The Cost of HUNGER in Malawi

Implications on National Development and Vision 2020

The Social and Economic Impact of Child Undernutrition in Malawi
Summary Report
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Social and Economic Impacts of Child Undernutrition in Malawi

Summary Report
This document 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". This initiative has been made possible by the institutional leadership provided to this project by Nkosazana Dlamini Zuma, Chairperson, African Union Commission (AUC); Carlos Lopes, Executive Secretary, ECA; Ertharin Cousin, Executive Director, WFP. The implementation of the agreement was coordinated by Mustapha Sidiki Kaloko, Commissioner for Social Affairs at the AUC, Thomas Yanga, Director of the WFP Africa Office and Takyiwaa Manuh, Director of Social Policy Development Division at ECA. The design and implementation of the study was directed by a Steering Committee jointly led by Wanja Kaaria from the WFP Africa Office, Janet Byaruhanga from the Health, Nutrition and Population Division of the Social Affairs Department at the AUC.

Special recognition goes to the National Implementation Team (NIT) in Malawi, as they were responsible for collecting, processing and presenting results. The team was guided by the Principal Secretary for Economic Planning and Development, Ted Sitimawina and coordinated by the Acting Director for Monitoring and Evaluation in the Ministry of Finance, Economic Planning and Development, Victoria Geresomo. Further recognition goes to members of the NIT such as Hamilton Kamwana, Simon Mulungu and Ernest Falinya from Ministry of Finance, Economic Planning and Development; Felix Pensulo Phiri, Susan Mwafulirwa and Gideon Mphunda from Department of Nutrition HIV and AIDS; Macleod Mwale, Janet Guta and Tapiwa Ngulube from Ministry of Health; Robin Karonde from Ministry of Labour; Charles Mazinga and Luka Nyirongo from Ministry of Education Science and Technology; Agnes Mgomezulu, Evance Kazembe and James Chiromo from Ministry of Agriculture, Irrigation and Water Development; Maureen Tembo from Ministry of Gender, Children and Social Welfare; Isaac Chirwa from the National Statistical Office, Lazarus Gonani from WFP, Jecinter Okech from UNICEF, Beatrice Mtumuni from Lilongwe University of Agriculture and Natural Resources for collecting the data and reviewing the report. Special thanks also go to members of Nutrition group and Donor committee on Nutrition Violet Orchardson from USAID, Mutinta Hambayi from WFP, Piyali Mustaphi from UNICEF, Stacia Nordin from FAO, Julita Manda from World Bank, and Alice Nkoroi from Food and Nutrition Technical Assistance III Project (FANTA) for their invaluable input to the report.

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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 s/he lives, learns and works.
Foreword

Malawi has made remarkable progress in improving child health outcomes as evidenced by reduction in infant and under-five mortality. However, there has been slow progress in reducing malnutrition. Currently, the country has high levels of stunting among under-five children, which is an indication that chronic food and nutrition insecurity are still prevalent. The high prevalence of malnutrition has impacted greatly on education and health outcomes.

The Cost of Hunger in Africa Study, which was commissioned by the African Union and supported by the United Nations Economic Commission for Africa and the World Food programme, in which Malawi participated, has confirmed the magnitude of the consequences that child malnutrition have on health, education as well as on the national economy. The study has highlighted that the country has incurred huge economic losses associated with under nutrition, the highest being the cost in loss of potential productivity.

The study findings have clearly shown that adequate nutrition is critical for one's physical and intellectual development, and work productivity, hence an integral element for the socio-economic development. It is in this context that we are determined as a Government, that moving forward; we need to channel adequate resources towards nutrition interventions. Government will also strengthen institutional and human capacities for effective delivery of nutrition services.

I would like to thank the Office of the Coordination of Humanitarian Affairs, Rockefeller Foundation, and the World Food Programme for providing financial support towards the production of the Report. Special thanks should also go to the United Nations Economic Commission for Africa and the World Food Programme for their technical support.

It is my hope that the findings in this report will inspire all stakeholders to expedite the implementation of programmes to ensure that child under nutrition is reduced.

Goodall E. Gondwe
MINISTER OF FINANCE, ECONOMIC PLANNING AND DEVELOPMENT
10 Things Everyone Should Know about Child Nutrition in Malawi

1. The total annual costs associated with child undernutrition are estimated at MWK 147 billion (US$ 597 million), equivalent to 10.3% of GDP.

