



FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY OF HEALTH



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A Tool to Support Nutrition Advocacy in Ethiopia: Ethiopia PROFILES 2012 Estimates

Final Report

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Contact information:

Food and Nutrition Technical Assistance III Project (FANTA)
FHI 360
1825 Connecticut Avenue, NW
Washington, DC 20009-5721
Tel: 202-884-8000
Fax: 202-884-8432
fantamail@fhi360.org
www.fantaproject.org

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1. Introduction

Imagine Ethiopia free from malnutrition. What will it take to achieve this? What would be the benefits? What will be the consequences if nothing is done to improve nutrition? These are the questions national stakeholders and technical experts in Ethiopia sought to answer through a consultative and consensus-building process.

PROFILES, a computer-based tool to support nutrition advocacy that provides estimates of economic and other benefits that would result from improved nutrition, was instrumental in guiding stakeholder collaboration in pursuit of this goal. PROFILES was used to project the benefits of improved nutrition in terms of improvements in development outcomes, specifically, reduced maternal and child mortality and increased economic productivity for the period 2012-2025.

The objective of this brief is to share PROFILES estimates that were generated to advocate for investment in and implementation of the National Nutrition Program among high-level decision makers and stakeholders in Ethiopia.

2. Background

Why Invest in Nutrition, and Why Now?

Nutrition is one of the foundations of human health and development, and specifically in Ethiopia, malnutrition is one of the major causes of childhood illness and mortality (World Bank 2006). If malnutrition rates were reduced significantly, improvements in the health, well-being, and productivity of the Ethiopian population would be significant.

Investing in nutrition is also economically sound and has been identified as a *best* investment (Copenhagen Consensus 2012). This critical investment saves mothers' and children's lives and improves children's education outcomes, which, in turn, boosts economic productivity. It is estimated that investing in nutrition can increase a country's gross domestic product (GDP) by at least 3 percent annually (World Bank 2006). Furthermore, every US\$1 spent on reducing malnutrition has at least a US\$30 return on investment (World Bank 2006; Copenhagen Consensus 2012). Thus, investing in nutrition is a fruitful and cost-effective commitment to Ethiopia's future.

In addition, nutrition is an essential building block to achieving at least 5 of the 8 Millennium Development Goals. As a country that has recently seen remarkable economic growth and is on track to meet several of the Millennium Development Goals—including eradicating poverty and hunger, achieving universal primary education, and reducing child mortality—the Government of Ethiopia is aware of the critical impact nutrition has on the nation's population and economic development (Ministry of Finance and Economic Development 2010).

Ethiopia is currently in the process of updating its National Nutrition Program with a renewed focus on the first 1,000 days (from conception to when a child reaches 2 years old) and on the country's most vulnerable demographic groups (i.e., pregnant and lactating women, adolescents, and children under 5 years of age). This update is being carried out through a multistakeholder platform that promotes a scale-up of nutrition-specific interventions and also nutrition-sensitive interventions in other development sectors.

Nutrition Challenges to Address

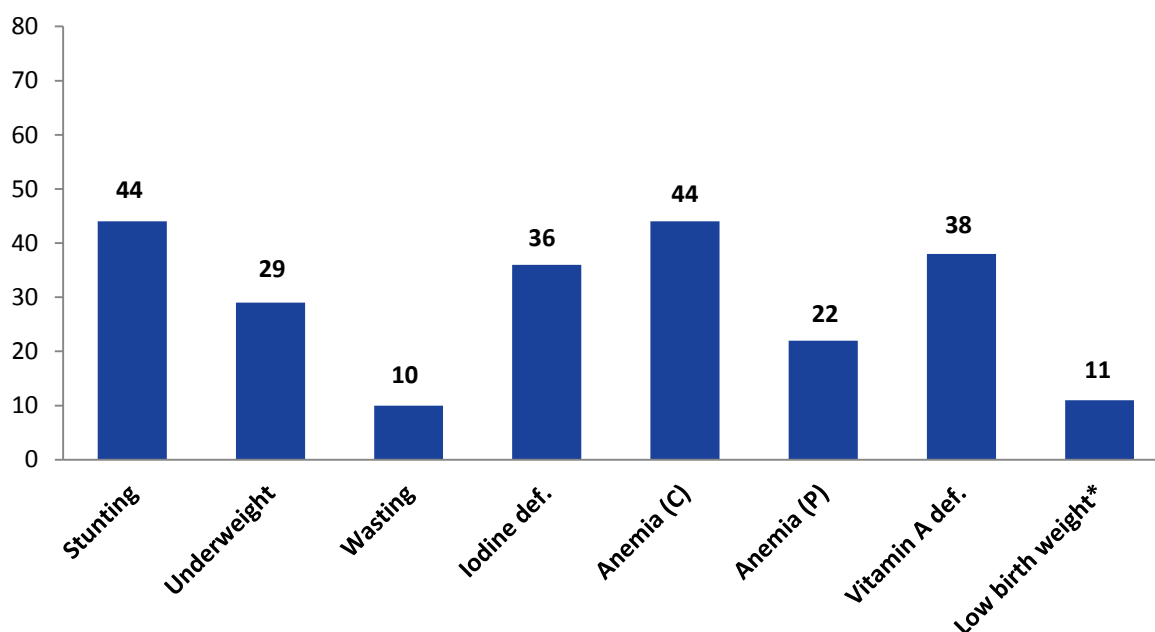
According to the 2011 Ethiopia Demographic and Health Survey (DHS), almost half of all children under 5 years (44 percent) are chronically malnourished (stunted or low height-for-age), 10 percent are acutely malnourished (wasted or low weight-for-height), and 29 percent are underweight (Central Statistical Agency [CSA] and ICF International 2012) (Figure 1). Although these trends (Figure 2) have improved (from 2000 to 2011, a 12 percentage point reduction in underweight and a 14 percentage point reduction in stunting), prevalence of underweight and stunting in Ethiopia remain among the highest across sub-Saharan Africa. Ethiopia and Burundi have the highest prevalence of underweight in the region, and only children in Malawi and Burundi are more

likely to be stunted than children in Ethiopia (Ethiopia DHS 2011). In addition, almost half of all children in Ethiopia are anemic (44 percent) (Ethiopia DHS 2011) and 38 percent are vitamin A deficient (Demissie 2010).

This widespread nutrition problem affects the nation's adolescents and mothers as well. Almost a fourth of pregnant women (22 percent) suffer from anemia (ibid), and more than a third of the population of women (36 percent) is iodine deficient (Abuye and Berhane 2007). As the data indicate, despite Ethiopia's progress, continued emphasis and investment in nutrition is highly warranted to ensure Ethiopia continues its remarkable growth and development.

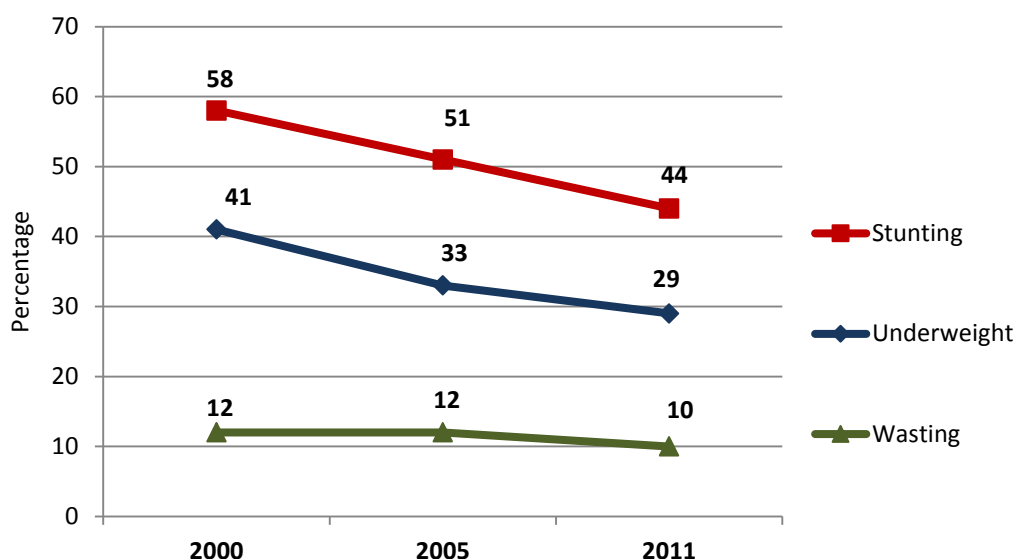
The causes of malnutrition in Ethiopia are manifold: Repeated infections, poor health, and inadequate dietary intake are immediate causes of malnutrition, but underlying causes include food insecurity, gender inequality, lack of safe water, hygiene and sanitation, and poverty, among others. As such, malnutrition in Ethiopia is a complex problem that persists due to multiple causes rooted in various sectors. Therefore, in addition to nutrition-specific interventions, nutrition-sensitive interventions that are multisectoral are also essential to reduce and eradicate malnutrition in Ethiopia.

Figure 1. Malnutrition Rates in Ethiopia



Sources: Ethiopia DHS 2011 (CSA and ICF International 2012). Micronutrient Survey 2005 (Abuye and Berhane 2007; Demissie 2010).

Note: C = Under-5 children. P = Pregnant women. *Among mothers who knew the child's birth weight

Figure 2. Trends in Malnutrition in Ethiopia

Source: Ethiopia DHS 2011 (CSA and ICF International 2012).

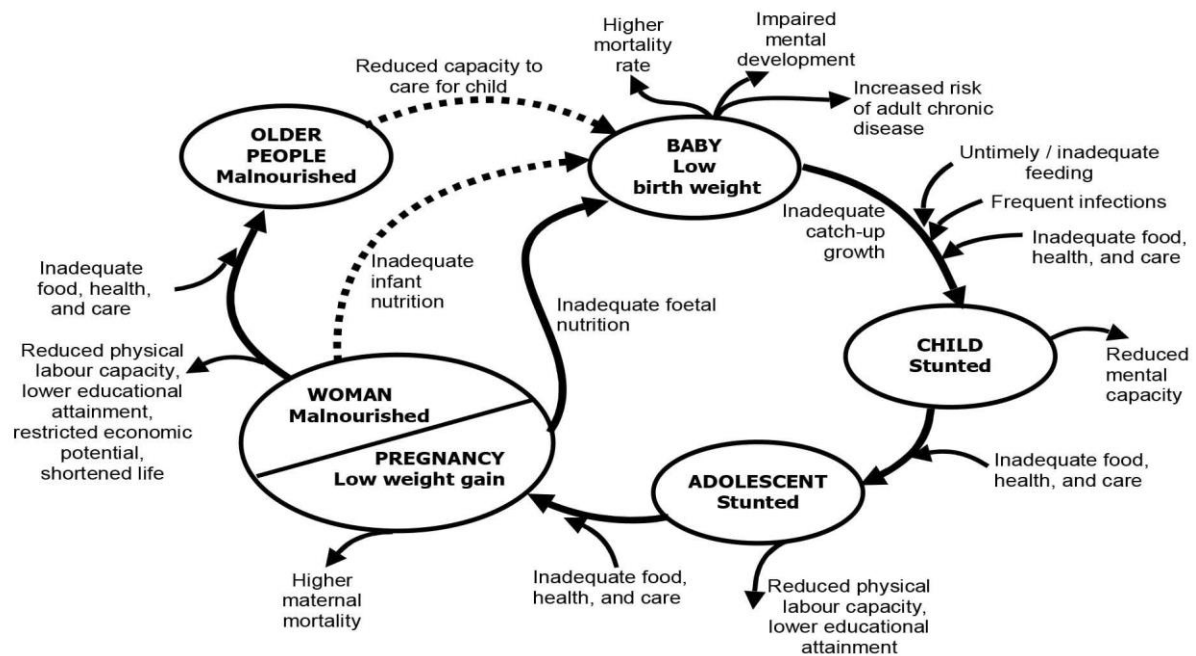
Note: For comparison purposes, the 2000 and 2005 anthropometric indicators were computed on the basis of the World Health Organization 2006 standards, to match standards used for the 2011 indicators. The values in the graph indicate percentage of children with z-scores below -2 standard deviations (SD).

