The Social and Economic Impact of Child Undernutrition in Namibia

Summary Report

THE COST OF HUNGER IN AFRICA | COHA

SOCIAL AND ECONOMIC IMPACT OF CHILD UNDERNUTRITION

NAMIBIA

Implemented by

The Social and Economic Impact of Child Undernutrition in Namibia

Summary Report

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Foreword

The Namibia Cost of Hunger in Africa (COHA) Report

Over the past years, worldwide stunting have decreased by quarter globally from 2000 to 2018. But it rose in all sub-regions of Sub-Saharan Africa in part due to poor diets. Despite an overall good picture of economic growth for the continent before the COVID 19 pandemic, some Africans are being left behind.

Namibia has made significant 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. The country has made an improvement in reducing stunting in children; however, stunting rates still remain unacceptably high at 34.4 percent among children under five years, which is an indication that chronic food and nutrition insecurity are still prevalent.

Chronic child malnutrition affects children under five years, affect the productivity of the country and has an impact throughout people's lives. Hence Chronic child malnutrition can no longer be considered a sectoral issue, as both its causes and solutions are linked to social policies across numerous sectors. It requires active interventions from health, education, social protection and social infrastructure perspectives.

Malnutrition goes beyond a lack of food consumption and refers to an unhealthy condition that develops when your body does not get enough of the vitamins, minerals and other nutrients it needs to function properly. It can occur when you don't eat enough food or you are not eating enough healthy food.

Hence, understanding the magnitude, the severity and the spread of cost of hunger and malnutrition is the first important step in addressing social evil that threatens the unity of families and communities in our country. Indeed malnutrition is a multidimensional phenomenon and therefore there is no single solution to address it; however, I am convinced that it can be addressed through domestic policies and localised and targeted programmes and projects.

It worth noting that, undernutrition deprives children of necessary nutrients during the most critical period of their growth, with both mental and physical consequences that are irreversible and permanent. It impact on economic progress and imposes additional costs on society, with added pressure on the education and health system.

Children suffering from undernutrition begin life with terrible handicap, with higher probabilities of dying in the first days of life than those born with adequate weight and size. They are also more vulnerable to infections, which reduce their appetite, prolong their undernutrition and inhibit growth.

Thus, we can clearly point out that in addition to the social problems involved in child undernutrition, there are adverse economic consequences, these costs are not limited to the life cycle of each individual, but affect that person's children who will also be more vulnerable. This is how undernutrition and poverty are continued.

This study comes at an important time for Namibia. Now more than ever, it is evident that malnutrition, in all its forms, needs to be addressed as a national priority. This analysis is demonstrating that Namibia has been able to make important progress in reducing the number of stunted, but more still need to be done to improve the prevailing situation.

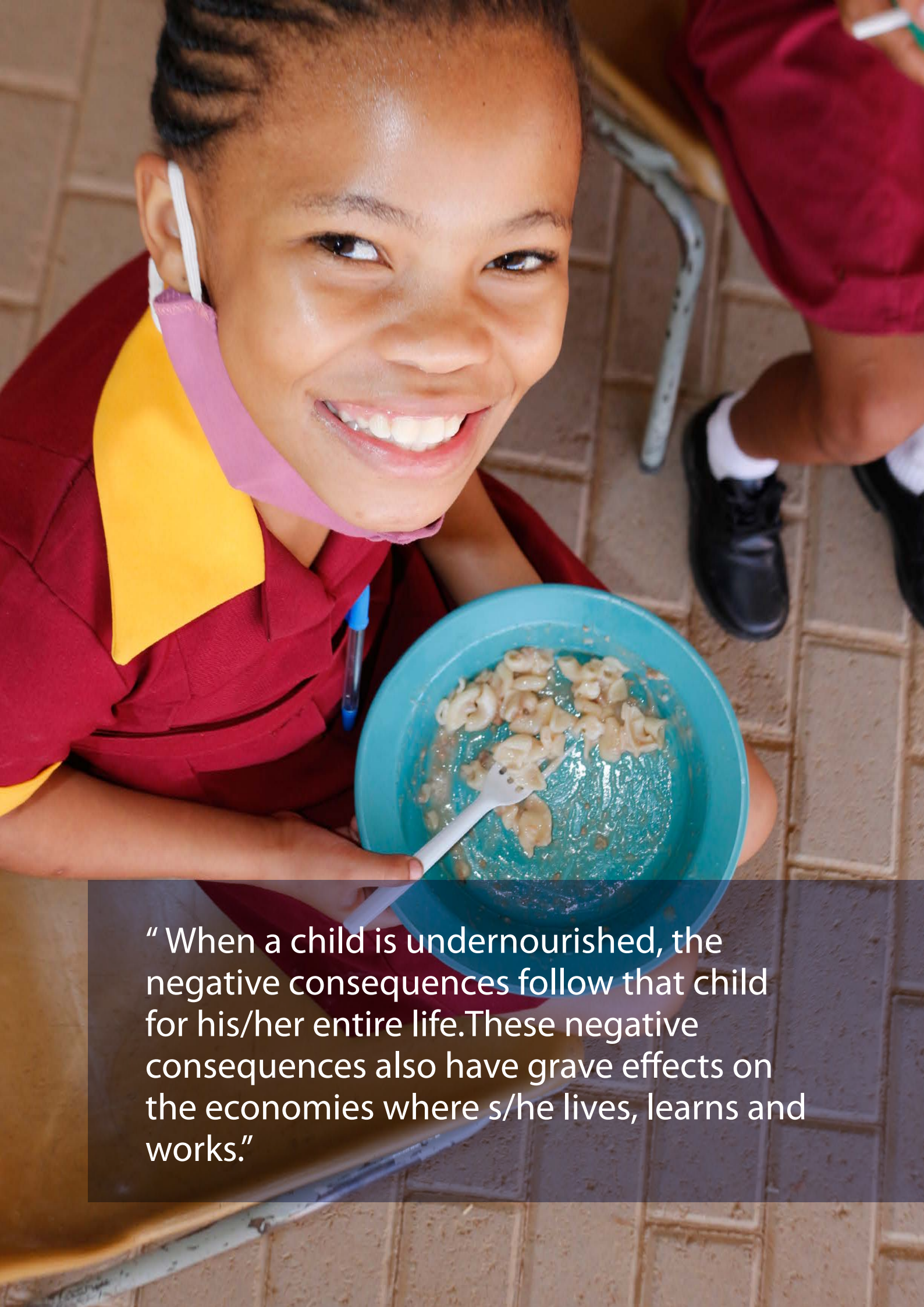
The study findings have clearly shown that adequate nutrition is critical for one's physical and intellectual development. It is in this context that we are determined as a government that we need to strengthen institutional and human capacities for effective delivery of nutrition services. We equally note the importance of statistics in terms of health data systems and consistent and recent health and demographic surveys.

