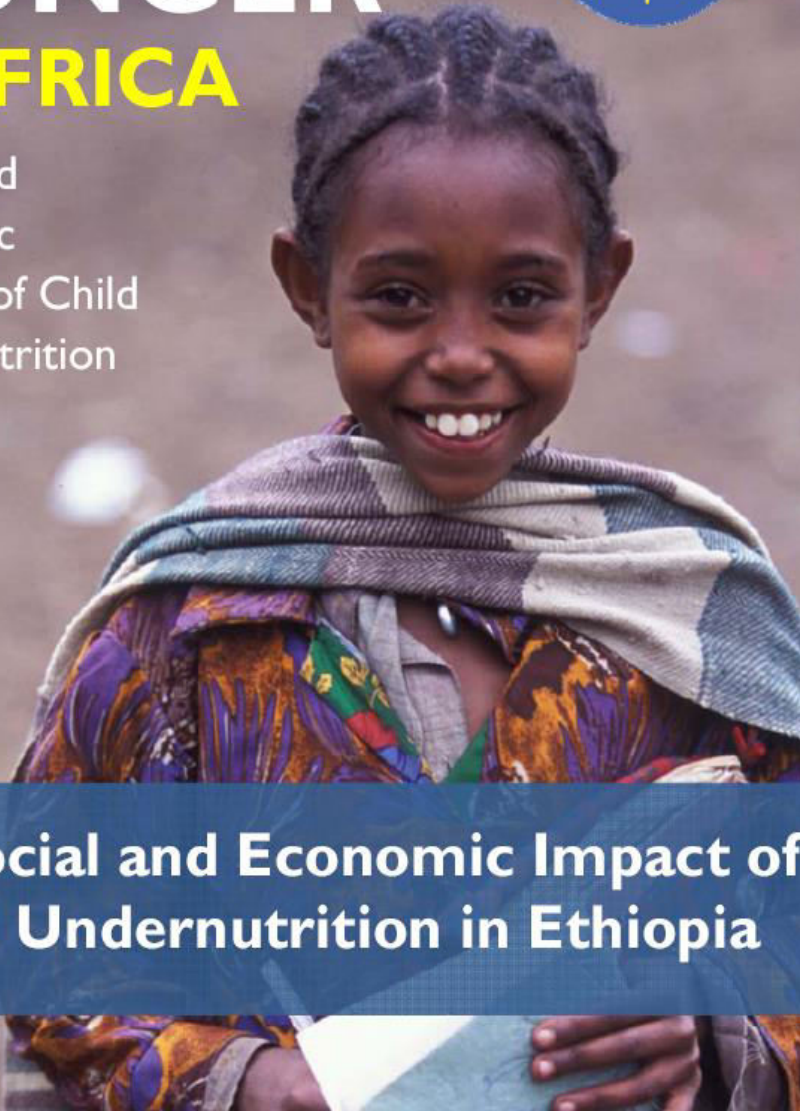


# The Cost of **HUNGER** in **AFRICA**

Social and  
Economic  
Impacts of Child  
Undernutrition



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



Addis Ababa, Ethiopia  
June 2014  
MN FORUM



# Introduction

- Ethiopia has one of the **world's fastest** growing economies, exceeding Global , Africa and Eastern Africa averages growth rates
- However this economic progress has occurred despite some of the **highest rates** of child under nutrition in the world.



# Nutrition Situation in Ethiopia

*Percent of children under age five who are:*

■ 2000 EDHS ■ 2005 EDHS ■ 2011 EDHS



Based on the new WHO Child Growth Standards



# Positive progress in Nutrition in Ethiopia

- This encouraging reduction is achieved through improvement in food and nutrition security, improvement on policy landscape for nutrition and scaling up of nutrition programs to reach more children and women.
- However, malnutrition is still a public health problem and remains a concern to the country's rapid economic development.