What Are the Consequences of Malnutrition?

Malnutrition in Ethiopia is intergenerational in nature. Infants that are born with low birth weight become malnourished children and adolescents. Adolescent girls are married early and many begin childbearing during their adolescent years while they themselves are malnourished. During pregnancy, women and girls often do not gain adequate weight, which results in the birth of a low weight infant. This lifecycle of malnutrition (see Figure 3) is characteristic of the nutrition situation in Ethiopia. Even when infants are born with normal birth weight, malnutrition begins early in life.

It is well-established that preventing malnutrition among children under 2 years of age should be the focus of nutrition interventions, and this is a main focus of the Scaling Up Nutrition movement (Scaling Up Nutrition Road Map Task Team 2010), of which Ethiopia is a member. Data for Ethiopia increasingly suggests that there are four critical points in the lifecycle during which malnutrition has the most significant consequences: children under 2 years of age, children under 5 years of age affected by acute malnutrition, adolescence, and pregnancy and the postpartum period.

Figure 3. Lifecycle of Malnutrition



Source: ACC/SCN 2000.

3. Methods for Generating Data for the PROFILES Model

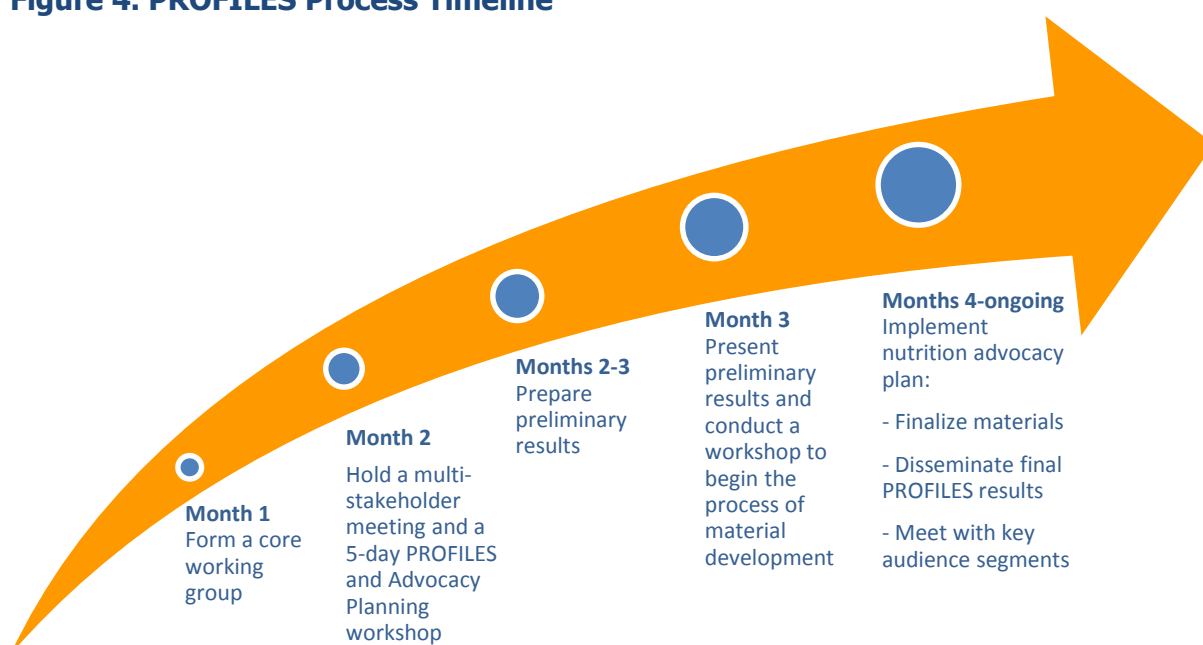
PROFILES is a computer-based model that serves as a tool to support nutrition advocacy. First developed in the early 1990s, it consists of a set of spreadsheet models reflecting current scientific nutrition knowledge and is designed to estimate the functional consequences of malnutrition on health and development outcomes to support advocacy and communication with policy makers, program implementers, and other stakeholders. To ensure the relevancy of the results, it is important for stakeholders to agree on the data and targets to populate the model.

This section presents the methods that were used to derive the estimates for Ethiopia in relation to each of the nutrition problems addressed in the Ethiopia PROFILES 2012. The basic approach in PROFILES is to provide two scenarios, contrasting a status quo scenario that assumes there will be no improvement and no change from the current nutrition situation throughout the chosen time period (aside from projected changes in population size) to an improved scenario. The improved scenario—with results estimated for the same time period—assumes that nutrition interventions that are known to be effective are implemented at scale and succeed in reaching the stated targets in terms of reductions in the prevalence of the various nutrition problems. The targets reflect the proportion by which nutrition problems will be reduced over the chosen time period and are determined and agreed upon through stakeholder meetings and a PROFILES workshop. In the status quo scenario, the negative consequences are expressed, for example, in terms of lives lost and economic productivity losses. When contrasting the results from the status quo and the improved scenarios, the differences reflect benefits expressed as lives saved and economic productivity gains (or, economic productivity losses averted).

Figure 4 shows the timeline of the PROFILES process. For Ethiopia PROFILES 2012, two meetings and a 4-day workshop were conducted with key stakeholders to develop and finalize the estimates from PROFILES. At the first stakeholder meeting held on November 30, 2012, in Addis Ababa, the objectives and rationale for the model were introduced and the key assumptions for the model, data sources, timeline, and dissemination plan were discussed. Also at this first meeting, stakeholders selected 2012–2025 as the time period for the projections for the Ethiopia PROFILES 2012 estimates. This coincides with the time frame for targets discussed and the nutrition intervention expansion plan adopted for reduction in child deaths at the World Health Assembly 2012. It also provides a long enough time period for change to occur. The PROFILES workshop was held in December 2012, immediately after the first stakeholder meeting, to populate the spreadsheets and develop preliminary PROFILES estimates. The workshop included a collaborative process for stakeholders to develop a working draft of a national nutrition advocacy plan (see Appendix A). At the second stakeholder meeting, held in January 2013, the preliminary results from the PROFILES workshop were presented and feedback and input to finalize the estimates were

obtained. A list of participants for all meetings and workshops on nutrition advocacy using PROFILES can be found in Appendix B. Using the National Nutrition Advocacy Plan, FANTA led a participatory process with key stakeholders to prioritize the nutrition advocacy materials to be developed for media; policymakers and parliamentarians; officials at the regional, *Woreda* and *Kebele* levels; donors; civil society; and the private sector. A creative brief for each priority material, outlining key content and messages to be included in each, was developed during a workshop held in February 2013. As a next step in the process, nutrition advocacy materials will be finalized and disseminated at advocacy events by various stakeholders in Ethiopia.

Figure 4. PROFILES Process Timeline

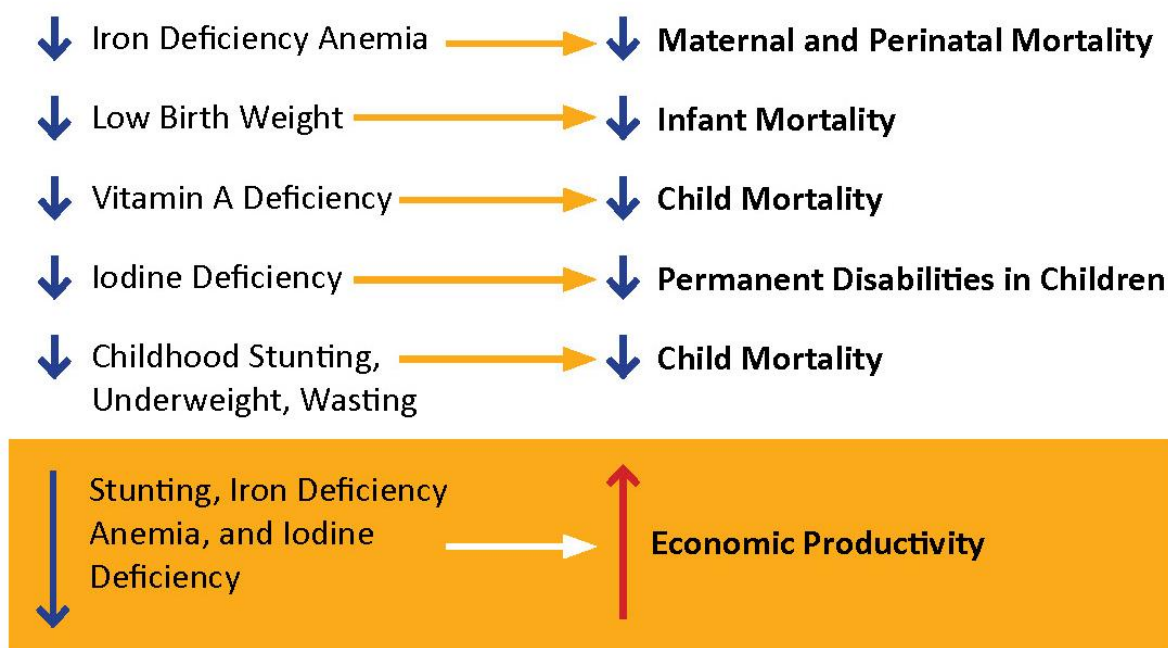


Nutrition Problems and Consequences Addressed in Ethiopia PROFILES 2012

Ethiopia PROFILES 2012 calculates estimates of reduction in mortality and permanent disabilities and gains in economic productivity that can result from reductions in the prevalence of several nutrition indicators, namely, iron deficiency anemia; low birth weight; vitamin A deficiency; iodine deficiency; and childhood stunting, underweight, and wasting. Ethiopia PROFILES 2012 estimates of economic productivity losses attributed to stunting and iodine deficiency are based on poor cognitive development, which affects school performance and, later in life, earning potential. Economic productivity losses related to iron deficiency anemia among adults is a reflection of decreased capacity to do manual labor. The estimates PROFILES calculates from these nutrition indicators on health and economic outcomes are based on impacts demonstrated and established in the scientific literature. For example, stunting, underweight and wasting are leading causes of child mortality. Figure 5 shows the nutrition indicators from which PROFILES calculates estimates. For each

nutrition indicator listed that is assumed to improve, PROFILES calculates an estimate of a corresponding improvement in a specific health or economic outcome in terms of lives saved or economic productivity gains, respectively.

Figure 5. Nutrition Problems and Consequences addressed in the Ethiopia PROFILES 2012



Magnitude of Nutrition Problems and Data Sources for PROFILES

To quantify the magnitude of the negative consequences of nutrition problems, PROFILES needs prevalence data for each of the nutrition indicators. For the anthropometry indicators (stunting, wasting, and underweight) the risk of mortality differs by the degree of severity. A collaborative and participatory process involving participants at the stakeholder meetings and in the PROFILES workshop was used to identify recent data sources and the prevalence of each of the nutrition indicators. These prevalence levels were used for the status quo scenario and are shown in Tables 2 and 3.