2. Today, 1.4 million or almost half of the children in Malawi are stunted.

3. Only 1 out of every 3 children with undernutrition are estimated to be receiving proper health attention.

4. Underweight children have a 30% increased risk of suffering from anemia.

5. 23% of all child mortality cases in Malawi are associated with undernutrition.

6. Child mortality associated with undernutrition has reduced Malawi’s workforce by 10.7%.

7. Stunted children are more likely to drop out of school, achieving 1.5 years less in education.

8. Of all school year repetitions, 18% are associated with stunting.

9. 66% of the adult population engaged in manual activities were stunted as children, representing an annual loss of MWK 16.5 billion (US$ 67 million) alone.

10. Eliminating stunting in Malawi is a necessary step for inclusive and sustained development in the country.

* Reference year 2012
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 United Nations 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 illustrates that child undernutrition is not only a social, but also an economic issue, as countries are experiencing significant economic loss as a result of current and past child undernutrition. The COHA study in Malawi is led by National Implementation Team (NIT), composed of experts from the Ministry of Economic Planning and Development (MEPD), National Statistical Office of Malawi (NSO), Ministry of Health, Ministry of Agriculture Irrigation and Water Development (MoIWD), Ministry of Labour (MoL), Ministry of Gender, Children and Social Welfare (MOGCSW), Ministry of Education, Science and Technology (MOEST), Lilongwe University of Agriculture and Natural Resources (LUANAR), United Nations Children’s Fund (UNICEF) as well as from WFP-Malawi.

During the implementation process of the study, secondary datasets were obtained from the National Statistics Office of Malawi, Malawi Third Integrated Household Survey (IHS3-2010-2011), Demographic and Health Survey (DHS-2010), Statistical Yearbook 2011, Education Management Information System (EMIS-2012), Household Basic Education Cost in Malawi (2013), Malawi Multiple Indicator Cluster Survey (MICS-2006), Malawi Public Expenditure Review (2013), Malawi Government Financial Statement (2012-2013) while primary data were collected from Malawi Central Drug Store, Queen Elizabeth Central Hospital in Blantyre and Zomba Referral Hospital.

The COHA model is used to estimate the additional cases of morbidities, mortalities, 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.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 years</td>
<td>Undernourished children are at higher risk of 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.</td>
</tr>
<tr>
<td>6-18 years</td>
<td>Stunted 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.</td>
</tr>
<tr>
<td>15-64 years</td>
<td>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.</td>
</tr>
</tbody>
</table>
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.
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 MWK)

<table>
<thead>
<tr>
<th>Pathology</th>
<th>Incremental Morbidity</th>
<th>Cost in Millions of MWK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>74%</td>
<td>3,552.5</td>
</tr>
<tr>
<td>Low Birth Weight/Intrauterine Growth Restriction</td>
<td>5%</td>
<td>5,834.1</td>
</tr>
<tr>
<td>Anaemia</td>
<td>8%</td>
<td>267.1</td>
</tr>
<tr>
<td>Acute Diarrhoeal Syndrome</td>
<td>8%</td>
<td>1,046.5</td>
</tr>
<tr>
<td>Acute Respiratory Infection</td>
<td>1%</td>
<td>86.6</td>
</tr>
<tr>
<td>Fever</td>
<td>4%</td>
<td>598.8</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>11,385.8</td>
</tr>
</tbody>
</table>

Distribution of Cost to Families and the Public Health System, (in Millions of MWK)

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

23% of child deaths are associated with undernutrition. There are an estimated 81,783 additional annual cases of child mortality associated with child undernutrition, in the period from 2008-2012.
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 Malawi
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 a lower cognitive and physical capacity than children who were able to stay healthy in the early stages of life.

Repetition Rates by Nutritional Status

According to official government records, 818,138 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 20.6 percent, while the repetition rate for non-stunted children was 15.2 percent. Given this incremental differential risk of 5.4 percentage points, the model estimates that 147,044 students or 18 percent of all repetitions in 2012 were associated with stunting.

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.

Costs of grade repetitions associated with undernutrition

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Public Costs</td>
<td>1.185 billion MWK</td>
</tr>
<tr>
<td>Total Cost to Families/caretakers</td>
<td>2.23 billion MWK</td>
</tr>
<tr>
<td>Total Cost</td>
<td>3.4 billion MWK</td>
</tr>
</tbody>
</table>
Results in Education

Students who are stunted are also more likely to drop out of school. The data from Malawi 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.
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.
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.

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 36% of the population in Malawi 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 Malawi, in which the stunted population has on average, 1.5 years less of education, the economic loss in non-manual activities is estimated at 25.05 billion MWK, which is equivalent to 1.76% of the GDP in 2012.