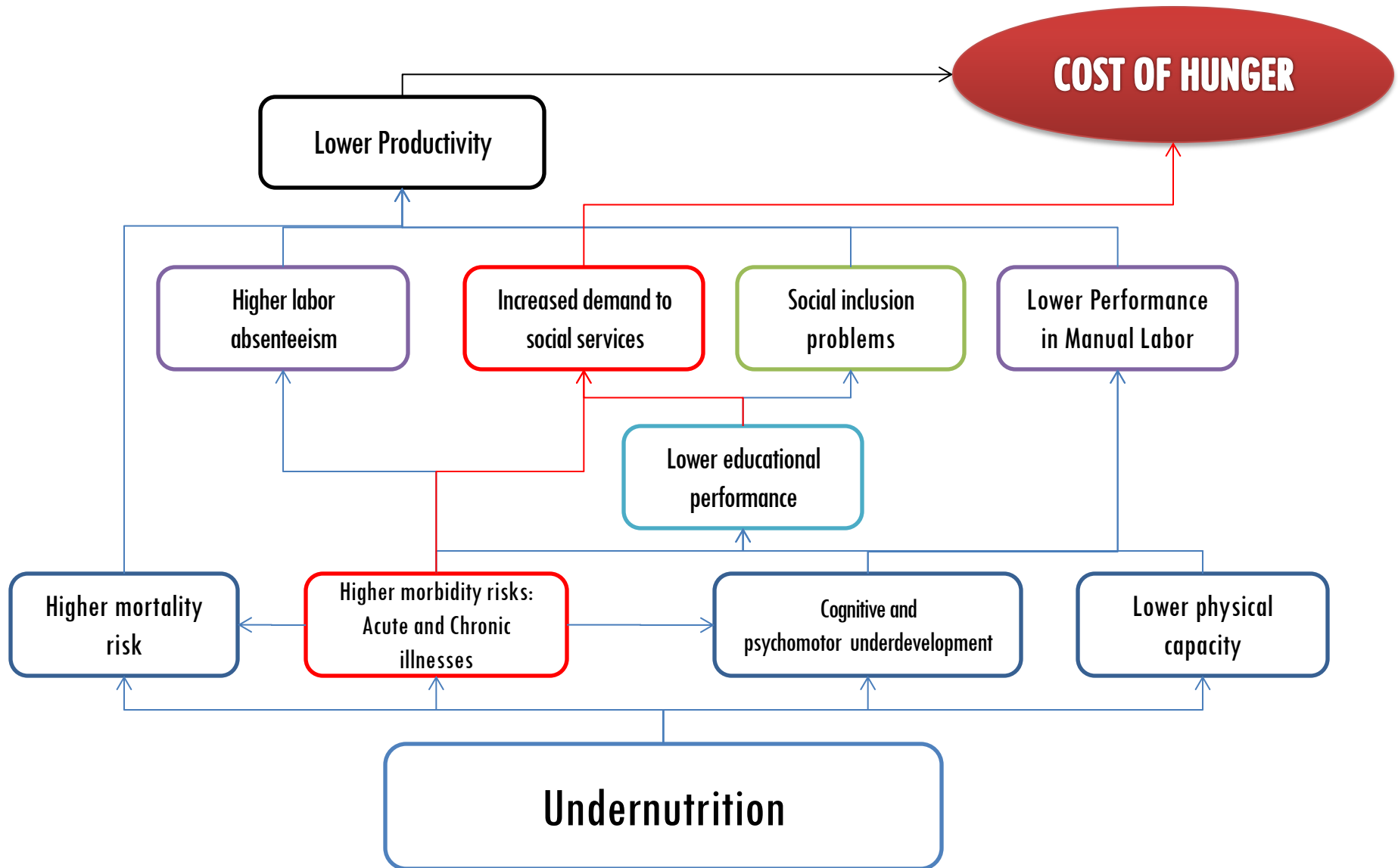


# Con,,,,

- What is the implication of this higher child under nutrition to Ethiopia ?
- Different studies has proven that having high rate of child under nutrition has a seriously impact on a given country both socially and economically



# Consequence of Under nutrition (Adapted model)



# Con,,,,

- This scientific fact indicates high under nutrition rate in Ethiopia impact an economic loss to the country as well as to an individual .
- However how much Ethiopian economy is affected for having high rate of child under nutrition is not known.
- This was the rational basis to conduct the present study on social and economic impact of child under nutrition in Ethiopia.