I would like to thank all various institutions that were involved in producing this report, special thanks go to World Food Programme (WFP), Namibia; FAO, UNDP, UNICEF and GIZ Namibia for providing financial and technical support. I further thank the African Union Commission (AUC) with technical leadership from World Food Program- Africa Office (WFP) that supported and led the study at the continental level.

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 and help the children under five break the vicious cycle of hunger, poverty, low human capital development and low economic growth.

Obeth Mbuipaha Kandjoze

Director General of the National Planning Commission



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

Acknowledgement

The Cost of Hunger in Africa (COHA) Namibia Report on estimating the economic and social effects of child undernutrition has been prepared collaboratively by Government Ministries, Departments and Agencies, and Development Partners. It was prepared in line with Resolution 898 in which African Ministers of Finance, Planning and Economic Development reaffirmed the importance of undertaking the COHA study in African countries.

This initiative was made possible by the institutional leadership provided to this project by H. E. Moussa Faki Mahamat, Chairperson of the African Union Commission (AUC); Dr Ibrahim Mayaki, Executive Secretary, NEPAD; Ms Alicia Barcena, Executive Secretary, ECLAC; and H.E. Mr David Beasley, Executive Director, WFP. The implementation of the agreement was coordinated by H.E Mrs Amira Elfadil Mohammed Elfadil, Commissioner for Africa Union Commission Department of Health ,Humanitarian and social affair to the of the COHA study was undertaken by a joint steering committee led by Dr Margareth Agama-Anyetei from AUC.

We are grateful to the many individuals and institutions whose support and commitment made this study a reality and wish to take this opportunity to thank all of them for their immense contributions. This study involved a lot of financial and technical resources, without which the study would not have been possible. The lead role taken by National Planning Commission (NPC) is highly recognised for spearheading the launching of the study. Through a National Implementation Team, the National Planning Commission (NPC) chaired the coordination and implementation of the study co-chaired by the United Nations World Food Programme (WFP) in collaboration with Ministry of Health and Social Services (MoHSS), Ministry of Education Arts and Cultures (MoEAC), Ministry of Agriculture, Water and Land Reform (MAWLR), Namibia Statistics Agency (NSA), and development partners including German Society for International Co-operation (GIZ), United Nations International Children's Emergency Fund (UNICEF) and Food and Agricultural Organisation (FAO).

Sincere gratitude goes to Mr Sylvester Mbangu, Chief National Advice (NIT Chair) and Dr George Fedha, Country Director and Mr Elvis Odeke the Head of Programme World Food Programme (WFP) in Namibia (NIT CO-Chair) for their leadership, advice and direction. Special appreciation is extended to the COHA national coordinators, Mrs. Lihongeni Mulama (National Development Advisor- NPC) and Mrs Gloria Kamwi (Deputy Head of Programme - WFP). The Report would not have been possible without the advice and support of numerous staff who took part in the whole report cycle from training, providing data, primary data collection and other data collation working sessions and validation of the data, hosting consultations, data analysis, providing comments and advice and report writing. We would like to thank them for sharing their expertise and time. A special thank you is extended to the University of Namibia School of Pharmacy students who supported to collect primary data for the Health Protocol.

We thank the WFP Africa Office that played a key role in providing guidance and support at all stages of the Report's cycle. We would like to thank each of its members for their time, energy and enthusiasm, specifically Mr. Addisu Bekele, Ms. Priscilla Wanjiru and Ms. Beza Berhanu. Our sincere appreciation is also extended to WFP, GIZ and UNICEF for providing financial support towards the study. The COHA NAMIBIA NIT team.

Chair – NPC, Co-Chair - WFP

Health Protocol: Andreas Shipanga (MoHSS) – Group Chair, Dr Hilma Nangombe (MoHSS), Dr Joel Conkle (UNICEF), Frieda Teofelous (NSA); **Education Protocol:** Ndilimeke Shiyuka (NSA)- Group Chair, Ian Ikosa (NSA), Albertus Bernadu & Elizabeth Hamupembe (MoEAC), Hileni Shilongo and Frieda Shimpanda (NPC); **Productivity Protocol:** Tomas Kanyanga (NSA) – Group Chair, Ndapewa (NSA), Stephanus Sanda (MAWF), Maria Shifotoka (NPC).

Mr Elvis Odeke

Head of Programme WFP CO

Mrs. Wilhencia Uiras

Executive Director, National Planning Commission

Preface

Child undernutrition is one of the major challenges facing the world today, with the African continent facing the highest prevalence of child undernutrition. In a bid to curb the challenge, the African Ministers of Finance, Planning and Economic Development made a declaration, commonly known as Resolution 898, which underscored the importance of undertaking the COHA Study in African Countries in 2012. In 2014, the African Heads of State and Government made a commitment commonly known as the "Malabo Declaration" on Nutrition Security for Inclusive Economic Growth and Sustainable Development in Africa, where they called on governments to scale up implementation of the COHA study continent-wide.