On the other hand, for manual intensive activities, where 64% of Malawian 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 16.5 billion MWK which is equivalent to 1.15% of GDP.

Losses in Potential Productivity in Manual Activities associated with Stunting

<table>
<thead>
<tr>
<th>Age in 2012</th>
<th>Population working in manual labour who were stunted as children (In thousands of people)</th>
<th>Loss in productivity due to stunting (In millions of MWK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24</td>
<td>1,439,163</td>
<td>7,199</td>
</tr>
<tr>
<td>25-34</td>
<td>907,704</td>
<td>4,799</td>
</tr>
<tr>
<td>35-44</td>
<td>474,046</td>
<td>2,287</td>
</tr>
<tr>
<td>45-54</td>
<td>287,257</td>
<td>1,308</td>
</tr>
<tr>
<td>55-64</td>
<td>185,972</td>
<td>861</td>
</tr>
<tr>
<td>Total</td>
<td>3,294,142</td>
<td>16,455</td>
</tr>
<tr>
<td>% of GDP</td>
<td></td>
<td>1.15%</td>
</tr>
</tbody>
</table>
Undernourished children have a higher risk of dying compared to children who are not underweight.

The COHA model estimates that 800,566 people are absent from the workforce due to mortality associated with undernutrition. This represents 10.7% of the total working age population (15 to 64) in 2012, and would have increased productivity in excess of 1.7 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 90.8 billion MWK, which represents 6.4% of the country’s GDP for 2012.

Total losses in productivity for 2012 are estimated at approximately 132 billion MWK, which is equivalent to 9.3% of Malawian GDP.

The total losses in productivity for 2012 are estimated at approximately MWK 132.3 billion (US$ 537 million), i.e. equivalent to 9.3 percent of Malawi’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 68.6 percent of the total cost. The lost productivity in non-manual activities represents 18.9 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 12.4 percent of the total costs.

Distribution of Losses in Productivity

<table>
<thead>
<tr>
<th>Economic losses in non-manual activities</th>
<th>Economic Cost of Working Hours Lost</th>
<th>Lower productivity in manual activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>25,053</td>
<td>16,455</td>
<td>90,842</td>
</tr>
</tbody>
</table>

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Total losses associated with undernutrition are estimated at 147 billion MWK, or USD $ 597 million for the year 2012. These losses are equivalent to 10.3 % 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: The Cost of Inaction. Progress towards reducing the prevalence of stunting and underweight children remains at the level achieved in 2012

For the baseline, the progress towards reducing the prevalence of under nutrition 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 under nutrition 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 Malawi, this would mean a constant reduction of 1.81 percent points annually in the stunting rate from 47.1 percent (estimate for 2012) to 23.55 percent in 2025. A strong effort has to be carried out to achieve 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 2004 and 2010 was estimated at just 0.9 percent. This is, however, an improvement from the previous measurement, where between 2000 and 2004, the average annual rate of progress in the reduction of stunting was only 0.53 percent.

Scenario #2: The ‘Goal’ Scenario. Reducing stunting to 10% and underweight to 5% 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. In Malawi, the progress rate required to achieve this scenario would be 2.85 percent annual reduction for a period of 13 years, from 2012 to 2025.

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 than have a direct contribution in national productivity.

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.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Scenario #1: Halving the Prevalence of Child Undernutrition by 2025</th>
<th>Scenario #2: The ‘Goal ‘Scenario: “10 and 5 by 2025”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MWK (in Millions)</td>
<td>USD (in Millions)</td>
</tr>
<tr>
<td>Total Potential Savings (2012-2025)</td>
<td>197,401</td>
<td>800</td>
</tr>
<tr>
<td>Average Annual Savings (2012-2025)</td>
<td>15,185</td>
<td>62</td>
</tr>
<tr>
<td>Annual percentage reduction of stunting necessary (2012-2025)</td>
<td>1.81%</td>
<td></td>
</tr>
</tbody>
</table>

Current and Required Progress to Achieve Goal Scenario for 10 and 5 for 2025

- Average Progress rate in reduction of stunting from 2000 to 2010 0.68% Annually
- Average Progress rate in reduction of underweight from 2000 to 2010 0.77% Annually
- Average Progress rate Required for 23% target 1.81% Annually
- Average Progress rate Required for 10% target 2.85% Annually
- Average Progress rate required for 5% target 0.59% Annually
Conclusions

The Government of Malawi has put forth its Growth and Development Strategy II (MGDS II) 2011-2016, which strives for a Malawi that is a “a God-fearing nation that will be secure, democratically mature, environmentally sustainable, self-reliant with equal opportunities for and active participation by all, having social services, vibrant cultural and religious values and being a technologically driven middle-income economy”. In this vision, which was constructed through an extensive participation process, nine pillars have been identified, and key indicators and targets have been defined that would help to monitor the social and economic development of the country. The Cost of Hunger in Malawi presents a clear opportunity to better understand the role that child nutrition can play for the achievement of the MGDS 2011-2016.