The 2011 Ethiopia DHS provided information for anthropometry, low birth weight, and anemia. The anthropometry indicators in Table 2 present the information used by the PROFILES spreadsheet models; for each of the three measures of undernutrition—stunting, wasting, and underweight—PROFILES uses the percentage of children with mild (z-scores from -2 to <-1 SD), moderate (z-scores from -3 to <-2 SD), and severe (z-scores <-3 SD) undernutrition. Despite improvements since 2000, stunting levels are still very high (44 percent) among children under 5 years of age, and about 10 percent have wasting. Among newborn babies with a reported birth weight (based on the mother's recall or a written record available at the household level), 10.8 percent weighed less than 2.5 kg and were categorized as having low birth weight. Anemia was found

among 22 percent of pregnant women, 16 percent of women who were not pregnant, and 12 percent of men. The PROFILES team used information from the 2011 Ethiopia DHS to calculate the anemia prevalence for non-pregnant women. Using the information for 1) lactating women (who were not pregnant) and 2) women who were neither lactating nor pregnant, the team calculated a weighted average to arrive at the anemia prevalence (16 percent) for both of these groups together (i.e., all non-pregnant women).

A 2005 national micronutrient survey carried out by the Ethiopia Health and Nutrition Research Institute (EHNRI) was the most recent source of information for vitamin A deficiency (Demissie et al. 2010) and iodine deficiency (Abuye and Berhane 2007). Participants in the stakeholder meetings and the PROFILES workshop were in agreement that this was the best available information to use for the status quo scenario. The total goiter rate (the iodine deficiency-related indicator needed by PROFILES) was 35.8 percent. Vitamin A deficiency (including subclinical deficiency) was found among 37.7 percent of children under 5 years of age.

The main data sources used in Ethiopia PROFILES 2012 are summarized below in Table 1, and further details are provided in Tables 2 and 3 for the nutrition-related indicators (anthropometry, low birth weight, vitamin A deficiency, anemia, and iodine deficiency).

Table 1. Indicators and Data Sources for Ethiopia PROFILES 2012

Indicator	Source
Anthropometry (stunting, wasting, underweight) among under-5 children	Ethiopia DHS 2011
Low birth weight	Ethiopia DHS 2011
Vitamin A deficiency	National Micronutrient Survey 2005 (Demissie et al. 2010)
Anemia	Ethiopia DHS 2011
Iodine deficiency (goiter)	National Micronutrient Survey 2005 (Abuye and Berhane 2007)
Employment information	National Labour Force Survey 2005 (CSA 2006) and Urban Employment Unemployment Survey 2011 (CSA 2011)
Maternal mortality ratio	Ethiopia DHS 2011
Mortality in the first 5 years of life	Ethiopia DHS 2011

Assumptions Related to Setting Targets for Reduction of Undernutrition

The estimates that PROFILES calculates are based on several assumptions. In the PROFILES spreadsheets, it is assumed that if different forms of undernutrition are reduced, over time this would result in improvements in health and economic outcomes. As such, in the status quo scenario, it is assumed that the prevalence of various forms of undernutrition do not improve and remain unchanged, and consequently there is no improvement in health and

economic outcomes. This is presented as lives lost for the health outcomes, and economic productivity losses for the economic outcomes. In contrast in the improved scenario, it is assumed that the prevalence of the different forms of undernutrition is reduced and for each of these indicators there is a corresponding improvement in specific health and economic productivity outcomes. To calculate the estimates in the improved scenario, there is a need to set targets for the reduction of the various forms of under nutrition and the amount by which each form of under-nutrition is reduced is discussed and agreed upon in consultation with stakeholders and PROFILES workshop participants. In the Ethiopia PROFILES 2012 then, the question was by 2025, by how much do we assume that selected nutrition indicators will improve?

The 2025 targets for reduction in the prevalence of various nutrition indicators were discussed by participants at the stakeholder meetings and in the PROFILES workshop. At the first meeting, stakeholders agreed that the effort to generate estimates on the benefits of improved nutrition should be optimistic and also realistic, and that they should not only spur greater investment in nutrition but also foster hope for an Ethiopia free of malnutrition. Based on this vision, they assumed that, if the necessary investments are made and evidence-based nutrition interventions are implemented and scaled-up over the 14-year time period, the targets set could be achieved.

Time Period and Targets

During the first stakeholder meeting, participants decided on a 14-year time period, 2012–2025, to be used for PROFILES. To develop estimates for the improved scenario, participants at the stakeholder meetings and in the PROFILES workshop also arrived at assumptions about reduction in prevalence by the year 2025 for the various nutrition indicators; the improved prevalence (by the year 2025) is also referred to as the “target.” Stakeholders assumed that evidence-based effective nutrition interventions would be implemented at scale and succeed in reaching the target by the year 2025. While nutrition interventions were not included in the PROFILES spreadsheet models, the subsequent steps in the nutrition advocacy process addressed the need for various nutrition interventions, services, or programs, as well as issues related to the nutrition policy environment.

In the improved scenario, a linear reduction in prevalence levels is assumed (unless otherwise noted); the nutrition prevalence levels in the spreadsheet models gradually improve from the status quo prevalence levels in 2012 to the 2025 targets.

To arrive at the 2025 target for each of the nutrition indicators, participants in the stakeholder meetings and the PROFILES workshop kept in mind various considerations. Information was sought on whether targets had been stated in official government documents that could inform the targets for the time period selected for PROFILES. Targets referred to in documents from the 2012 World Health Assembly were also examined. WHO’s Nutrition Landscape Information

System provided insights on various prevalence cut-off values and the degree of public health significance.

Tables 2 and 3 include the targeted reduction in prevalence (shown as a proportion to be applied to the status quo prevalence) and the consequent target prevalence for the year 2025 (shown as a percentage). For the anthropometric indicators (stunting, underweight, and wasting), these tables show the information separately for the mild, moderate, and severe categories. Summary information for the moderate and severe categories combined is also shown. For stunting (moderate and severe) among children under 5 years of age, a decrease by 0.40 of the status quo percentage (44.4 percent) was agreed upon, with a consequent target of 26.8 percent by the year 2025. Stunting among children 24–35 months was reduced by the same proportion (0.40) from a status quo prevalence of 57.1 percent to a target prevalence of 34.1 percent. For underweight (moderate and severe) among children under 5 years of age, the status quo prevalence was 28.7 percent, to be reduced by 0.66 to a target of 9.8 percent by 2025. For wasting (moderate and severe) the status quo prevalence was 9.7 percent, to be reduced by 0.50 to a target prevalence of 4.9 percent. For low birth weight, a reduction by about one-third (0.35) was agreed on; with a status quo prevalence of 10.8 percent, the consequent target prevalence was 7.0 percent. A reduction by 0.45 was agreed on for anemia during pregnancy (under the assumption that interventions to address iron deficiency anemia would be put in place and that the targets would be reached). The goiter rate was assumed to be reduced from 35.8 percent in the status quo scenario to 4.7 percent by 2025 in the improved scenario, reflecting a reduction by 0.87. For the goiter rate, it was assumed that the improvement would initially be somewhat more rapid, reaching a prevalence of 20 percent by the year 2015, and then decreasing to 4.7 percent by the year 2015. A reduction by 0.75 was agreed on for the prevalence of vitamin A deficiency among children 6–59 months, from 37.7 percent in the status quo scenario to 9.4 percent by 2025.

Demographic and Employment Information

PROFILES requires demographic information with projections into future years that correspond to the time period used in the projections (for Ethiopia, 2012–2025). Selected information was obtained from the United Nations Population Prospects online database¹, and used in conjunction with (1) the estimated total population for 2012, which was 84.321 million (CSA 2012²), and (2) a PROFILES calculator tool to obtain the various demographic estimates required by PROFILES for each year.

Necessary employment information included 1) the economic activity rate (the percentage of the working-age population actually working or available for

¹ http://esa.un.org/wpp/unpp/panel_population.htm and http://esa.un.org/wpp/unpp/panel_indicators.htm.

² http://www.csa.gov.et/images/documents/pdf_files/nationalstatisticsabstract/2011/2011%20population.pdf (the document is both in Amharic and in English).

employment—including those who were unemployed), 2) the percentage of working-age persons who did manual labor, 3) the percentage of working-age males who did manual labor, and 4) the percentage of working-age females who did manual labor. Information from two labor force surveys was used to obtain employment information (CSA 2006, CSA 2011). Because information on wages was not available, it was agreed to use per capita gross domestic product as a proxy for this.

The 2011 Ethiopia DHS was the source of information on the neonatal mortality rate (37 per 1,000 live births), infant mortality rate (59 per 1,000 live births), under-5 mortality rate (88 per 1,000 live births), perinatal mortality rate (46 per 1,000 births), and maternal mortality ratio (676 per 100,000 live births).

Table 2. Estimating Reductions in Mortality and Disability Using Ethiopia PROFILES 2012

Nutrition Problem	Rationale/Assumptions	Data Sources	Current Prevalence (used for status quo scenario) (%)	Targeted Reduction in Prevalence by 2025 (status quo prevalence will be reduced by this proportion)	2025 Reduced Prevalence Target (%)
Mortality					
Stunting among children 0–59 months associated with under-5 child mortality	<p>PROFILES was updated and expanded in 2008 and calculates mortality estimates for each anthropometric indicator (stunting, underweight, and wasting) by degree of severity. Black et al. (2008) calculated the odds ratios of mortality for each grade of malnutrition related to:</p> <p>Stunting: Mild 1.2 Moderate 1.6 Severe 4.1</p>	Percentage of children in the severe and moderate categories are based on the Ethiopia DHS 2011. Percentage of children in the mild categories are from analysis of the data file from the Ethiopia DHS 2011.	<p>Stunting: Mild 24.5 Moderate 23.8 Severe 20.6</p> <p>In summary (moderate + severe): 44.4</p>	<p>Stunting: Mild 0.25 Moderate 0.30 Severe 0.50</p> <p>In summary (moderate + severe): 0.40</p>	<p>Stunting: Mild 18.4 Moderate 16.6 Severe 10.2</p> <p>In summary (moderate + severe): 26.8</p>
Underweight among children 0–59 months associated with under-5 child mortality	<p>Wasting: Mild 1.5 Moderate 3.0 Severe 9.4</p> <p>Underweight: Mild 1.8 Moderate 2.5 Severe 9.7</p>		<p>Underweight: Mild 32.6 Moderate 19.9 Severe 8.8</p> <p>In summary (moderate + severe): 28.7</p>	<p>Underweight: Mild 0.40 Moderate 0.66 Severe 0.66</p> <p>In summary (moderate + severe): 0.66</p>	<p>Underweight: Mild 19.6 Moderate 6.8 Severe 3.0</p> <p>In summary (moderate + severe): 9.8</p>