Namibia's 5th National Development Plan (NDP5) 2017/18 – 2021/22 and several National Policies such as the Harambee Prosperity Plan II give prominence to reducing undernutrition and overweight. Namibia is also party to several international development blueprints including the global Sustainable Development Goals (SDGs) which endeavour to address child undernutrition by 2030, African Regional Nutrition Strategy (2015 – 2025), Africa Agenda 2063 and the World Health Assembly Targets for nutrition all of which aimed to address child undernutrition. Although there have been some improvement in the reduction of malnutrition in the country over the past decade, child undernutrition remains a persistent threat to the lives of Namibian children, particularly the under five year old. Evidence shows that malnutrition during childhood and pregnancy has many adverse consequences for child survival, development and long-term well-being. It is evident that investing in nutrition is judicious and beneficial as it improves health, by reducing morbidity and mortality, school performance, cognitive development and physical work capacity, which in turn, leads to increased productivity, socio-economic growth and development, and poverty reduction.

Notwithstanding the initiatives, child undernutrition remains a persistent threat to the lives of Namibian children, particularly those under five years. Evidence shows that malnutrition in childhood and pregnancy has many adverse consequences for child survival and long-term well-being. This results to far-reaching consequences for human capital, labour productivity, and is a major obstacle in the attainment of the overall goal of economic development. Cognizant of the burden of child undernutrition in terms of monetary loss and loss in the Gross Domestic Product (GDP) and well-being of Namibian citizens, the Government committed to undertake a study to estimate the economic and social effects of child undernutrition, the COHA in Africa: A Namibia Study. The study was undertaken by Government Ministries, Government Agencies including the National Planning and Commission (NPC), the Namibia Statistics Agency (NSA), Ministry of Health and Social Services (MoHSS), Ministry of Education, Arts and Culture, Ministry of Labour, Industrial Relations and Employment Creation (MLIEC); Ministry of Agricultural, Water and Land Reforms; including other Ministries in collaboration with various development partners, including World Food Programme (WFP), United Nations Children's Fund (UNICEF), FAO, UNDP, UNICEF, GIZ Namibia and several other stakeholders representing the interest of the Government.

The specific objectives of undertaking the COHA Namibian Study included estimating the social and economic impacts of child undernutrition, generating policy evidence to justify the need for increased investment in nutrition, and recommending actions to inform human capital development that will help bolster implementation of the Namibia's NDP, the Harambee Prosperity Plan and other commitments. The findings of the Study give policy insights that shall be key in the development and/or revision of key policies and strategies geared towards reducing child undernutrition in Namibia. The Government, our respective ministries, are fully committed to the implementation of the recommendations of this Study.

10 Things Everyone Should Know about Child Nutrition in Namibia

1. **Stunting has declined from 29% to 23.7% in Namibia.**
2. **In the last five years alone, it is estimated that 12,711 child deaths in Namibia were directly associated with undernutrition.**
3. **Most of the health costs associated with undernutrition occur before a child turns 1 year old.**
4. **22.6% of all child mortality cases in Namibia are associated with undernutrition.**
5. **23.7% of all repetitions in school are associated with stunting.**
6. **Stunted children achieve 13.9 % less in school education.**
7. **Child mortality associated with undernutrition has reduced Namibia's workforce by 3.6%.**
8. **43.1 % of the adult population in Namibia suffered from stunting as children.**
9. **The annual costs associated with child undernutrition are estimated at 11.1 Billion NAD , which is equivalent to 5.22 % of GDP.**
10. **Eliminating stunting in Namibia is a necessary step for sustained development in the country.**

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 Latin America and the Caribbean (ECLAC) 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.

The COHA model is used to estimate the additional cases of morbidity, mortality, school repetitions, and dropouts and reduced physical capacity that can be associated with a person's undernutrition status before the age of five. In order to estimate these social impacts for a single year, the model focuses on the current population, identifies the percentage of that population who were undernourished before the age of five, and then estimates the associated negative impacts experienced by the population in the current year. Using this information and the data provided by the Namibia National Implementation Team (NIT), the model estimates the associated economic losses incurred by the economy in health, education and potential productivity in a single year. The reference year used in the analysis of the study model is 2014, which is referred throughout the text as 'current year'.

During the implementation process of the study, secondary datasets were obtained from the Bank of Namibia , Ministry of labour, Namibia National Statistical Agency , Namibia Demographic and Health Surveys since 1992, National Health Profile, District Health Information System, National Accounts 2016, Namibia house hold Survey, Poverty Income Consumption and Expenditure Survey, Ministry of Finance and Economic Development, and national surveys while primary data were collected from Ministry of Primary and Secondary Education and Ministry of Health and Child Care from District and Mission Hospitals.

 0-5 years	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.
 6-18 years	Stunted1 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.

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.

WFP/Photolibrary

Results in Health

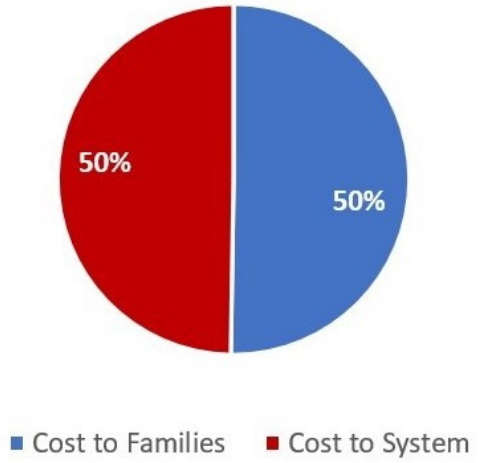
When a child is undernourished, he or she will have an increased chance of experiencing specific health problems.

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.

