fortificants and other food processing and agricultural technology and equipment.

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

- In order to successfully implement the NNP, the Office of the Prime Minister (OPM) Nutrition Action Plan secretariat has been developed to coordinate implementation. **This secretariat must be supported in the multi-sectoral coordination of the implementation of the national nutrition plan.**
- A clear recommendation of this study is that **Ethiopia must review their national development frameworks to ensure that the reduction of the stunting prevalence is an outcome indicator of their social and economic development policies.** 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 perspectives. Stunting can be an effective indicator of success in larger social programs.
- This study encourages countries not to be content with “acceptable” levels of stunting; equal opportunity should be the aspiration of every country in the continent. In this sense, **it is recommended that aggressive targets are set in Ethiopia for the reduction of stunting that go beyond proportional reduction, to establish an absolute value as the goal for the country at 20% by the year 2025.** This interim value will demonstrate long term commitment and its achievement will set the basis for stronger efforts towards the elimination of child undernutrition in Ethiopia.
- The achievement of this aggressive goal cannot be reached from just the health sector. In order to be able to have a decisive impact on improving child nutrition, a **comprehensive multi-sectoral policy must be put in place, with strong political commitment and allocation of adequate resources for its implementation.** This plan should look to accelerate the actions on the determinants of child undernutrition such as inadequate income, agricultural production, improving gender equality and girls’ education, improving water supply and sanitation, but also by addressing deeper underlying determinants such as the quality of governance and institutions and issues relating to peace and security. To ensure sustainability of these actions, whenever possible, **the role of international aid must be complementary to nationally led investments, and further efforts have to be done in ensuring the strengthening of national capacity to address child undernutrition.**
- An important element that must be addressed to enhance the national capacity to address malnutrition is to improve the monitoring and evaluation systems. Currently, the assessments of the prevalence of child nutrition are carried-out with a periodicity of between 3 to 5 years. **Nevertheless, in order to be able to measure short term results in the prevention of stunting, a more systematic approach with shorter periodicity is recommended, of 2 years between each assessment.** As the focus on the prevention of child undernutrition should target children before 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.
- Lastly, it is crucial to further the understanding of the determinants of child undernutrition in each context. As an initial step, it is **recommended that the assessment of child nutrition also 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 these vulnerable families with appropriate incentives and innovative approaches within social protection schemes.







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## COHA Project supported by:



UN Economic Commission  
for Africa



World Food  
Programme