Nutrition Problem	Rationale/Assumptions	Data Sources	Current Prevalence (used for status quo scenario) (%)	Targeted Reduction in Prevalence by 2025 (status quo prevalence will be reduced by this proportion)	2025 Reduced Prevalence Target (%)
Wasting among children 0–59 months associated with under-5 child mortality	PROFILES uses this information to calculate the population-attributable fraction and the number of deaths (among children 6–59 months) related to each of the three indicators of growth deficit by severity category. Because many children with malnutrition can have more than one form of malnutrition at any given time (e.g., concurrent stunting and wasting or concurrent underweight and wasting), deaths related to each of these indicators cannot be totaled, because some children will be included in more than one indicator of malnutrition/growth deficit.		Wasting: Mild 21.5 Moderate 6.9 Severe 2.8 In summary (moderate + severe): 9.7	Wasting: Mild 0.30 Moderate 0.50 Severe 0.50 In summary (moderate + severe): 0.50	Wasting: Mild 15.1 Moderate 3.5 Severe 1.4 In summary (moderate + severe): 4.9
Anemia during pregnancy related to maternal and perinatal mortality Pregnant women with anemia (Hgb<11) (%)	Anemia during pregnancy is an important contributor to maternal mortality, including through an increased risk of death from postpartum hemorrhage. Anemia during pregnancy also contributes to perinatal mortality, e.g., through increasing the risk of preterm delivery. The PROFILES spreadsheets calculate the contribution of iron-deficiency anemia to maternal and perinatal deaths based on the work by Stoltzfus et al. (2004), presuming that 50% of anemia is due to iron deficiency (an assumption that was also made by Stoltzfus et al.).	Ethiopia DHS 2011	22.0	0.45	12.1

Nutrition Problem	Rationale/Assumptions	Data Sources	Current Prevalence (used for status quo scenario) (%)	Targeted Reduction in Prevalence by 2025 (status quo prevalence will be reduced by this proportion)	2025 Reduced Prevalence Target (%)
Vitamin A deficiency associated with child mortality Children 6–59 months with vitamin A deficiency (including subclinical) (%)	Vitamin A-deficient children are at risk of blindness resulting from xerophthalmia and corneal ulceration. They also have a higher risk of dying (e.g., from diarrhea and measles). The PROFILES model that estimates child deaths attributable to vitamin A deficiency uses coefficients from Ross (2008).	Micronutrient Survey 2005 (Demissie et al. 2010)	37.7	0.75	9.4
Low birth weight related to mortality Newborn infants with low birth weight (%)	Low birth weight, defined as a weight of < 2,500 g at birth, can be caused by preterm birth and/or intrauterine growth retardation. Using information from literature on increased risk of neonatal or post-neonatal mortality among infants with a low birth rate (Alderman and Behrman 2004, and Ashworth 1998) and country-specific low birth weight rates and mortality rates, PROFILES calculates the population attributable fraction and excess number of deaths related to low birth weight.	CSA and ICF International 2012	10.8	0.35	7.0

Nutrition Problem	Rationale/Assumptions	Data Sources	Current Prevalence (used for status quo scenario) (%)	Targeted Reduction in Prevalence by 2025 (status quo prevalence will be reduced by this proportion)	2025 Reduced Prevalence Target (%)
Permanent Disability					
Iodine deficiency associated with brain damage and disability as a result of deficiency in utero	Iodine deficiency is the main cause of preventable brain damage worldwide. Iodine deficiency among pregnant women and during the first few months of infancy leads to irreversible brain damage of various degrees of severity in the infant.	Micronutrient Survey 2005 (Abuye and Berhane 2007)	35.8	0.87	4.7
Population with goiter (%)					

Table 3. Estimating Economic Productivity Losses and Gains in Economic Productivity Using Ethiopia PROFILES 2012

Nutrition Problem	Rationale/Assumptions	Data Sources	Current Prevalence (used for status quo scenario) (%)	Targeted Reduction in Prevalence by 2025*	2025 Reduced Prevalence Target (%)
Stunting related to future productivity Stunting among children 24–35 months	Growth deficit early in life is related to productivity loss in adulthood. PROFILES estimates the impact of growth deficit in children on future labor productivity based on the facts that stunting developed during the first 2 years of life is generally maintained throughout life and that the productivity of adults is related to their stature. Reduced adult stature due to stunting is a proxy indicator for various nutritional and other insults that can affect physical and mental development (the issue is not short stature per se). Using coefficients based on published scientific literature, PROFILES estimates reduced adult productivity related to both decreased physical capacity and reduced intellectual ability (affecting school achievement). The calculations use the “economic activity rate” (the population actually working, as well as those eligible to work, including those categorized as unemployed), discounting future wages at 3% per year, and adjusts for normal mortality. The lifetime discount factor is the sum of all the adjusted annual discounted years from 15 through 64 years of age. The lifetime discount factor is used to calculate the present day value of future economic productivity losses related to childhood stunting, based on the proportion of children 24–35 months old that were classified as stunted. The percentage of children classified as having severe, moderate, and mild stunting are considered, after subtracting the proportion of children expected in each of these categories (according to reference population values).	Percentage of children in the severe and moderate categories are based on the Ethiopia DHS 2011. Percentage of children in the mild category is from analysis of the data file from the Ethiopia DHS 2011.	Stunting (24–35 months): Mild 22.1 Moderate 26.9 Severe 30.2 In summary (moderate + severe): 57.1	Stunting (24–35 months): Mild 0.20 Moderate 0.30 Severe 0.50 In summary (moderate + severe): 0.40	Stunting (24–35 months): Mild 17.7 Moderate 18.8 Severe 15.3 In summary (moderate + severe): 34.1

Nutrition Problem	Rationale/Assumptions	Data Sources	Current Prevalence (used for status quo scenario) (%)	Targeted Reduction in Prevalence by 2025*	2025 Reduced Prevalence Target (%)
Low birth weight related to future economic productivity Newborn infants with low birth weight (%)	Infants born with low birth weight are more likely to become stunted and to have reduced cognitive ability as they grow up. Both of these will contribute to reduced future economic productivity. Based on published literature, PROFILES calculates future economic productivity losses separately for stunting and for reduced cognitive ability related to low birth weight. As for productivity losses related to stunting and to iodine deficiency, future productivity is discounted at 3% per year, and normal mortality is taken into account for each year.	Ethiopia DHS 2011	10.8	0.35	7.0
Anemia among men and women related to productivity losses Non-pregnant women 15–49 years with anemia (Hgb<12) (%)	Anemia among the working-age adult population contributes to reduced productivity for those engaged in physical labor, especially heavy physical labor. The PROFILES model uses the coefficients developed by Ross and Horton (1998) for the effects of iron deficiency anemia on reduced capacity to carry out any type of physical labor and heavy physical labor.	The Ethiopia DHS 2011 included anemia information for men and for 2 categories of non-pregnant women (lactating & non-lactating). The Ethiopia PROFILES team calculated a weighted average to arrive at the anemia prevalence for all non-pregnant women.	16.2	0.45	8.9
Men 15–64 years with anemia (Hgb<13) (%)			12.0	0.45	6.6

Nutrition Problem	Rationale/Assumptions	Data Sources	Current Prevalence (used for status quo scenario) (%)	Targeted Reduction in Prevalence by 2025*	2025 Reduced Prevalence Target (%)
Intrauterine iodine deficiency related to future productivity losses Population with goiter (%)	PROFILES uses information from published literature (including the finding of a community-wide average reduction of 13.5 IQ points in iodine-deficient environments) for the coefficients used to estimate the negative impact of intrauterine iodine deficiency (as reflected in the goiter rate in a population) on future economic productivity. To estimate the future economic productivity losses among children born to iodine-deficient mothers, PROFILES discounts the children's future wages at 3% per year, after adjusting for normal mortality at each year of life (as described for productivity losses related to childhood stunting).	Micronutrient Survey 2005 (Abuye and Berhane 2007)	35.8	0.87	4.7

* As proportion reduction applied to current prevalence.

4. Results

The results from the Ethiopia PROFILES 2012 model are presented in Tables 4–6 and Figures 6–11.

Table 4 and Figures 6 and 8 show that if stunting and wasting levels remain unchanged from 2012 through 2025, the number of deaths related to stunting (total of about 664,000) and wasting (total of about 475,000) in children can be expected to remain steady from year to year. However, Table 4 and Figures 7 and 9 show that if high coverage of effective nutrition interventions are implemented and succeed in reducing stunting and wasting levels to their assumed targets, children's lives could be saved from stunting- and wasting-related deaths. In the 2012–2025 time period, assuming a steady decrease in stunting levels, the lives of about 150,700 children under 5 years will be saved. Similarly, assuming a steady reduction in wasting levels over the 2012–2025 time period, the lives of about 108,000 children under 5 years will be saved.³

Table 4 shows that in the status quo scenario, with no improvement and no change in the prevalence of maternal iron deficiency anemia, there would be about 15,600 maternal deaths related to pregnancy and childbirth and about 83,500 perinatal deaths. Table 4 and Figure 10 show that reductions in prevalence of maternal iron deficiency anemia by 2025 could save about 6,400 women's lives and avert about 34,000 perinatal deaths over the 2012–2025 time period. In addition, Table 4 shows that if there was no change in the prevalence of low birth weight, there would be about 500,000 deaths related to this problem during 2012–2025. However, Figure 10 shows that 57,700 infant deaths could be averted by reductions in low birth weight. During the time period 2012–2025, there would be about 322,700 under-5 deaths related to vitamin A deficiency if prevalence levels of this problem remained unchanged. However, 106,500 child deaths could be averted by reductions in vitamin A deficiency. If iodine deficiency remains unchanged, about 12 million children would be born to iodine-deficient mothers (Table 5); these children would have some degree of irreversible brain damage (with a decrease in IQ). However, the reduction of maternal iodine deficiency by 2025 could result in preventing permanent brain damage in about 7 million children over the 2012–2025 time period (Figure 10). Globally, brain damage from intrauterine iodine deficiency is the leading cause of preventable brain damage.

Economic productivity losses related to stunting among young children, iron deficiency among adults, and iodine deficiency are shown in Table 6. If stunting levels remain unchanged during 2012–2025 at the current high level, productivity losses related to stunting would be around US\$25 billion. Productivity losses related to adult iron deficiency anemia would be about US\$2 billion if this problem remained unchanged, and if there was no

³ There is some overlap in the deaths associated with stunting and with wasting.

improvement in iodine deficiency there would be related economic productivity losses of US\$5 billion.

Table 6 and Figure 11 show the economic productivity gains that could be achieved if the prevalence of stunting, iron deficiency anemia in adults, and iodine deficiency could be significantly reduced over the 2012–2025 time period. Overall, economic gains through increased productivity as a result of improved nutrition exceed US\$5 billion for Ethiopia by 2025. The economic productivity gains for each of these nutrition problems would be: stunting – US\$5 billion; iodine deficiency – US\$2.9 billion, and anemia among adults – US\$0.5 billion.

Table 4. Lives Lost Attributable to Various Nutrition Problems and Lives Saved Related to Improved Nutrition

Nutrition Problem	Number of deaths that would result if the current situation continues <i>Status quo scenario 2012–2025</i>	Number of lives that would be saved if nutrition situation improves* <i>Improved scenario 2012–2025</i>
Anthropometric indicators		
Deaths/lives saved attributable to stunting (severe, moderate, and mild) among children <5 years of age	664,177	150,753
Deaths/lives saved attributable to underweight (severe, moderate, and mild) among children <5 years of age	834,298	253,597
Deaths/lives saved attributable to wasting (severe, moderate, and mild) among children <5 years of age	475,280	108,033
Low birth weight		
Infant deaths/lives saved	499,850	57,748
Iron deficiency anemia		
Maternal deaths/lives saved	15,608	6,411
Perinatal deaths/lives saved	83,589	34,224
Vitamin A deficiency		
Child deaths/lives saved	322,703	106,574

* Including through at-scale implementation of effective nutrition interventions that succeed in reaching the stated targets in terms of reductions in the prevalence of the various nutrition problems.