# Objective of COH Study in Ethiopia

## General objective

- To estimate the social and economic impact of child under nutrition in Ethiopia.

## Specific objectives:

- To estimate the cost of child under nutrition on health, education and productivity
- To estimate the potential saving of reducing child under nutrition





# Significance of the study

- The study result can be used as an advocacy tool to sensitize the government and nutrition partners to work hard on eradicating child under nutrition in Ethiopia.



# Methodology

- **National Team Establishment**
  - EHNRI, MOH, MOE, CSA, MOFED, WFP, WB, & WHO- Ethiopia country office
- **Data Collection**
  - Secondary data on demographic , economics , educational , social , nutritional and epidemiological were collected from both **national** and **international data set**.
  - Some primary data were also collected from St-paul hospital millennium medical college.
- **The COH methodology Adaptation**
  - The methodology was adapted from Latin America cost of hunger study and customized in to the African/Ethiopian context .



# Cost Analysis Model

$$TC^U = f(HC^U, EC^U, PC^U)$$

**Health Cost:**  
 $HC^U = f(HSC^U, IHC^U)$

**Education Cost:**  
 $EC^U = f(ESC^U, IEC^U)$

**Productivity Cost:**  
 $PC^U = f(ELC^U, MLC^U, MMC^U)$

Attention on associated pathologies

Access and time

Extra operation due to repetition

Access, time and materials

Differential productivity manual and non-manual

Potential productivity lost due mortality

Undernutrition



Higher Risk

# Con,,,,,

- The cost analysis focuses on under nutrition during the **initial stage of the life cycle** and **its consequences throughout life**.
- The impact of under nutrition on health was analysed for the population group aged from **birth to 59 month**.
- The impact on **education** were analysed for the age group **6-18 years**.
- The impact on **productivity** were analysed for the age group **15 to 64 years** old .



# Con,,,,,

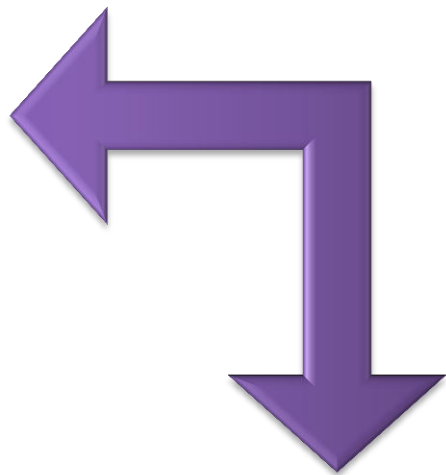
- The concept of **relative or differential risk** run by individuals who suffer from under nutrition during the first stage of life compared to a healthy child, were used to estimate the impact of under nutrition on health, education and productivity of an individual/ society.
- **Relative risk ratio**(factors) was used based on scientific findings on the relationship between under nutrition and productivity.
- The base year of analysis was **2009**



# Dimensions to the Cost of Hunger

**Incidental Retrospective:  
Current Economic Cost**

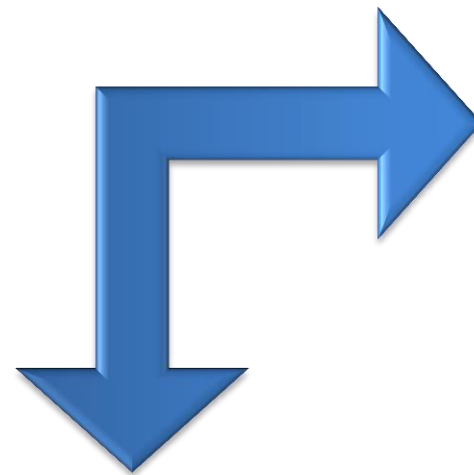
Looking Back to Estimate  
the Current Cost