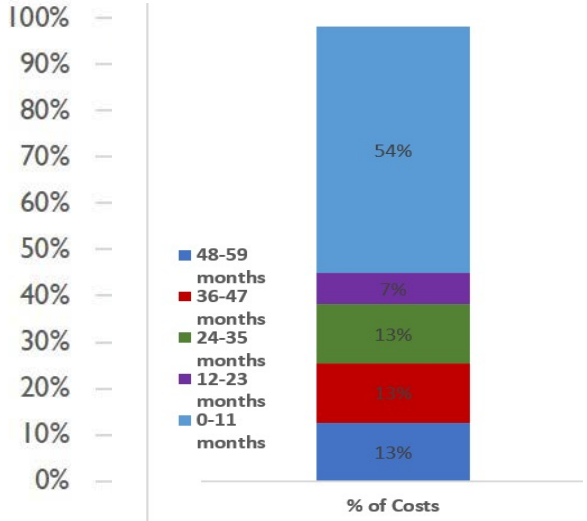
Health Cost of Undernutrition – Related Pathologies (2016 cost in millions of USD)

Pathology	% of episodes	Cost (in NAD)	Cost (in USD)	% of cost
Underweight	81.1%	61.7%	319.0	21.7
Low birth weight (IUGR)	1.4%	31.1%	160.6	10.93
ADS	8.9%	3.4%	17.4	1.19
ARI	1.3%	0.7%	3.8	0.26
Fever/Malaria	0.3%	0.2%	1.3	0.09
Anemia	7.0%	2.8%	14.4	0.98
Total Cost	**100%**	**100%**	**516.6**	**35.1**

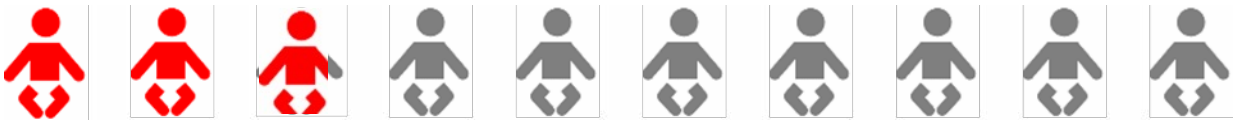
Distribution of Cost to Families and the Public Health System



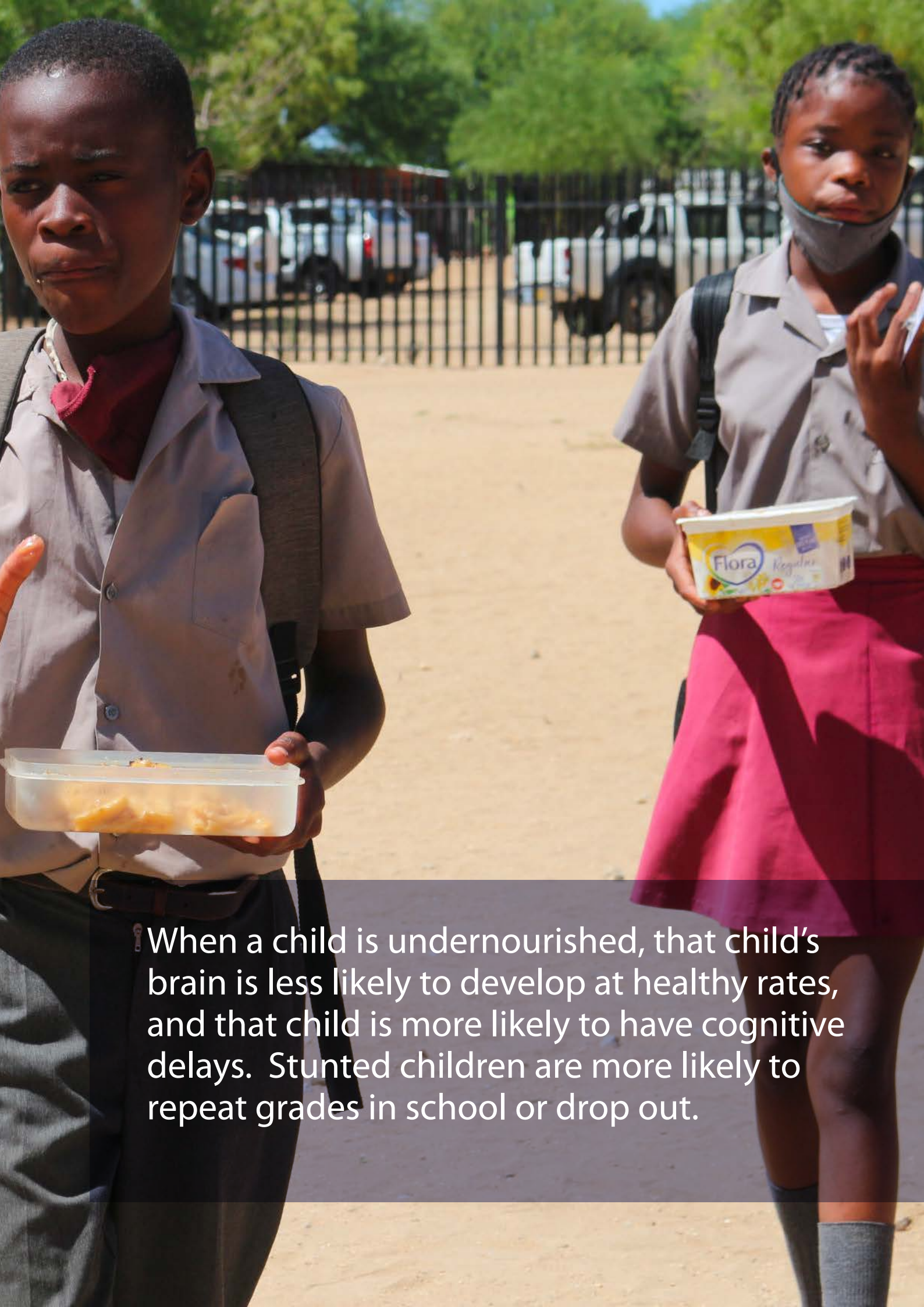
Distribution of cost by Age Group (in Percentage of Total Costs)



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



22.6% of child deaths are associated with undernutrition. There are an estimated 192,397 additional annual cases of child mortality associated with child undernutrition, in the period from 2010-2014.