Despite significant progress made in recent years, results from the Cost of Hunger study have shown that almost half of all children under five in Malawi (1.268 million out of 2.765 million children) were affected by stunting in 2012, and almost 350,715 children were underweight. This situation is especially critical for children between 12 and 23 months, out of whom 54.3 percent are affected by stunting.

From a health sector perspective, the study indicates that child under nutrition generates health costs equivalent to 35 percent of the total public budget allocated to sector. These costs are due to episodes directly associated with the incremental quantity and intensity of illnesses that affect underweight children as well as the protocols necessary for their treatment. It is also estimated that 1 out of every 3 children are not receiving proper health attention in Malawi. As the health coverage expands to rural areas, there will be an increase of people seeking medical attention, which can potentially affect the efficiency of the system to provide proper health care services.

Further, the study has revealed that 23 percent of all cases of child mortality between 2008 and 2012 are associated with a higher risk of under nutrition. Overall, it is estimated that 10.7 percent of the working age population was absent from the workforce in 2012 due to child mortality associated with under nutrition. Hence, a preventive approach to stunting and under nutrition can help reduce stunted deaths and the incremental burden to the public sector, while abating the costs that are currently being covered by families. In addition, a reduction of child under nutrition has proved to have a significant and positive impact on life expectancy – contributing to meet and possibly exceed the health targets set in the MGDS II and Vision 2020.

From the educational perspective, the study indicates that children who were stunted before the age of five experienced 5.4 percent higher repetition rate in school. As a result, 18 percent of all grade repetitions in school were associated with the higher incidence of repetition that is experienced by stunted children. Also 89 percent of these grade repetitions occur in primary school, suggesting that a reduction in the stunting prevalence could also support an improvement in school results and progression, and reduce preventable burdens to the educational system. Overall, a reduction in the prevalence of stunted children can have an important impact on improving school enrolment, transitions, performance and grade retention, all of which are key indicators outlined in MGDS II 2011-2016.

Increasing the educational level and maximizing the productive capacity of the population dividend are key elements to boost competitiveness and development in the country. This represents a critical opportunity in Malawi where the population under 15 years is estimated to be 46 percent of the total population. This youth must be equipped with the skills necessary to compete on the labour market. As there is no single cause for under nutrition, a comprehensive, multi-sectoral strategy that considers improving the quality of education and the conditions required for school performance must be put in place. Indeed, this study demonstrates the extent to which stunting is a barrier to attendance and retention; and in order to effectively elevate the educational levels and improve individuals’ labour opportunities in the future, this barrier must be removed.

Another important phenomenon that is evolving at an impressive pace in Malawi, and that is often not associated with the impacts of child under nutrition, is urbanization. As stated in the current MGDS II, Malawi is experiencing at 6.3 percent annual growth in urbanization which also have an impact on the labour market, and employment opportunities An important element of preparing for this shift is to ensure that the workforce is ready and equipped to make a transition towards a more skilled labour, and the economy is able to generate new productive jobs. By preventing child stunting, hence avoiding the associated loss in physical and cognitive capacity that hinders educational attainment and individual productivity, people are in a better position ensured more equal opportunities for success.

The study estimates that almost 60 percent of the current working age population in Malawi suffered from stunting when they were children. This population has achieved, on average, lower schooling levels than those who did not experience growth retardation – i.e. by 1.5 years. As the country continues to urbanize, and an increasing number of people enter skilled labour, this loss in human capital will be reflected in reduced productive capacities of the population.