Year 2009

**Prospective:  
Present Value of Cost that will be incurred**

Looking Forward to  
Estimate the Present Value



X

X+4

X+18

X+64

0-5 y

# Result

Effects and Costs of Child  
Under nutrition in 2009 in  
Ethiopia  
Retrospective

# SUMMARY OF COSTS OF CHILD UNDERNUTRITION, 2009

	Episodes	Cost In USD	Percentage of GDP
<b>Health Cost</b>			
LBW and Underweight	3,139,682	106.4 million	
Increased Morbidity	1,270,996	48.0 million	
<b>Total for Health</b>	<b>4,410,678</b>	<b>154.4 million</b>	<b>0.54%</b>
<b>Education Cost</b>			
Increase Repetition-Primary	152,488	7.9 million	
Increase Repetition-Secondary	-----	-----	
<b>Total for Education</b>	<b>152,488</b>	<b>7.9 million</b>	<b>0.03%</b>
<b>Productivity Cost</b>			
Lower Productivity- Non-Manual	1,938,632	53 Million	
Lower Productivity- Manual labor	24,273,274	1.1 billion	
Lower Productivity- Mortality	3,230,218	3.4 billion	
<b>Total for Productivity</b>	<b>29,442,124</b>	<b>4.6 billion</b>	<b>15.97%</b>
<b>TOTAL COST FOR ETHIOPIA IN 2009</b>		<b>4.7 billion</b>	<b>16.54%</b>

67 % WAP are stunted

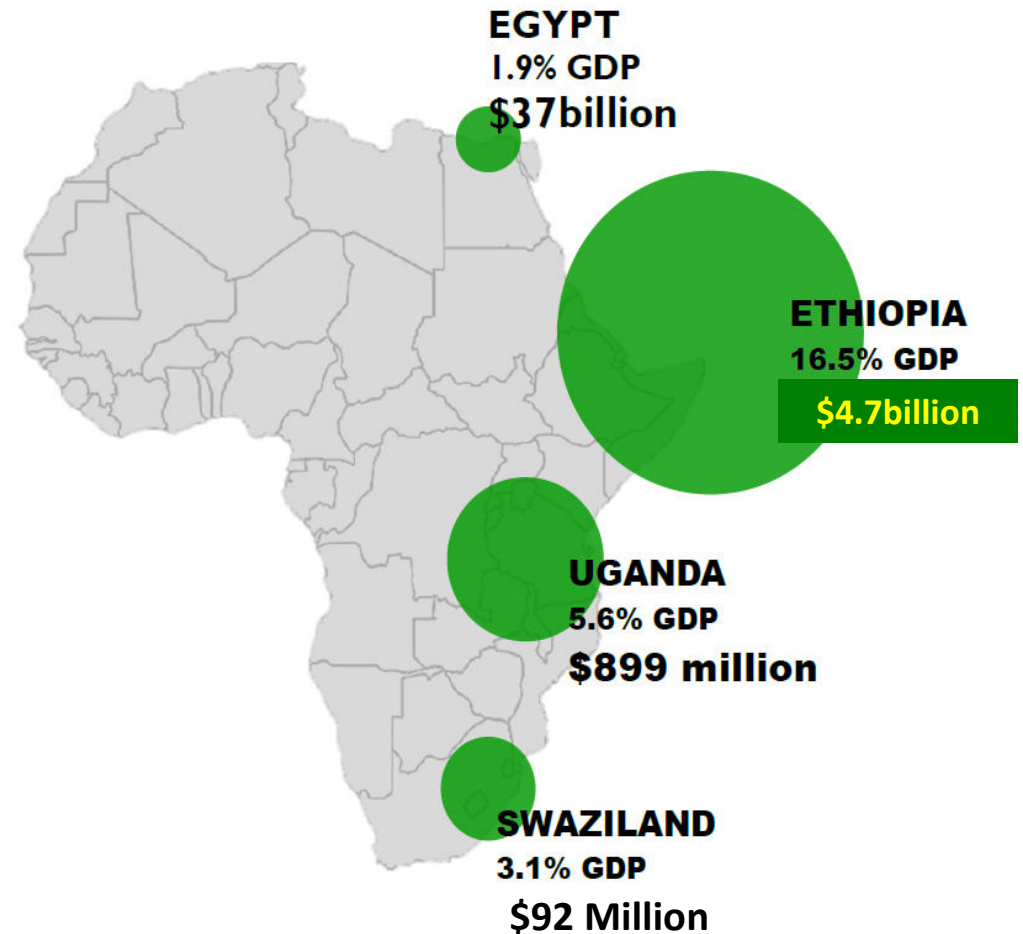
From 1945-1994, 4.8 billion working hours lost