Table 5. Iodine Deficiency and Child Disability

Nutrition Problem	Number of children that would have mild to severe permanent brain damage if the current situation continues <i>Status quo scenario 2012–2025</i>	Number of children for whom disability as result of maternal iodine deficiency would be prevented if prevalence of iodine deficiency is reduced* <i>Improved scenario 2012–2025</i>
Child disability related to maternal iodine deficiency	12,769,595	6,971,150

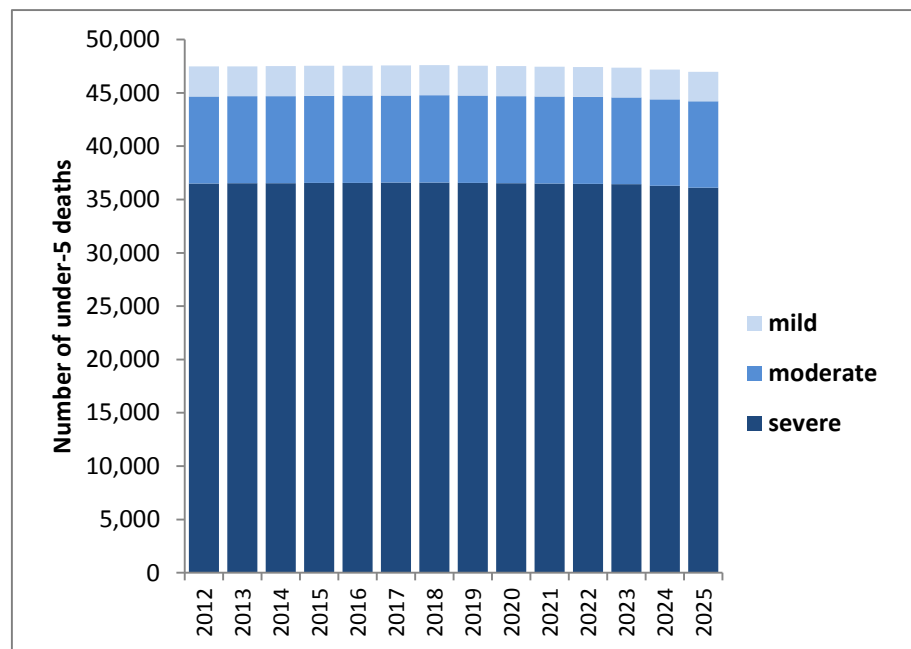
* Including through at-scale implementation of effective interventions that succeed in reaching the stated targets in terms of reductions in the prevalence of the various nutrition problems.

Table 6. Economic Productivity Losses and Gains

Nutrition Problem	Economic productivity losses if the current situation continues (US\$ mill) <i>Status quo scenario 2012–2025</i>	Economic productivity gains if nutrition situation improves* (US\$ mill) <i>Improved scenario 2012–2025</i>
Stunting	25,149	5,054
Iron deficiency anemia	2,050	492
Iodine deficiency	5,307	2,897

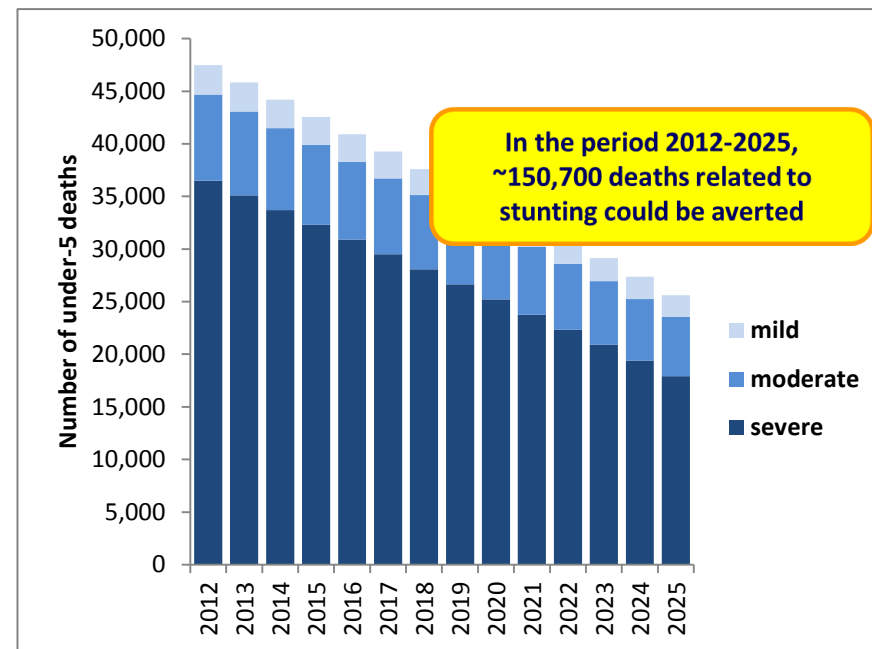
* Including through at-scale implementation of effective nutrition interventions that succeed in reaching the stated targets in terms of reductions in the prevalence of the various nutrition problems.

Figure 6. Status Quo: Number of Deaths for Children Under 5 Years Related to Stunting,* 2012–2025



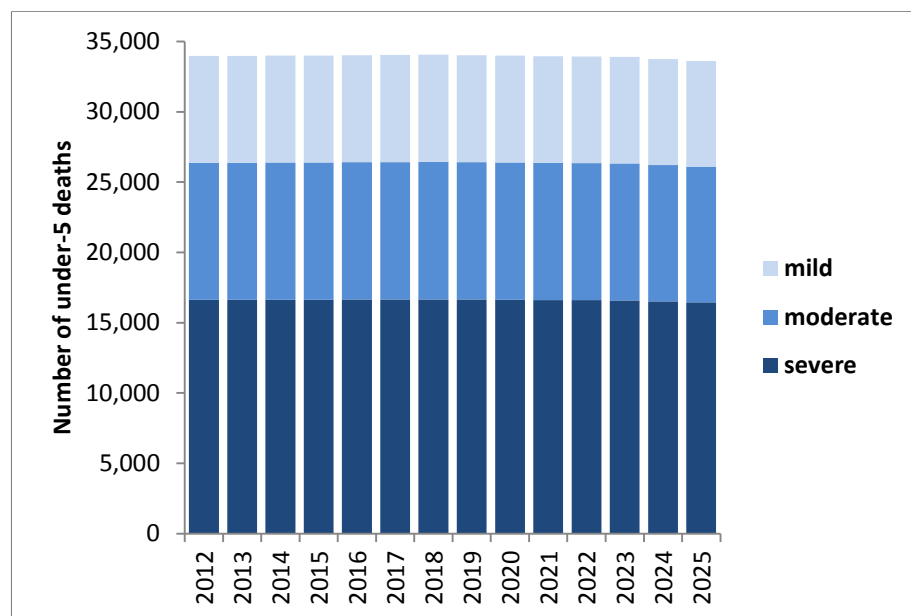
* Mild, moderate, and severe stunting (low height-for-age)

Figure 7. Improved Scenario: Decreasing Number of Deaths for Children Under 5 Years Related to Stunting,* 2012–2025



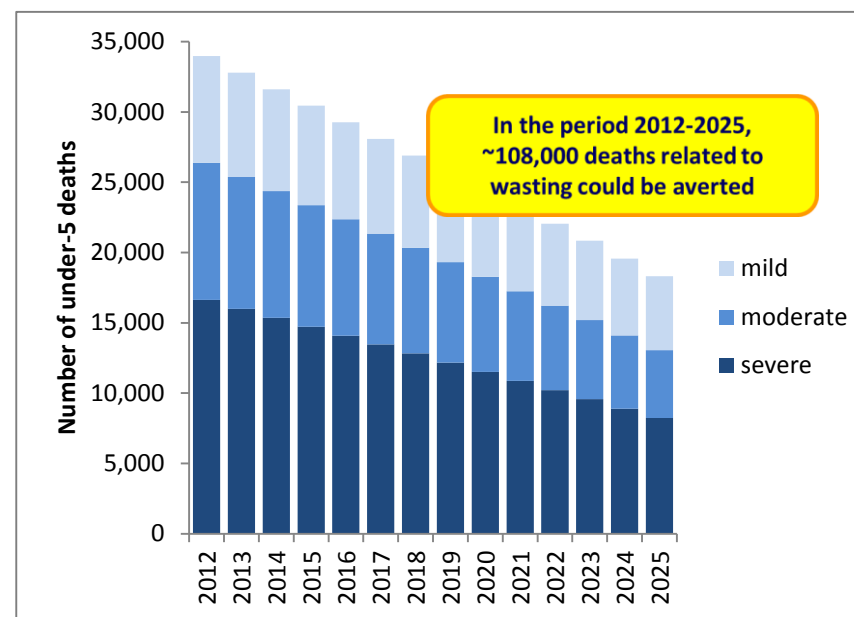
* Mild, moderate, and severe stunting (low height-for-age)

Figure 8. Status Quo: Number of Deaths for Children Under 5 Years Related to Wasting,* 2012–2025



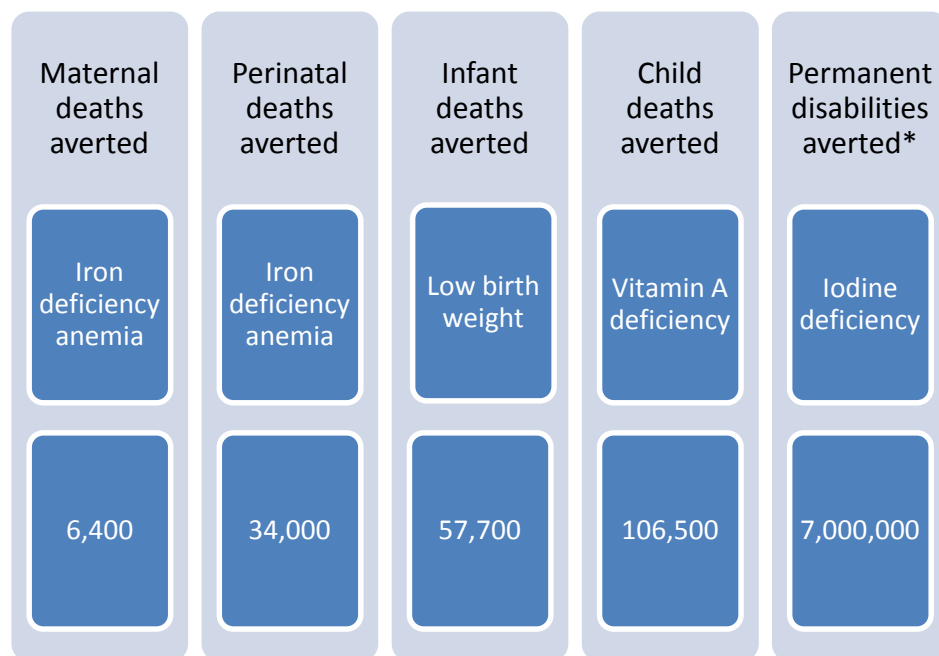
* Mild, moderate, and severe wasting (low weight-for-height)

Figure 9. Improved Scenario: Decreasing Number of Deaths for Children Under 5 Years Related to Wasting,* 2012–2025



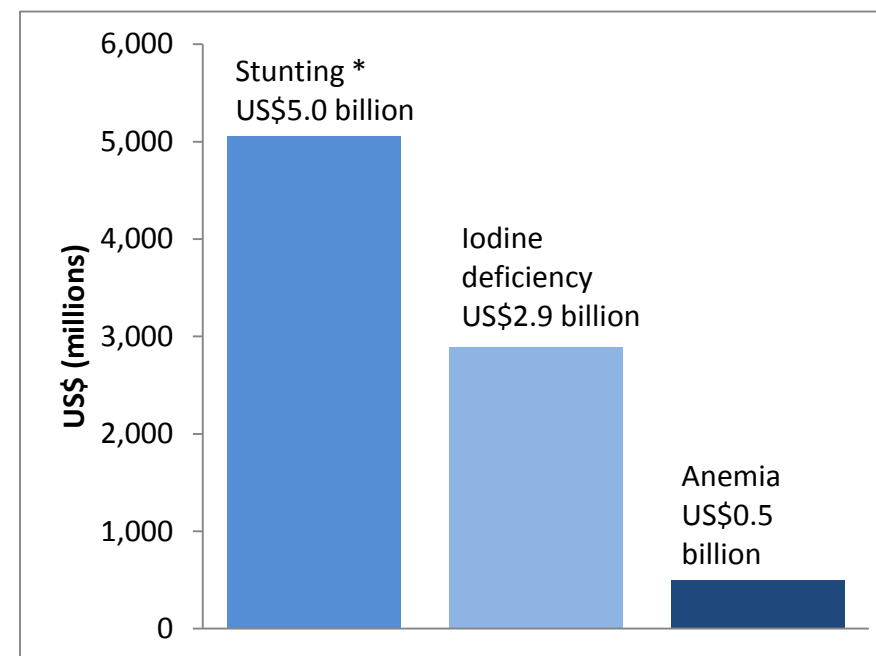
* Mild, moderate, and severe wasting (low weight-for-height)

Figure 10. Saving Lives and Preventing Disabilities, 2012–2025



* Cretinism and mild to severe permanent brain damage prevented

Figure 11. Productivity Gains by 2025



* Productivity gains from stunting also include gains that would result from improvements in stunting related to low birth weight.