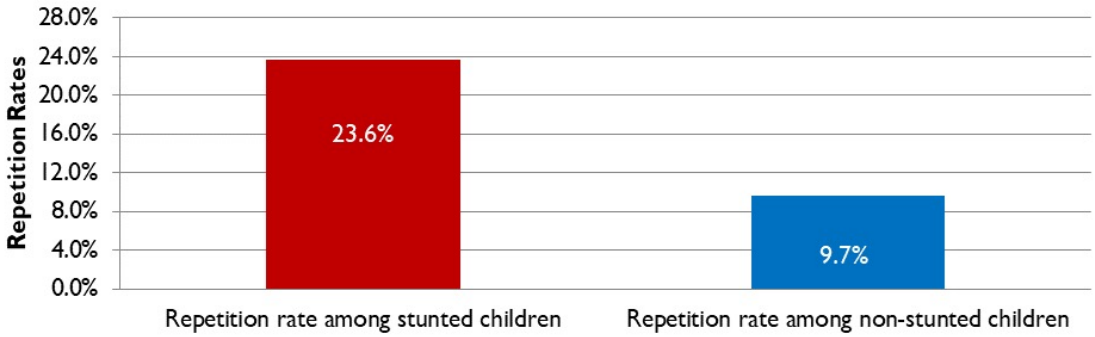


When a child is undernourished, that child's brain is less likely to develop at healthy rates, and that child is more likely to have cognitive delays. Stunted children are more likely to repeat grades in school or drop out.

Results in Education

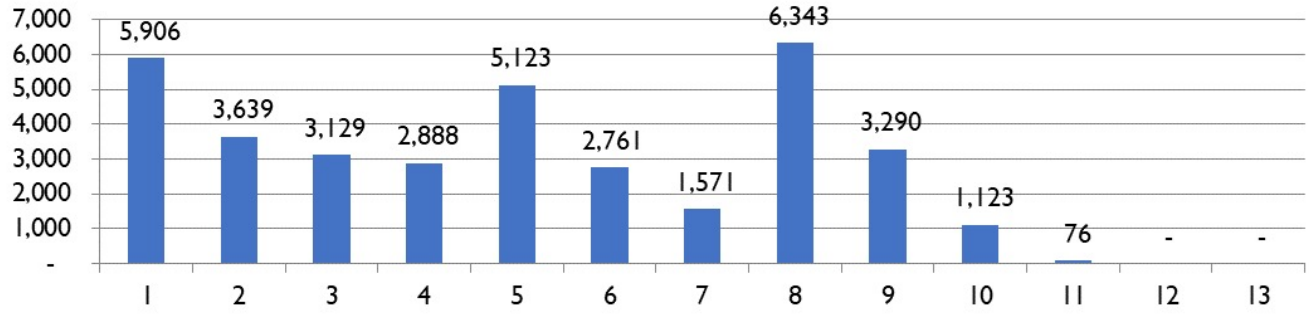
There are many potential causes for repetition and dropout; however, there is substantive research that shows that students who were stunted before the age of 5 are more likely to underperform in school50 and thus leading to repetition and or drop out. The number of repetition and dropout cases considered in this section result from applying relative risk factors of repeat- ing and dropping out (Daniel and Adair 2004) associated to stunted children to the information provided by the 2016 EMIS..

Repetition Rates by Nutritional Status



Based on official information provided by the Ministry of Education \ EMIS 2016 , **44,393** children repeated grades in **2016**. Using data on increased risk of repetition among stunted students, the model estimates that the repetition rate for stunted children was **23.6** percent, while the repetition rate for non-stunted children was **9.7** percent, i.e. an incremental differential risk of **13.9** percentage points for stunted children (Figure 4.4). Thus, given the proportion of stunted students, the model estimates that **35,697** students, or **80.4** percent of all repetitions in **2016**, were associated with stunting.

Repetition of stunted children, by Grade, 2018



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

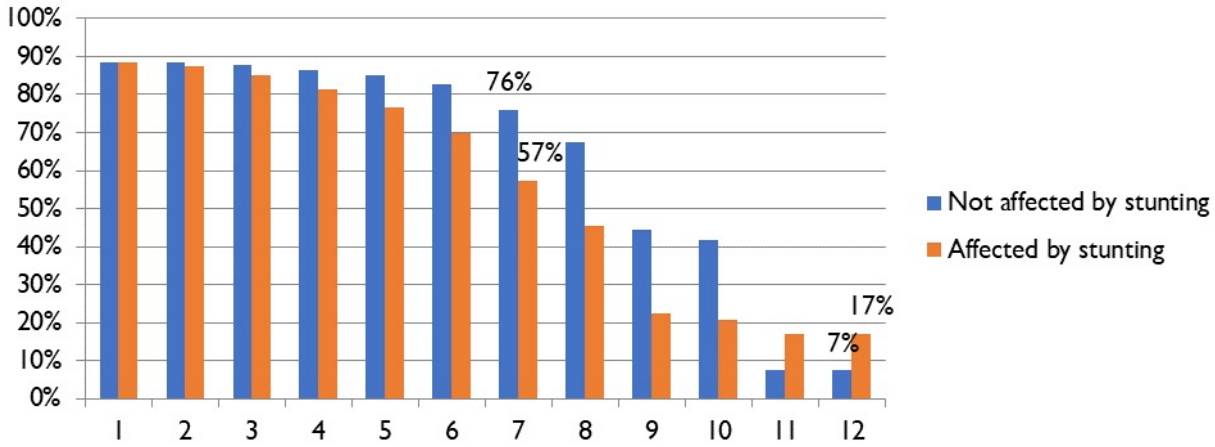
Both need to invest resources for an additional year of schooling. Costs for families include uniforms, books and exercise books, and school fees. Economic costs have been calculated to estimate the cost of the additional years of schooling associated with undernutrition.

Costs of grade repetitions associated with undernutrition
Total Public Costs: 277.6 million NAD
Total Cost to Families/caretakers: 17.9 million NAD
Total Cost: 295.5 Million NAD

Results in Education

Students who are stunted are also more likely to drop out of school. According to available data and taking into account the relative risks associated to the consequences of stunting on educational performance, there is an important gap in school completion between those who suffered from stunting as children and those with a healthy childhood. **The model estimates that from the current working age population aged 15 to 64, 63.2 percent of those who were stunted as child (and presently of working age) completed primary school compared to 80.1 percent of those who were never stunted.**

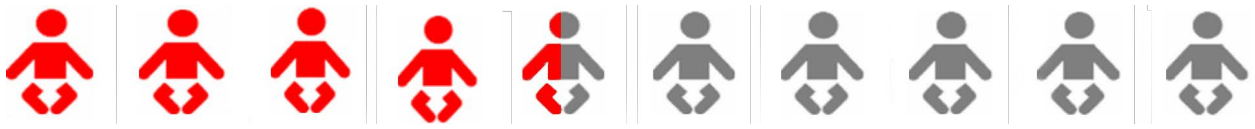
Average Grade Achievement of Working Age Population by Nutritional Status



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.