4.7 billion USD



# The total estimated impact of child under nutrition is equivalent to 16.5% of GDP

Country	Losses in Local Currency	Annual Losses in USD
Egypt	EGP 20.3 billion	\$3.7billion
Ethiopia	ETB 55.5 billion	\$4.7billion
Swaziland	SZL 783 million	\$92 Million
Uganda	UGX 1.8 trillion	\$899 million



The aggregate cost estimation for Health, Education and Productivity are equivalent to between 1.9% to 16.5% of GDP



**Prospective, or  
potential saving,  
dimensions  
analysis social and  
economic impact  
of child under  
nutrition**

# ESTIMATED SAVINGS FOR EACH SCENARIO, 2009

ESTIMATED SAVING FOR EACH SENARIO, 2009 <i>(In millions of USD)</i>	Scenario#1.Cutting by half the prevalence of child under nutrition by 2025	Scenario#2. Reduce stunting to 10 %and underweight children to 5 % by 2025
<b>Health Cost Saving</b>		
Reduced Morbidity	239.4	318.04
<b>Education Cost Saving</b>		
Reduced Repetition- Primary	15.08	26.7
<b>Productivity Increments</b>		
Higher Productivity- Non-Manual	88.8	134.15
Higher Productivity- Manual labor	777.9	1,382.9
Higher Productivity- Mortality	4,888.8	10,682.2
<b>TOTAL SAVING</b>	<b>6,010</b>	<b>12,544</b>

**6.01 billion USD**

**12.5 billion USD**

# Required reduction rate to achieve the scenarios

Base line 2009 ; Stunting = 46.4 % and Underweight = 31%

SCENARIOS (2009-2025)	Required reduction of stunting per year	Required reduction of Underweight per year	Annual saving
Scenario 1	1.5 % reduction per year	1% reduction per year	\$376 million
Scenario 2	2.3% reduction per year	1.6 % reduction per year	\$784 million
NNP reduce stunting to 30 % (2015)	2.7 % reduction required	-----	\$160.17 million

# Conclusion

- According to the study, it can be concluded that Ethiopian economy is seriously affected for having high rate of child under nutrition with an estimated **4.7 billion USD** economic loss in health, education and productivity in the year 2009.
- The study also demonstrated that the reduction in child under nutrition will impact positively on educational investments, reduce the burden on the health system, and increase labor productivity



We choose..



**To pay the consequences of  
having under nutrition**



**To pay for eradicating under nutrition**

Source: Francisco Espejo's presentation on cost of hunger; Picture design by Jhoram Moya

# Recommendation

- The cost of hunger study in Ethiopia strongly suggest that special attention must be given to the early stages of life as the foundation of human capital, in order for the country to achieve sustainable human and economic growth.
- Hence, stronger effort must be exercised at national level to reduce child under nutrition through the implementation of the newly revised Ethiopian National Nutrition Program.



# Con,,,,

- Furthermore , child nutrition has to be monitored closely, as it evidences the effectiveness of the government social response.
- Overall, Ethiopia needs to continue significant investment in nutrition.





# Acknowledgment

- ❖ Special recognition has to be provided for
  - African Union Commission for the initiation and leadership of the study,
  - UNECA and UNWFP for financial and technical support, Particularly for Dr Carlos Acosta (ECA) with support of Rachel Quentin and Shewit Assefa
  - ECLAC , particularly Rodrigo Martinez and Amalia Palma
  - For the national implementation team members





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**Thank You**