5. Implications for Policy and Practice

The PROFILES estimates for Ethiopia clearly show that expanding access to maternal and child nutrition services at scale across the country could result in significant health and development benefits for the country—including significant gains in health and well-being, reduced maternal and child mortality, and improved economic productivity. As such, nutrition is a crucial investment for Ethiopia. These estimates, however, inherently assume that, over time, proven, effective, and evidence-based nutrition interventions will be provided at scale across the country to mothers and children, with a focus on a continuum of care that covers both the prevention and treatment of all forms of malnutrition, and that the interventions will succeed in reaching the stated targets in terms of improvement of various nutrition problems. Therefore, a greater investment and commitment by the Government of Ethiopia is required to create an enabling environment for improved nutrition—and a substantial effort to implement and expand access to quality nutrition services at scale is essential if the benefits of improved nutrition, as suggested by the PROFILES estimates for Ethiopia, are to be achieved.

Creating an Enabling Environment for Improved Nutrition

One issue that stakeholders reflected on throughout the process was how nutrition services should be implemented at scale. In order for this to occur, an enabling environment is needed that clarifies and guides government and nongovernment stakeholders on the expected results of nutrition interventions and that provides a framework with target outcomes, approaches, and populations to be reached. The six related recommendations to support achievement of the benefits of PROFILES include:

Policy-Based Recommendations

- 1. Create a high-level coordinating body at the Office of the Prime Minister level to oversee the National Nutrition Coordinating Body (NNCB).** Stakeholders identified the need for a functioning NNCB with regular reporting to a higher level, preferably within the Office of the Prime Minister. The NNCB has a strong multisectoral composition but—as the body is still in a nascent stage—can be strengthened by commitment to a plan of action and a line of reporting to a higher body that is responsible for making the NNCB accountable. This plan of action would include oversight on the implementation of the National Nutrition Program, including tracking the scale up, service delivery, and quality of services in nutrition. By developing a cadre of nutrition champions at this level, it will also ensure that nutrition interventions are integrated into sector plans, and would help to promote accountability at cascading levels below the NNCB, including the Regional Nutrition Coordinating Body (RNCB).
- 2. Develop guidelines for the Regional Nutrition Coordinating Body.** Stakeholders identified the need for a functional RNCB to oversee the implementation of the National Nutrition Program, ensure adequate resource

allocation for nutrition, and enforce nutrition-related regulation and legislation at the regional, *Woreda*, and *Kebele* levels.

3. Draft and enact legislation that reinforces the National Nutrition Program.

Stakeholders discussed priority policies that the Government of Ethiopia should commit to, including policies that promote micronutrient food fortification, restrict marketing of breast milk substitutes, and provide an enabling environment for women to exclusively breastfeed. The following policies should be drafted and/or enacted:

- Policy and code of marketing for breast milk substitutes. (This has been drafted by policymakers but needs to be enacted by Parliament.)
- Policy on 6-month maternity leave and paternity leave. (This has not yet been drafted by policy makers. The current policy on maternity leave is 3 months with no paternity leave.)
- Policies related to intake and distribution of micronutrients, including food fortification and salt iodization. (Policies on vitamin A, iron, and zinc have not yet been drafted).

Program-Based Recommendations:

4. Strengthen capacity of health workers to implement the National Nutrition Program.

Implementing the National Nutrition Program will require some changes to the existing service delivery structure, which also entails changes to the roles and responsibilities of health workers in the health system at different levels. Job descriptions should be revised to clarify the roles and responsibilities of health workers in integrating nutrition into their day-to-day work, and capacity strengthening activities should be included to support how to integrate nutrition for each tier of health worker. Among managers, effective supervision, monitoring, and evaluation will be important for ensuring quality service delivery and oversight of integrated nutrition services. At each level of service provision, health workers should be adequately trained on reporting and collecting nutrition-related data.

5. Ensure proven, effective, and quality nutrition-specific and nutrition-sensitive services are implemented at scale throughout the country.

Using a phased approach, these services should focus on the continuum of care from prevention to treatment of malnutrition. While the PROFILES tool has been used to estimate the benefits of reductions of iron deficiency anemia; low birth weight; vitamin A deficiency; iodine deficiency; and childhood stunting, underweight, and wasting in Ethiopia, these benefits can only be achieved through expanded evidence-based program services that enable improved nutrition at the household level.

6. Develop a social and behavior change communication (SBCC) strategy and communication plan linked with the National Nutrition Program.

To maximize the effectiveness of SBCC in Ethiopia, the government and implementing partners should have a unified and harmonized approach to SBCC, and develop a communication plan based on that approach. A consultative workshop is needed with the government and partners to develop a

comprehensive SBCC strategy which would align with the priorities and outcomes outlined in the National Nutrition Program. This process would focus on coordinating activities and resources for a multilayered SBCC approach and creating linkages and reinforcing messages between existing and needed nutrition SBCC projects and campaigns. This would ensure less duplication of effort, greater harmonization of messaging, and increased synergy between SBCC activities and would ensure that all stakeholders working on nutrition are speaking in one coordinated voice to promote key nutrition behaviors. In addition, the communication plan that complements the SBCC strategy would specify target audiences, the desired change for each audience, barriers inhibiting that change, communication objectives that address barriers, key messages, the channel mix (e.g., interpersonal, community-based, and mass media), activities, and materials.

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Appendix A. Working Draft: Ethiopia Nutrition Advocacy Plan

Background

The 2011 Ethiopia Demographic and Health Survey showed improvement in a number of nutrition indicators. However, more improvement is needed for the people of Ethiopia to reach their full health, education, and economic potential. Among children under 5 years of age, 44 percent experience chronic malnutrition (stunting, or inadequate height-for-age), 29 percent are underweight, and 10 percent suffer from acute malnutrition (wasting, or inadequate weight-for-height). Anemia affects 44 percent of children under 5 and 17 percent of women of reproductive age. Addressing malnutrition and its consequences requires commitment at the national, regional, *woreda*, and *kebele* levels to develop, fund, and implement effective nutrition interventions to improve nutritional status.

In 2011, the Federal Ministry of Health (FMOH) in Ethiopia, in collaboration with several key stakeholders, began the process of revising the National Nutrition Program (NNP).

Development of the National Nutrition Advocacy Plan for Ethiopia

To ignite change to improve nutrition at all levels, a comprehensive social and behavior change approach is needed. Within this approach, three key components are necessary:

1. Advocacy to increase resources and political/social commitment for change goals
2. Social mobilization for wider participation, collective action, and ownership, including community mobilization
3. Behavior change communication for changes in knowledge, attitudes, and practices of specific audiences



SOURCE: Adapted from McKee, N. Social Mobilization and Social Marketing in Developing Communities (1992)

This plan focuses on the outer ring of the graphic—advocacy—to build support for an enabling environment for nutrition. Advocacy is needed at national, regional, *woreda*, and *kebele* levels to galvanize support for effective implementation of the NNP, which is being led by FMOH. A unified and harmonized approach to nutrition advocacy in Ethiopia would maximize the effectiveness of efforts conducted by the government and partners. The additional two components illustrated in the inner rings—social mobilization and behavior change communication—will focus on igniting change at the community, household, and individual level. These components will build on existing interventions that target those most affected by the problem of malnutrition (e.g., pregnant and lactating women, children under 5, adolescents, people living with infectious diseases, and highly vulnerable children) as well as those who directly influence the target population (e.g., caregivers to children under 5, husbands/partners, teachers and school administrators, relatives, peers, leaders in the community, and service providers).

Key steps in the development of the advocacy plan included forming a core working group to oversee the process and bringing together key stakeholders from multiple sectors, donors, and implementing agencies to agree on an approach to nutrition advocacy, including an implementation plan and timeline. Members of the core working group include representatives from FMOH, the U.S. Agency for International Development (USAID), Renewed Efforts Against Child Hunger (REACH) (a partnership between the World Food Programme [WFP], UNICEF, the World Health Organization [WHO], and the Food and Agriculture Organization of the United Nations [FAO]), and the Food and Nutrition Technical Assistance III Project (FANTA) and Empowering New Generations in Improved Nutrition and Economic Opportunities (ENGINE) projects. The core working group, along with additional stakeholders, participated in a 4-day consultative workshop to develop estimates of PROFILES. PROFILES is an evidence-based tool to support nutrition advocacy. PROFILES uses models and country-specific data to project economic and health consequences of not adequately addressing a country's nutrition problems with no improvement in nutrition over a defined time period. It simultaneously estimates the benefits of improved nutrition over the same time period, including lives improved and saved, and economic productivity losses averted. Based on the projected consequences and benefits, PROFILES is used to advocate for evidence-based actions to improve nutrition.

In addition, the core working group, along with additional stakeholders, participated in a 4-day consultative workshop to develop the following advocacy plan, which aligns with the priorities and outcomes outlined in the NNP. This process included determining key audiences and tailoring activities and materials to address each group's desired changes and perceived barriers and benefits. The activities outlined in the following advocacy plan are expected to contribute to increased visibility, commitment, action, and resources for nutrition in the health, agricultural, education, and social development sectors, as well as in public sector management. The plan targets media; policymakers and parliamentarians; officials at the regional, *woreda* and *kebele* levels; donors; civil society; and the private sector.