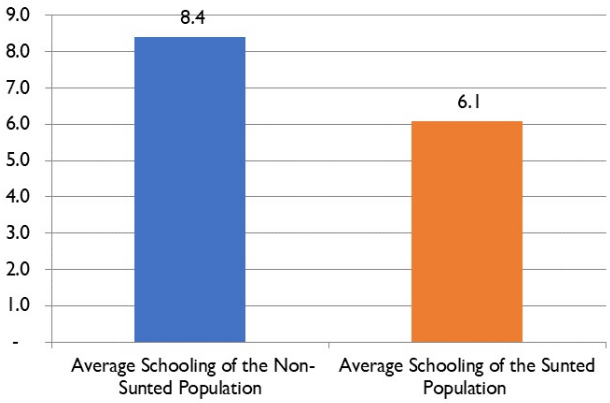
Results in Productivity

Child undernutrition affects human capital and productivity in several dimensions. 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 **43.1%** of the working age population, or **592,252** people were stunted as children

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 **26.3%** of the population in Namibia 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 Namibia, in which the stunted population has on average, 2.3 years less of education, the economic loss in non-manual activities is estimated at **7.5 Billion NAD, which is equivalent to 3.48% of the GDP in 2016.**

On the other hand, for manual intensive activities, where 66% of Namibians 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

Losses in Potential Productivity in manual labour associated with Stunting

Age in 2014	Population working in manual labour who were stunted as childrens	Income losses in manual labour	
		Millions of GMD	Millions of USD
15-24	82,948	68.5	4.7
25-34	55,230	82.5	5.6
35-44	39,105	87.5	6.0
45-54	26,485	76.2	5.2
55-64	21,720	95.4	6.5
Total	225,489	410	27.9
% GDP		0.2%	


WFP
LUCKY STAR
PILCHARDS
EVERYDAY
traditional unsifted
maize meal

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

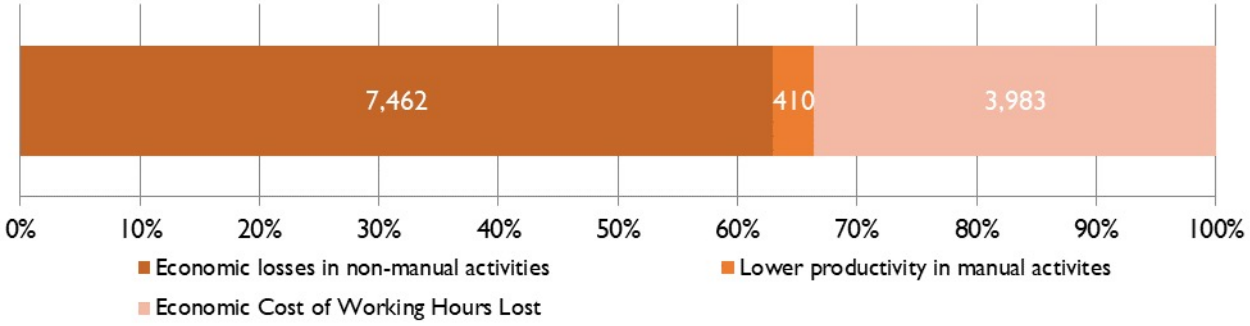
The COHA model estimates that **47,547** people are absent from the workforce due to mortality associated with undernutrition. This represents **3.6 % of the total working age population.**

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 **2.48 billion NAD** , which represents **1.2 % of the country's GDP for 2016.**

Total losses in productivity for 2016 are estimated at approximately 10.3 billion NAD, which is equivalent to 4.8 % of Namibian GDP.

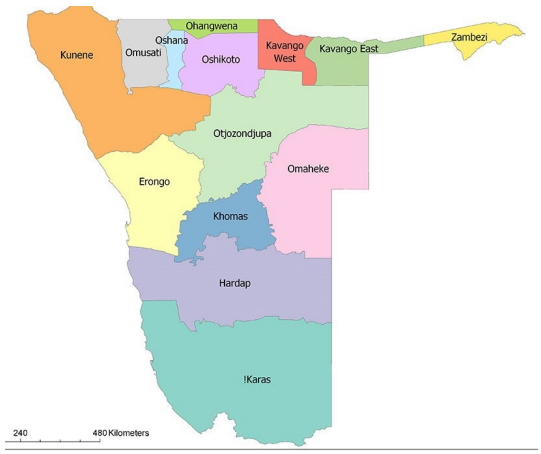
The total losses in productivity for **2016** are estimated at approximately **10.3 billion NAD (USD 702.8 million)**, which is equivalent to **4.8 percent** of Namibia's GDP. As presented in Figure 4.10, the largest share of productivity loss is attributed to reduced productivity due to undernutrition-related mortality which represents **24.1 percent** of the total cost. The lost productivity in non-manual activities represents **62.7 percent** of the costs. The income differential in manual labour, due to the lower physical and cognitive capacity of people who suffered from growth retardation as children represents **3.5 percent** of

Distribution of Losses in Productivity



TOTAL COSTS
Results from Namibia

Total losses associated with undernutrition are estimated at NAD 11.14 billion for the year 2016. These losses are equivalent to 5.22 % of GDP of that year.



Namibia NAD 11.14 Billion
5.22% GDP

Scenarios for Improved Nutrition

The previous chapter (IV) showed the social and economic costs that affected Namibia in 2016 due to high historical trends of child undernutrition. Most of these costs are already cemented in the society and policies must be put in place to improve the lives of those already affected by childhood undernutrition. Nevertheless, there is still room to prevent these costs in the future. Currently, one out of every three children under the age of five in Namibia is stunted.