Overall, the total loss in productivity for 2012 represents 9.3 percent of Malawi’s GDP, largely due to reduced productivity associated with under nutrition related mortality. Further, income differentials in manual labour, due to the lower physical and cognitive capacity of people who suffered from growth retardation as children, represent important costs to both individuals and the society as a whole. It is therefore high time for Malawi to prioritize the elimination of child under nutrition, improve the educational level of the population, and prepare the youth for better job opportunities. A reduction of stunting will also impact positively on the productive levels of rural economies, as healthy workers in agricultural environments are expected to become more productive, competitive and earn better wages.
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 under nutrition. The model estimates that in Malawi, a reduction by half of the current levels of child under nutrition by the year 2025 can generate annual average savings of MWK 15,184.7 million (US$ 61.6 million). An additional scenario shows that a reduction to 10 percent stunting and 5 percent underweight over the same period could yield annual average savings of MWK 21,193.4 million (US$ 85.9 million). These economic gains -that result from both a decrease in morbidity and school repetition and an increase in manual and non-manual productivity, present an important economic argument for increasing proper attention and investments in child nutrition.

Overall, the study has proved that chronic child undernutrition can no longer be considered a sectoral issue, as both its causes and consequences depend on policy interventions across numerous sectors. Indeed, stunting reduction will require coordinated action from the health, education, social protection, agriculture and other sectors, and its improvement will represent a major step forward towards a more inclusive and equitable development in the country.
Summary of Recommendations

The results of this study encourage the government of Malawi to leverage policy action for a drastic reduction of stunting in the next ten to fifteen years. In order to define interventions towards a clear elimination of stunting in Malawi, national experts and stakeholders have jointly reflected on a set of key actions that would contribute effectively to this goal. These include:

**Set ambitious targets to reduce under nutrition in Malawi.** Emphasizing on reducing stunting to 23 percent by the year 2025 with an average annual reduction by 2 percent and develop additional nutrition-sensitive indicators to address child malnutrition. In addition establishing a national nutrition database to ensure effective monitoring of child under nutrition targets and indicators over time.

**Scale up high-impact nutrition interventions as outlined in national nutrition policy & strategy.** It is imperative to formulate and implement programmes that can have long-lasting improvements in the nutrition status thus government should establish innovative financing mechanisms for actors involved in nutritional programmes –by funding key sectors, including for the expansion of health coverage and health insurance mechanisms. The MGDS 2011-2016 should integrate nutrition, and in particular the reduction of stunting, in all sectoral policies and strategies. The national nutrition act under way should serve as an important catalyst in this direction. On the other hand, decentralization is an important step to ensure proper allocation of funds for nutrition under the leadership of the Ministry of Local government and establishing comprehensive social protection programmes that are more nutrition-sensitive. Another important element is strengthening health and nutrition programmes in school focusing interventions on the prevention of child malnutrition in the first 1000 days of life. When it comes to agriculture building on existing initiatives such as the Pan-African Nutrition Initiative (PANI) or the Comprehensive Africa Agriculture Development Programme (CAADP), which focus on reducing hunger and improving food and nutrition security is a vital component to generate multiplier effects in all sectors. Also the private sector needs to play a more important role alongside the government and development partners.

**Communication & Advocacy.** Increasing awareness and advocacy of key stakeholders at all levels on the social and economic impacts of child under nutrition to ensure nutrition with a focus on addressing stunting, receives the highest possible level of commitments along with strengthening the capacity and role of the ministry of information in communicating and advocating for correct nutrition at all levels. Another important element is to scale up the potential and role of existing structures to increase advocacy action and bring in the voice of non-state actors in nutrition interventions. And also putting in place a harmonized national strategy that coordinates nutrition advocacy activities and building the capacity of the government for promoting advocacy and effectiveness of nutrition interventions as well as promoting awareness and behavioral change in the populations to adopt good practices of hygiene and proper nutrition in favour of children, pregnant women, lactating and non-lactating mothers by creating awareness on the importance of nutrition and hygiene. More importantly promoting nutritional practices based on a better use of local food potential.

**Coordination.** Nutrition is currently integrated in five key social sectors, including agriculture, health, education, gender/children/social welfare, and local governance. There is a need to strengthen the role of the Department of Nutrition, HIV, and Aids (DNHA) as the national coordinating body for nutrition-related interventions and also build up coordination and dialogue among sectoral ministries, implementing partners and key stakeholders to build a coherent and integrated policy response around nutrition and stunting. The role of the private sector and civil society organizations – including the Civil Society Organizations Nutrition Alliance (CSONA) – could be influential in this regard.

**Monitoring & Evaluation.** Scale up and strengthen nutrition M&E rollout, ensuring stakeholders’ awareness and ownership of their roles in sectoral data collection (agriculture (AMIS), health (HMIS), education (EMIS), etc.), and analysis from frontline workers and community members to national institutions including the National Statistical Office (NSO) to strength the program.