Draft Ethiopia Nutrition Advocacy Plan

Problem	<ul style="list-style-type: none"> • Despite continued efforts, malnutrition rates in Ethiopia are unacceptably high • Nutrition lacks priority in Ethiopia and there is a lack of a long-term, sustainable vision that is owned at all levels • Coordination in the area of nutrition among government, donors, implementers, and between programs and other stakeholders across sectors is lacking • Inadequate financial and organizational resource investment toward reducing malnutrition • Low priority of nutrition issues in the media • Lack of private sector involvement in improving nutrition
Changes the Problem Calls For	<p>Advocacy should support the following changes:</p> <ul style="list-style-type: none"> • Ownership of nutrition within a high-level coordinating body (at the Office of the Prime Minister level) • Increased awareness and understanding of importance among the public and government • Increased leadership, commitment, coordination, and action at all levels and across sectors (i.e., agriculture, education, gender, and water) • Adequate budget line items for nutrition • Strengthened private sector involvement in nutrition
Final Audience Segmentation	<p>Those Most Affected by the Problem:</p> <ul style="list-style-type: none"> • Children (0-23, 24-59) months • Adolescents • Pregnant and lactating women • Highly vulnerable children • People living with HIV and tuberculosis

Final Audience Segmentation (continued)	<p>Those Directly Influencing the Most Affected:</p> <ul style="list-style-type: none"> Caregivers to children under 5 (including mothers and fathers) Husbands/partners of pregnant and lactating women Relatives of pregnant and lactating women and caregivers of children under 5, including siblings, in-laws, and extended family Neighbors and peers of caregivers and mothers of children under 5 Community media Traditional healers Teachers, students, and Parent-Teacher Associations Community and clan leaders, elders, and <i>kebele</i> leaders Religious/traditional leaders Peer mothers Women's groups Traditional birth attendants Small shop owners Service providers (e.g., development army, health workers, health extension workers, health development army) Youth groups Faith-based organizations Youth associations Higher education institutions Grassroots-level traditional associations <p>Those Indirectly Influencing the Most Affected:</p> <ul style="list-style-type: none"> Media practitioners including journalists and gatekeepers (i.e., editors and producers in television, radio, print, and online) Policymakers and parliamentarians Officials at the regional, <i>woreda</i>, and <i>kebele</i> levels Donors Civil society organizations Private sector
Strategic Approach/ Framing	<p>In order to create an enabling environment an advocacy approach is needed. The first phase will target media; policymakers and parliamentarians; officials at the regional, <i>woreda</i>, and <i>kebele</i> levels; donors; civil society organizations; and the private sector. A mutually reinforcing mix of activities that include events, workshops, trainings, roundtable discussions, print materials, and one-on-one meetings with selected influential individuals will build a critical mass of nutrition advocates and promote a national coordinated effort on nutrition. Parallel efforts will also target those most affected by the problem (e.g., pregnant and lactating women, children under 5, adolescents, people living with infectious diseases) as well as those who directly influence them (e.g., caregivers to children under 5, husbands/partners, relatives, neighbors and peers, community media, teachers, health workers/extension workers, traditional healers, and community and religious leaders). This will entail expanding the scope of the effort to include behavior change communication and social mobilization.</p>
Advocacy Activities and Materials	<p>A combination of:</p> <ul style="list-style-type: none"> Fact sheets, policy briefs, and other print materials Presentations/guides Workshops, seminars, and trainings with commitment to action One-on-one meetings Roundtable discussions Advocacy video Media outreach and press briefings (with TV, radio, and print coverage as an outcome) Exchange visits

Those Indirectly Influencing the Most Affected

Audience: Media including journalists and gatekeepers in government and private media (i.e., editors and producers in television, radio, print, and online)

Desired Changes	<ul style="list-style-type: none"> Increased number of media houses that include reporting on nutrition in their editorial policies Increased amount of accurate reporting on nutrition issues
Key Barriers	<ul style="list-style-type: none"> Competing priorities Lack of knowledge on nutrition issues
Advocacy Objective	By the end of 2015, there will be an increase in the number of media gatekeepers who understand the benefits of including reporting on nutrition in their editorial policy and an increase in the number of media practitioners with improved capacity (knowledge and adequate skills) to report on nutrition issues.
Activities	<ul style="list-style-type: none"> Media monitoring Face-to-face meetings and roundtables with media gatekeepers Training for journalists on nutrition and the importance of reporting on nutrition issues Follow-up roundtable discussions with media gatekeepers and journalists
Materials	<ul style="list-style-type: none"> Advocacy video Media training modules Media kit including: <ul style="list-style-type: none"> Fact sheets (including one on PROFILES results, and others on specific nutrition topics) FAQs on nutrition Contact list Press release/feature article Success story

Audience: Policymakers and Parliamentarians

Desired Changes	<ul style="list-style-type: none"> • Nutrition program coordination at a higher level (Office of the Prime Minister) • Regulations and policies drafted and legislated which reinforce the NNP (i.e., breast milk substitution, food fortification, salt iodization, and 6-month maternity leave) • Increased resource allocation for nutrition programs
Barriers	<ul style="list-style-type: none"> • Lack of nutrition champions at a higher level • Limited awareness on the magnitude of the nutrition problem and insufficient information on the investment needed for improved nutrition, resulting in nutrition not being a priority
Advocacy Objective	By the end of 2015, there will be an increased understanding of the benefits of improving nutrition resulting in high level coordination, adequate resource allocation, and nutrition-sensitive sector planning.
Activities	<ul style="list-style-type: none"> • Meeting on leadership and management • Briefings on the nutrition situation • Advocacy workshops/one-on-one meetings on specific policy issues (breast milk substitutes, maternity leave, food fortification, and salt iodization)
Materials	<ul style="list-style-type: none"> • Module on leadership and management on nutrition • Fact sheet on the nutrition situation with a call to action, including supporting proven, effective interventions to improve nutrition • Briefs on policies related to intake and distribution of micronutrients, including food fortification and salt iodization <i>[Note: policy on vitamin A, iron, and zinc has not yet been drafted]</i> • Brief on policies related to breastfeeding, including 6-month maternity leave and code on marketing of breast milk substitutes <i>[Note: policy on code of marketing for breast milk substitutes has been drafted but not yet enacted; policy on 6-month maternity leave and paternity leave has not yet been drafted; the current policy on maternity leave is 3 months with no paternity leave]</i> • Advocacy video • Success stories from other countries

Audience: Officials at Regional, *Woreda*, and *Kebele* Levels

Desired Changes	<ul style="list-style-type: none"> • Coordination among sectors at the regional, <i>woreda</i>, and <i>kebele</i> levels, including a functional Regional Nutrition Coordinating Body (RNCB), Regional Nutrition Technical Committee (RNTC), and <i>Kebele</i> Nutrition Technical Committee • Integration of nutrition into sector planning • Adequate resource allocation and efficient utilization of resources for nutrition • Enforcement of nutrition-related regulation and legislation
Barriers	<ul style="list-style-type: none"> • Limited awareness on nutrition and its impact on other sectors • Competing demands for resources
Advocacy Objective	By the end of 2015, there will be an increase in awareness at regional, <i>woreda</i> , and <i>kebele</i> levels on nutrition issues and multisectoral coordination, resulting in a functional RNCB, RNTC, and <i>Kebele</i> Nutrition Technical Committee; adequate resource allocation and efficient utilization of resources at all levels; and enforcement of nutrition-related regulation and legislation.
Activities	<ul style="list-style-type: none"> • One-day workshops on nutrition and nutrition-related policies • Capacity building workshops on monitoring, evaluation, research, and learning and on multisectoral implementation guidelines (in NNP)
Materials	<ul style="list-style-type: none"> • Advocacy video • Fact sheet including relationship between nutrition and the following sectors including roles and responsibilities for each: <ul style="list-style-type: none"> ○ Health ○ Agriculture ○ Education ○ Water and Sanitation ○ Women's empowerment • Training modules • Policy briefs (as noted under Policymakers and Parliamentarians)

Audience: Donors	
Desired Changes	<ul style="list-style-type: none"> Increased emphasis on programs that focus on preventive nutrition interventions and development, in addition to emergency efforts, especially for pastoral areas Nutrition included in donors' funding policies and agendas as a cross-cutting/mainstreaming area for every development program
Key Barriers	<ul style="list-style-type: none"> Competing priorities Global economic crisis Country's readiness (i.e., infrastructure and capacity) Lack of awareness/knowledge regarding nutrition's impact on development outcomes
Advocacy Objective	By the end of 2015, there will be an increase in awareness of the central role of nutrition in development outcomes among key donors and an increase in the readiness of donors to focus on prevention of malnutrition as well as treatment.
Activities	<ul style="list-style-type: none"> One-on-one meetings with key donors Advocacy workshops on topics including public-private partnerships Field visits for donors to sites of successful interventions
Materials	<ul style="list-style-type: none"> Fact sheet Advocacy video Success story booklet

Audience: Civil Society Organizations (CSOs) including international nongovernmental organizations, professional and development associations, and faith-based organizations

Desired Changes	<ul style="list-style-type: none"> Increased integration of nutrition objectives into CSO program planning and research activities (for those CSOs not yet involved in nutrition) Harmonization of messages on nutrition so that the CSO community is speaking in “one voice” (for those CSOs involved in nutrition)
Barriers	<ul style="list-style-type: none"> Competing priorities Lack of funding/donor influence on priority issues Lack of capacity Lack of awareness/knowledge regarding nutrition’s impact on development outcomes Lack of coordination
Advocacy Objective	By the end of 2015, there will be an increase in the number of CSO staff who have an increased awareness on the impact of nutrition on development outcomes, and there will be harmonized messages on nutrition among the CSO community.
Activities	<ul style="list-style-type: none"> Meetings with CSOs not involved in nutrition Regular meetings with CSOs involved in nutrition
Materials	<ul style="list-style-type: none"> Fact sheet (on why to integrate preventive nutrition interventions into program planning) Talking points for CSOs on nutrition issues Advocacy video Booklet of CSO success stories Quarterly newsletter on nutrition issues

Audience: **Private Sector**

Desired Changes	<ul style="list-style-type: none"> Increased number of private sector organizations engaged in support and promotion of breastfeeding (including 6-month maternity leave), food fortification, locally-produced specialized food products, and salt iodization activities
Barriers	<ul style="list-style-type: none"> Inadequate information on the consequences of malnutrition on productivity and profitability in business Concern regarding effect of 6-month maternity leave on profitability Lack of private-public partnerships
Advocacy Objective	By the end of 2015, there will be an increase in the awareness of the private sector on the importance of the Scaling Up Nutrition agenda.
Activities	<ul style="list-style-type: none"> Work with labor associations and Ministry of Labor and Social Affairs to profile private sector companies and determine priority companies to target with advocacy efforts Advocacy workshop for the private sector on nutrition policy issues including salt iodization, food fortification, locally-produced specialized food products, and breastfeeding, including the code on marketing of breast milk substitutes and 6-month maternity leave Field visits to other countries that have been successful with private-public partnerships
Materials	<ul style="list-style-type: none"> Mapping tool Advocacy video Fact sheet on salt iodization and food fortification Fact sheet on locally-produced specialized food products Fact sheet on breastfeeding including maternity leave and access to quality health care for mothers and children Background document of private sector companies being visited in each country

Draft Year One Implementation Plan Matrix

The implementation plan for Year Two will be developed during a consultative process with input from the core working group.