This section analyses the impact that a reduction in child undernutrition could have on the socio-economic context of the country. The results presented in this section project the additional costs to the health and education sectors as well as losses in productivity that Namibian children would bear in the future. They also indicate potential savings to be achieved. This is a call for action to take preventive measures and reduce the number of undernourished children to avoid large future costs to the society.

The model generates a baseline that allows development of various scenarios based on nutritional goals established in each country using the prospective dimension. The generated outcomes can be used to advocate for increased investments in proven nutritional interventions. These scenarios are constructed based on the estimated net present value of the costs of children born in each year between 2016 – 2025 and 2016 – 2030 . The methodology follows each group of children and based on each scenario, estimates a progressive path towards achieving the set nutritional goals.

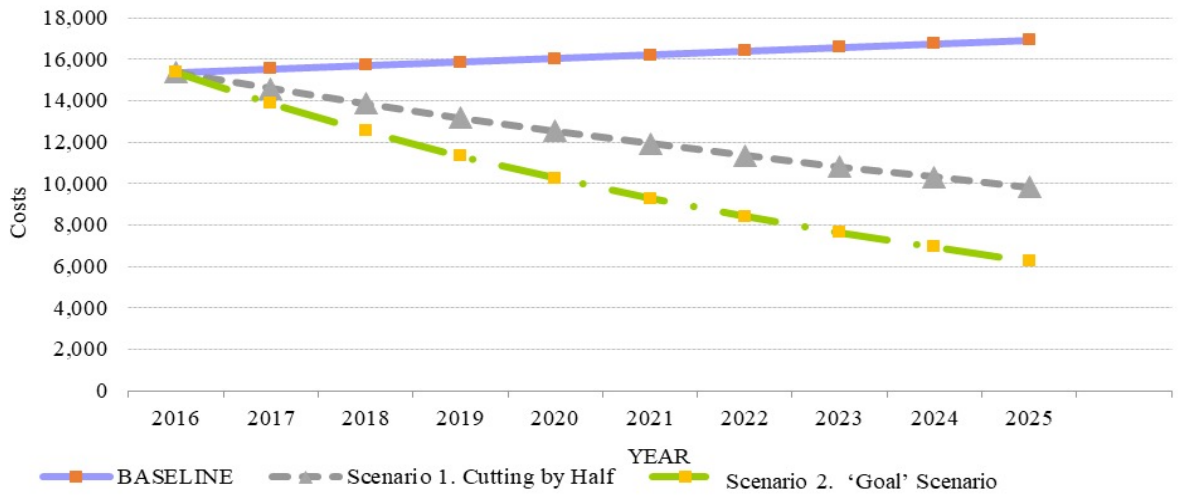
The scenarios developed for this report are as follows:

1. Baseline: The Cost of Inaction. For the baseline, the progress of reduction of the prevalence of undernutrition stops at the levels achieved in 2016. 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.

2. 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 2016 values corresponding to the reference year. In the case of Namibia this would mean a constant reduction of 1.7 percent points annually in the stunting rate from 30.3 percent (estimate for 2016) to 15.1 percent in 2025. A strong effort has to be carried-out to complete this scenario that would require a revision of the effectiveness of on-going interventions for the reduction of stunting.

3. Scenario #2: The 'Goal' Scenario. Reduce stunting to 10% and underweight children 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. The progress rate required to achieve this scenario would be 2.3 percent annual reduction for a period of 10 years, from 2016 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 a case for nutrition investments. The reduction in clinical cases in the health system, lowered grade repetition and improved educational performance as well as physical capacity are elements that contribute directly to the national productivity.

As presented in Table 5.2, cutting undernutrition by half by 2025 would represent a reduction in costs of over 14.9 billion NAD, equivalent to $US 1.01 billion for the period of 9 years, from 2016 to 2025. Although the tendency of savings would not be linear as they would increase over time with the achieved progress, a simple average of the annual savings would represent 1,656 NAD million or $US 113 million per year. In the case of the Goal Scenario, the savings would increase to 36.2 billion NAD or $USD 2.5 billion, which represent a simple average of 4018 NAD or $US273 million per year.

	Cutting Undernutrition by Half by 2025		Goal Scenario 2025	
	Millions NAD	Millions USD	Millions NAD	Millions USD
Heath Costs				
Reduced Morbidity	641	43.63	0	0
Education Costs				
Reduced Grade Repetition	102	6.91	157	10.66
Productivity Costs				
Higher Productivity in Non-Manual Activities	14,030	954.3	21,041	1,431
Higher Productivity in Manual Activities	127	8.66	726	49.38
Increased Working Hours	6	0.4	14,239	968.62
Total Savings	**14,906**	**1,014**	**36,168**	**2,460**
Average Annual Savings	1656	113	4018	273

Conclusions

The Economic impact associated with underweight and stunting in children is quite significant and has far reaching effects on productivity, health and education. The COHA studies that have already been concluded in Burkina Faso, Chad, Egypt, Ethiopia, Ghana, Lesotho, Madagascar, Malawi, Rwanda, Swaziland and Uganda show that these economies suffered an estimated annual loss ranging from 1.9 per cent to 16.5 per cent of Gross Domestic Product as a result of child undernutrition.

Child undernutrition increases the risk of morbidity and mortality; affects school attendance, performance, grade repetition; and overall economic productivity in the long term. The findings of COHA in Namibia reaffirmed the results of similar studies in Africa, Latin America, and the Caribbean that undernutrition in children has significant impact on the economy. Namibia is estimated to have lost an equivalent of about 12.66 billion NAD in 2016, which represented 5.9 per cent of GDP. Productivity, health, and education losses were estimated at 11.85 billion, 516.6 million and 296 million NADsrespectively.