Target Group: Media			
Indicators:	<ul style="list-style-type: none"> % of media houses who integrate nutrition in to their editorial policy % increase in media coverage of nutrition issues % increase of media practitioners who report having improved capacity to cover nutrition issues % of media houses reporting nutrition issues (that adhere to national guidelines) 		
Means of Verification:	<ul style="list-style-type: none"> Media house editorial policies Media training pre- and post-assessments Baseline and continuous media monitoring assessments 		
ACTIVITY	MATERIALS TO SUPPORT ACTIVITIES	TIMELINE	RESPONSIBLE ORGANIZATIONS
Media monitoring baseline and continuous media monitoring	Parameters for media monitoring	Months 0–3 and on a quarterly basis	National Nutrition Coordinating Body (NNCB)/National Nutrition Technical Committee (NNTC)/FMOH
Face-to-face meetings and round tables with media gatekeepers (editors and producers, etc.)	Advocacy video <u>Media kit</u> - Fact sheets (including one on PROFILES and NNP costing estimates, and others on specific nutrition topics) - FAQs on nutrition - Contact list - Press release/feature article - Success story	Months 0–4	NNCB/NNTC/FMOH
Training for journalists on nutrition and the importance of reporting on nutrition issues	Training modules Media kit	Months 0–6	NNCB/NNTC/FMOH

Target Group: Media			
Indicators:		<ul style="list-style-type: none"> % of media houses who integrate nutrition in to their editorial policy % increase in media coverage of nutrition issues % increase of media practitioners who report having improved capacity to cover nutrition issues % of media houses reporting nutrition issues (that adhere to national guidelines) 	
Means of Verification:		<ul style="list-style-type: none"> Media house editorial policies Media training pre- and post-assessments Baseline and continuous media monitoring assessments 	
ACTIVITY	MATERIALS TO SUPPORT ACTIVITIES	TIMELINE	RESPONSIBLE ORGANIZATIONS
Follow-up roundtable discussions	Updated data Case studies (from CSO newsletters)	Ongoing	NNCB/NNTC/FMOH

Target Group: Policymakers and Parliamentarians

Indicators: <ul style="list-style-type: none"> # of policies and regulations enacted which reinforce the NNP (breast milk substitution, salt iodization, food fortification and 6-month maternity leave) % increase in the amount of budget allocated for nutrition activities % increase of government contribution to the total NNP cost # of champions at higher level # of nutrition interventions within sector plans Functional higher coordinating body established 			
Means of Verification: <ul style="list-style-type: none"> Documentation of policies Budget analysis Report from higher officials Nutrition intervention incorporated within plans/reports 			
ACTIVITY	MATERIALS TO SUPPORT ACTIVITIES	TIMELINE	RESPONSIBLE ORGANIZATIONS
Meeting on leadership and management on nutrition	Training module/materials on leadership and management on nutrition Fact sheets (using PROFILES and NNP costing estimates)	Months 0–3 in clusters Cluster 1: Tigray, Amhara, Afar Cluster 2: Oromia; Southern Nations, Nationalities, and Peoples' Region; Addis Ababa Cluster 3: Benishangul Gumuz, Gambela Cluster 4: Hararri, Somali, Dire Dawa	NNCB/NNTC/FMOH
Short briefing on current nutrition situation in Ethiopia (using existing meetings)	Fact sheets (using PROFILES and NNP costing estimates) Advocacy video Success stories from other countries	Months 4–6	NNCB/NNTC/FMOH
Advocacy workshops/one-on-one meetings with parliamentarians and policymakers on specific policy issues (code on marketing for breast milk substitutes, maternity leave, salt iodization and food fortification)	Policy briefs PowerPoint presentation	Months 4–9	NNCB/NNTC/FMOH

Target Group: Officials at Regional, *Woreda*, and *Kebele* Levels

Indicators:	<ul style="list-style-type: none"> • % of regions implementing a multisectoral NNP • % increase in nutrition-related activities at the regional level • # of plans and reports of RNCB and RNTC • # of officials with increased awareness on nutrition issues 	<ul style="list-style-type: none"> • # of regions enforcing nutrition regulation • # of regions with an established and functional RNCB and RNTC • # of <i>kebeles</i> with a functional <i>Kebele</i> Nutrition Technical Committee
Means of Verification:	<ul style="list-style-type: none"> • Progress reports • Pre- and post-assessments • Administration reports 	

ACTIVITY	MATERIALS TO SUPPORT ACTIVITIES	TIMELINE	RESPONSIBLE ORGANIZATIONS
One-day nutrition workshops for all levels (work with the Regional Educational Bureau and dovetail on the Annual Review Meeting to bring information to the <i>woreda</i> and <i>kebele</i> levels)	Fact sheets in local languages (using PROFILES and NNP costing estimates) NNP Advocacy video	Months 0–3	NNCB/NNTC/FMOH
Capacity building workshops on monitoring, evaluation, research, and learning, and multisectoral implementation guidelines (in NNP)	Training modules Policy briefs	Months 4–9	NNCB/NNTC/FMOH

Target Group: Donors			
Indicators: <ul style="list-style-type: none"> % increase in the amount of funding donors commit to support nutrition initiatives (private and public) % increase in the number of donors supporting preventive nutrition initiatives 			
Means of Verification: <ul style="list-style-type: none"> Donor reports Pre- and post-assessment 			
ACTIVITY	MATERIALS TO SUPPORT ACTIVITIES	TIMELINE	RESPONSIBLE ORGANIZATIONS
One-on-one meetings with key donors	Fact sheet (using PROFILES and NNP costing estimates) Advocacy video PowerPoint presentation	Months 0–6	NNCB/NNTC/FMOH
Advocacy workshops on topics including public-private partnerships	PowerPoint presentation Advocacy video	Months 0–6	NNCB/NNTC/FMOH
Visits for donors to field sites of successful interventions	Success stories	Months 6–12	NNCB/NNTC/FMOH

Target Group: Civil Society Organizations (including international nongovernmental organizations and grassroots organizations) *To be conducted in conjunction with Scaling Up Nutrition CSOs*

- Indicators:**
- % of CSOs that have integrated nutrition in their strategic and program planning (among those who have the potential to integrate nutrition)
 - % increase in CSO budget allocations for preventive nutrition activities
 - % of CSO leaders with understanding of the benefits of improving nutrition

- Means of Verification:**
- Strategic plans and program plans
 - Budget and financial reports
 - Pre- and post-assessment

ACTIVITY	MATERIALS TO SUPPORT ACTIVITIES	TIMELINE	RESPONSIBLE ORGANIZATIONS
Mapping exercise to identify CSOs that have the potential to include nutrition in their activities but are currently not involved	Survey tool (to conduct stakeholder mapping exercise to identify partners and examples of activities)	Months 1–2	NNCB/NNTC/FMOH
Meetings with CSOs not involved in nutrition	Fact sheet (on why to integrate preventive nutrition interventions into program planning) Advocacy video Success stories	Months 2–5	NNCB/NNTC/FMOH
Meetings with CSOs involved in nutrition	Report from PROFILES and Cost of Hunger Fact sheet (using PROFILES and NNP costing estimates) Advocacy video Talking points for CSOs	Quarterly	NNCB/NNTC/FMOH
Periodic newsletter for CSOs	Newsletter with updates to nutrition partners	Quarterly	NNCB/NNTC/FMOH

Target Group: Private Sector

Indicators:	<ul style="list-style-type: none"> • % of private sector organizations who meet minimum legal provisions made to pregnant and lactating women under Ethiopian law • % of private organizations with breastfeeding friendly work environments • % increase in the number of private firms engaged in food fortification and locally-produced specialized food products 	<ul style="list-style-type: none"> • % increase in the volume of fortified food and specialized food products produced locally • % of private sector companies willing to invest in food fortification • % of private sector leaders that can identify key legal obligations to support breastfeeding mothers
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Means of Verification: • Baseline and endline assessment

ACTIVITY	MATERIALS TO SUPPORT ACTIVITIES	TIMELINE	RESPONSIBLE ORGANIZATIONS
Profile private sector companies (in conjunction with labor associations and the Ministry of Labor and Social Affairs) and determine priority companies to target with advocacy efforts	Mapping tool	Months 0–3	NNCB/NNTC/FMOH
Advocacy workshops with select companies on nutrition policy issues including salt iodization; food fortification; promotion of breastfeeding, maternity leave, and access to quality health care for working mothers and their children; and locally-produced specialized food products (working in conjunction with the Labor Association)	Fact sheets (one on breastfeeding including maternity leave and access to quality health care for mothers and children; one on food fortification and salt iodization; and one on locally-produced specialized food products) Advocacy video	Months 4–6	NNCB/NNTC/FMOH
Field visits (for leadership from select companies to observe and learn from other countries' success in private-public partnerships)	Background documents of private companies being visited in each country	Months 0–12	NNCB/NNTC/FMOH

Target Group: All			
Indicators: <ul style="list-style-type: none"> # of participants from various sectors 			
Means of Verification: <ul style="list-style-type: none"> Participant lists 			
ACTIVITY	MATERIALS TO SUPPORT ACTIVITIES	TIMELINE	RESPONSIBLE ORGANIZATIONS
Launch of NNP (including PROFILES, NNP costing estimates and Cost of Hunger results)	PROFILES Report Cost of Hunger Report Fact sheets (using PROFILES, NNP costing and Cost of Hunger estimates) Press release	Month 4	NNCB/NNTC/FMOH

Appendix B. Participants in PROFILES Stakeholder Meetings, and PROFILES and Nutrition Advocacy Workshops

Name of Participant	Organization
Abiy Alazar	Johns Hopkins University/Center for Communication Programs, ENGINE Project
Abnet Tesfaye	FMOH
Abraham Orma	World Vision
Adam Bailes	UNICEF
Afewerk Ayele	UNICEF
Akiko Sato	WHO
Alem Abay	GAIN
Alemayhu Semign	European Union
Almaz Girmay	Ministry of Agriculture (DRMFSS)
Amanuel Kidane	Save the Children, ENGINE Project
Andenet Haile	Alive and Thrive
Aregash Samuel	Ethiopia Health and Nutrition Research Institute
Ato Alemayhu	Central Statistical Agency
Atsede Kebede	FMOH
Barbara Tembo	World Food Programme
Bayable Kiros	Ethiopian Academy of Sciences
Berhanu H/Giorgis	DFID
Betemariam Alemu	USAID
Carlos Acosta	Economic Commission for Africa, United Nations
Eleni Asmare	Food and Agriculture Organization
Elisabeth Sommerfelt	FHI 360, FANTA Project
Erika Lutz	Save the Children, ENGINE Project
Etsegenet Asefa	FHI 360, FANTA Project
Fedlu Muzeyen	Ministry of Women, Children and Youth Affairs
Ferew Lemma	FMOH
Getachew Dibaba	Save the Children
Girmay Ayana	Ethiopia Health and Nutrition Research Institute
Habtamu Fekadu	Save the Children, ENGINE Project
Hailu Wondim	Concern Worldwide
Hanna Shoaamare	Save the Children, ENGINE Project
Henock Gezahegn	Micronutrient Initiative
Israel Hailu	FMOH/ENGINE Project
Kenaw Gebresalssie	Save the Children
Mamit Kefyalew	FMOH

Name of Participant	Organization
Marcos Yeshanew	ENGINE Project
Martha Woldie	JICA
Mary Harvey	USAID
Medhanit Zegaye	Alive and Thrive
Mekonnen Tesfa Mariyam	Catholic Relief Services
Mesfin Beyero	World Vision
Mesfin Gosse	FMOH
Rachel Quint	World Food Programme
Selamawit Negash	UNICEF
Shimelese Tizazu	Action Contre La Faim
Simon Sadler	FHI 360, FANTA Project
Solomon Tamivar	Johns Hopkins University/Center for Communication Programs, ENGINE Project
Sorsa Faltamo	FMOH
Sosena Mellese	CONCERN Worldwide
Tara Kovach	FHI 360, FANTA Project
Telahun Teka	FHI 360, FANTA Project
Tenaw Bawoke	International Medical Corps
Tesfu Gessesse	Save the Children
Tigist Mamo	World Vision
Yared Nega	Ministry of Information
Yetarik Sebhatu	Save the Children, ENGINE Project