The opportunity costs in productivity alone represented 5.56 per cent of GDP in 2016, followed by health and education at 0.24 per cent and 0.14 per cent, respectively. In recognition of ongoing efforts, there is need to eradicate undernutrition through three broad avenues encompassing enhanced implementation of programmes, multi-sectoral coordination, and resource mobilization

Summary of Recommendations

Agriculture

- ✓ Promote and raise awareness for the need of producing a wider range of fruits and vegetable in school and household gardens in communal, commercial as well as peri-urban and urban areas to increase accessibility and affordability of nutritious food. Investigate the use of semi-purified water from water reclamation plants for peri-urban and urban horticulture.
- ✓ Review policies and legislation to unlock the economic and agricultural potential of communal land through increased investment.
- ✓ Improve output from Green Schemes through PPP and broaden the range of horticultural produce farmed at Green Schemes.
- ✓ Increase agricultural yields through extension services such as tractors, implements and seeds as well as the promotion of climate-smart agriculture, Conservation Tillage and other adaptation measures.
- ✓ Strengthen research into post-harvest losses and implement mitigating measures.
- ✓ Increase youth participation in income-generating horticulture activities to ease access to affordable and nutritious food and to reduce unemployment and poverty.
- ✓ Strengthen systems and capacities to enhance evidence generation and monitoring for agriculture productivity and nutrition, including conducting periodic agricultural surveys to monitor nutrition-based agriculture at household level.
- ✓ Increase investments in and budget allocation to agriculture (ten percent) in-line with the Malabo commitment.

Health

- ✓ Intensify deployment of Community Health Workers and conduct Targeted Outreach Programmes in particular in severely affected regions to identify malnourished children, pregnant and lactating women and adults for malnutrition treatment.
- ✓ Provide nutritional supplements to each pregnant woman in need at each ante- and postnatal visit to a clinic and package nutrition education messaging for Antenatal Care (ANC) and Postnatal Care (PNC) nutrition sessions. Such intervention will also incentivise regular visits to health facilities.
- ✓ Furthermore, combine nutrition-specific and nutrition-sensitive interventions, particularly those with strong health access and safety net components to effectively reduce stunting among children in the first 1,000 days of their lives.
- ✓ Promote Food and Nutrition research to have up-to-date information for informed decision making linked to a functional Early Warning Food and Nutrition Security Information System including the prioritisation of publishing the Namibia Demographic and Health Survey (NDHS) regularly to enhance monitoring and evaluation of child nutrition indicators.
- ✓ Strengthen the systems and the capacity for multisectoral actors in evidence generation for Food and Nutrition, including the capacity of the Namibia Vulnerability Assessment Committee and the establishment of a National Nutrition Database, to ensure effective monitoring of child under nutrition over time.
- ✓ Design and implement a systematic advocacy and targeted information, education and communication strategy for nutrition to promote and support healthy lifestyles and environments.
- ✓ Revise the Ministry of Health and Social Services Nutrition Guidelines for Prevention and Management of Diet-Related Non-Communicable Diseases.
- ✓ Strengthen Nutrition Assessment Counselling and Support (NACS) programme under the Primary Health Care Division of the Ministry of Health and Social Services. Improving budgetary allocation to health at both national and regional level for Nutrition sensitive and Nutrition specific programmes in the country.
- ✓ Strengthen community-led approaches to support household nutrition interventions focusing on maternal and child nutrition to enhance the monitoring of child growth and to support sustainable change in behaviours.
- ✓ Strengthen community-based workers service delivery platforms and the wider programme coverage and compliance as critical components of effective stunting reduction programmes.
- ✓ Undertake a detailed analysis of undernourished children that tracks affected populations from birth to university.

Education

- ✓ Accelerate the implementation of the Home Grown School Feeding Programme (HGSFP) to diversify school meals and improve learners' nutritional status. Extend the School Feeding Programme to ECDs and Secondary Schools.
- ✓ Accelerate the dissemination and implementation of the Food and Nutrition Security Policy.
- ✓ Promote nutritional awareness and intake of adequate, locally available and nutritious foods among school children and communities including strengthening interventions that are aimed at promoting healthy eating (hygiene and nutrition) at school (Need to align School health programs with the Health Promoting School Initiative - HPSI). This initiative should be closely coordinated with the MAWLR's promotion of school and community gardens.
- ✓ Strengthen the provision of supporting implementation requirements for the school feeding programme including adequate hygiene, adequate water and sanitation facilities, adequate kitchens and storage facilities and community commitment.

Resource mobilisation

There is need for all stakeholders to make deliberate efforts in mobilising resources for sustainable provision of food and nutrition as well as health services in view of reduced donor funding. However, the Ministry of Finance needs to take the lead in the following areas:Model the cost of hunger over several other years i.e over and beyond the study year for the present COHA study

- ✓ Introduce taxes on sugary drinks and salty snacks to encourage healthier diets.
- ✓ Develop the Public Private Partnership (PPP) framework for joint flagship food and nutrition interventions to accelerate implementation of key actions. The MAWLR will in close consultation with the MoF pursue PPPs for the existing Green Schemes.
- ✓ Develop an innovative financing strategy on nutrition and food security which will include private sector engagement. The additional resources should support not only an increased budgetary allocation but also human resource capacity development in nutrition, health, agriculture, education and other sectors. The resources should be allocated at all levels including constituency/community.

Coordination and implementation

- ✓ Ensure that the National Food and Nutrition Security council and its structures in the office of the Prime Minister as stipulated in the National Food and Nutrition Security Policy Implementation Framework are fully functional.
- ✓ Develop and implement a plan to implement the COHA study recommendations and develop a communication strategy.
- ✓ Model the cost of hunger over several other years i.e., over and beyond the study year for the present COHA study, include the cost of hunger attributed to maternal undernutrition and define the minimal resources to be allocated per child towards nutrition enhancement
- ✓ Strengthen national capacities to enable effective coordination of the implementation of multi-sectoral nutrition action plan.
- ✓ Monitor and evaluate the set targets of food and nutrition in affiliated global agreements and national plans and ensure accountably in the implementation of actions/ interventions spelt out in various frameworks.
- ✓ Strengthen political commitment and capacities towards prioritising nutrition at national and county level.

The annual costs associated with child undernutrition Namibia is estimated at USD 861.7 million (NAD 12.7 billion) which is equivalent to 5.94% of GDP

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