

Reducing Stunting in Ethiopia: “From Promise to Impact”

Full Report



Included:

- Description of a health system problem
- Viable options for addressing this problem
- Strategies for implementing these options



Not included: recommendations

This evidence brief does not make recommendations regarding which policy option to choose



Who is this policy brief for?

Policy makers, their technical & support staff, and other stakeholders with an interest in the problem addressed by this policy brief

Why was this policy brief prepared?

To inform deliberations about health policies and programmes by summarizing the best available evidence about stunting and viable solutions

What is evidence-based policy brief?

Evidence-based policy briefs bring together global research evidence (from systematic reviews*) and local evidence to inform deliberations about health policies and programs

*Systematic review: A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyze data from this research

Executive Summary

The evidence presented in this Full Report is summarized in an Executive Summary

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Preface

The purpose of this report

The purpose of this brief is to inform deliberations and to be used as a background document to be discussed at meetings among those engaged in developing policies on nutrition, maternal and child health, and people with an interest in such policies (stakeholders). It summarizes the best available evidence regarding the design and implementation of policies for reducing stunting in under-five children.

It is not intended to prescribe or proscribe specific options or implementation strategies. Rather, its purpose is to allow policymakers and stakeholders to systematically and transparently consider the available evidence about the likely impacts of different options in reducing stunting in under-five children in Ethiopia.

How this report is structured

The executive summary of this brief provides key messages and summarizes each section of the full report. Although this entails some replication of information, the summary addresses the concern that not everyone for whom the report is intended will have time to read the full report.

How this report was prepared

This evidence brief brings together global research evidence and local evidence to inform deliberations about stunting reduction in under-five children in Ethiopia. The issue raised in this brief, i.e. stunting, is a broad subject which is multi-factorial and complex and as a result, multiple causes of stunting are discussed. Thus, policy options in this brief are presented in a form of packages of interventions that can further be seen in an unpacked form whenever needed. Accordingly, we searched for relevant evidence describing the problem, the impacts of options for addressing the problem, barriers to implement those options, and implementation strategies to address these barriers. We searched particularly for relevant systematic reviews and up to date evidence of the effects of policy options and implementation strategies. We supplemented information extracted from relevant studies and documents (the methods used to prepare this report are described in more detail in Appendix 1).

Limitations of this report

This evidence brief planned to be based largely on existing systematic reviews. However, we couldn't find an up-to-date systematic review. Thus, we have attempted to fill in these gaps through other documents, focused searches and personal contact with experts, and external review of the report.

Summarizing evidence requires judgments of what evidence to include, the quality of the evidence, how to interpret it and how to report it. While we have attempted to be transparent about these judgments, this report inevitably includes judgments made by review authors and judgments made by ourselves.

Why evidence Brief should focus on systematic reviews

Systematic reviews of research evidence constitute a more appropriate source of evidence for decision-making than relying on the most recent or most publicized research study. ^{i, ii} Systematic reviews are reviews of the research literature that have an explicit question, an explicit description of the search strategy, an explicit statement about what types of research studies were included and excluded, a critical examination of the quality of the studies included in the review, and a critical and transparent process for interpreting the findings of the studies included in the review.

Systematic reviews have several advantages. ⁱⁱⁱ Firstly, they reduce the risk of bias in selecting and interpreting the results of studies. Secondly, they reduce the risk of being misled by the play of chance in identifying studies for inclusion or the risk of focusing on a limited subset of relevant evidence. Thirdly, systematic reviews provide a critical appraisal of the available research and place individual studies or subgroups of studies in the context of all of the relevant evidence. Finally, they allow others to appraise critically the judgments made in selecting studies and the collection, analysis, and interpretation of the results.

While practical experience and anecdotal evidence can also help to inform decisions, it is important to bear in mind the limitations of descriptions of success (or failures) in single instances. They may be useful for helping to understand a problem, but they do not provide reliable evidence of the most probable impacts of policy options.

Uncertainty does not imply indecisiveness or inaction

We could not find systematic reviews for the included policy options showing stunting reduction in children under five years as a direct outcome. Hence, their effects on stunting reduction cannot be certain. Nonetheless, policymakers must make decisions. Uncertainty about the potential impacts of policy decisions does not mean that decisions and actions can or should not be taken. However, it does suggest the need for carefully planned monitoring and evaluation when policies are implemented. ^{iv}

“Both politically, in terms of being accountable to those who fund the system, and also ethically, in terms of making sure that you make the best use possible of available resources, evaluation is absolutely critical.”

(Julio Frenk 2005, former Minister of Health, Mexico) ^v

The problem

Stunting is a severe public health problem in Ethiopia leading to huge economic loss every year (16.5 percent of the GDP)

Background

Stunting is defined as the percentage of children aged 0 to 59 months whose height for age (HAZ) is below minus two standard deviations (moderate and severe stunting) from the median of the 2006 WHO Child Growth Standards (WHO, 2018a). Stunted children are too short for their age. Stunting is a manifestation of severe, irreversible physical, physiological and cognitive damage caused by chronic malnutrition during a child's first 1,000 days or from the beginning of pregnancy until the age of two years (UNICEF, 2018; World Bank Group, 2016).

Every year, stunting is the cause of the death of one million children around the world (UNICEF, 2015). For the children who survive, stunting in infancy and early childhood causes long term effects, including poor cognition and educational performance, diminished physical development, poor health, lost productivity and low adult wages (Horton & Steckel, 2013; Martorell, 2010; UNICEF, 2015).

The report by UNICEF/ WHO/ World Bank stated that 151 million (22 percent) under five children were stunted globally. Low-income and lower-middle-income countries account for almost all (91 percent) stunted children worldwide whereas more than one in three exists in Sub-Saharan Africa including Ethiopia (UNICEF/WHO/World Bank, 2018). Although the prevalence of stunting is decreasing in all regions of the world, Africa is the only region with a rising number of stunted children. In view of this, the absolute number of stunted children in Africa is expected to increase from 56 million in 2010 to 61 million by the year 2025 (Black et al., 2013; UNICEF/WHO/World Bank, 2018).

Ethiopia is among countries with the highest number of stunted under-five children in the World (IFPRI, 2016; WHO, 2016). To end child malnutrition including stunting, the country has signed different global initiatives and made national commitments (FDRE, 2016; FMOH, 2015a; Onis et al., 2013; United Nations, 2016). However, the current investment levels are inadequate to drive the progress that is needed to meet these targets.

Therefore, the objective of this evidence-informed evidence brief is to summarize the best available evidence describing the problem of stunting among children under the age of five years in Ethiopia and to suggest potential solutions to address the problem.

How big is the Problem?

In Ethiopia, about two out of every five (38.4 percent) children under five years are stunted (CSA and ICF, 2016; UNICEF/WHO/World Bank, 2018). Though the recent Ethiopian Demographic Health Survey (EDHS 2016) highlighted that the prevalence of stunting among children under five is decreasing, the prevalence remains unacceptably high (CSA and ICF, 2016) (*See Figure 1*). Additionally, evidence from EDHS and various pocket studies conducted all over the country also revealed that stunting is still widely distributed in under five children with wide variation among regions in Ethiopia (Asfaw et al, 2015; Berihun and Azizur, 2013; CSA and ICF, 2016; Teshomee et al, 2010).

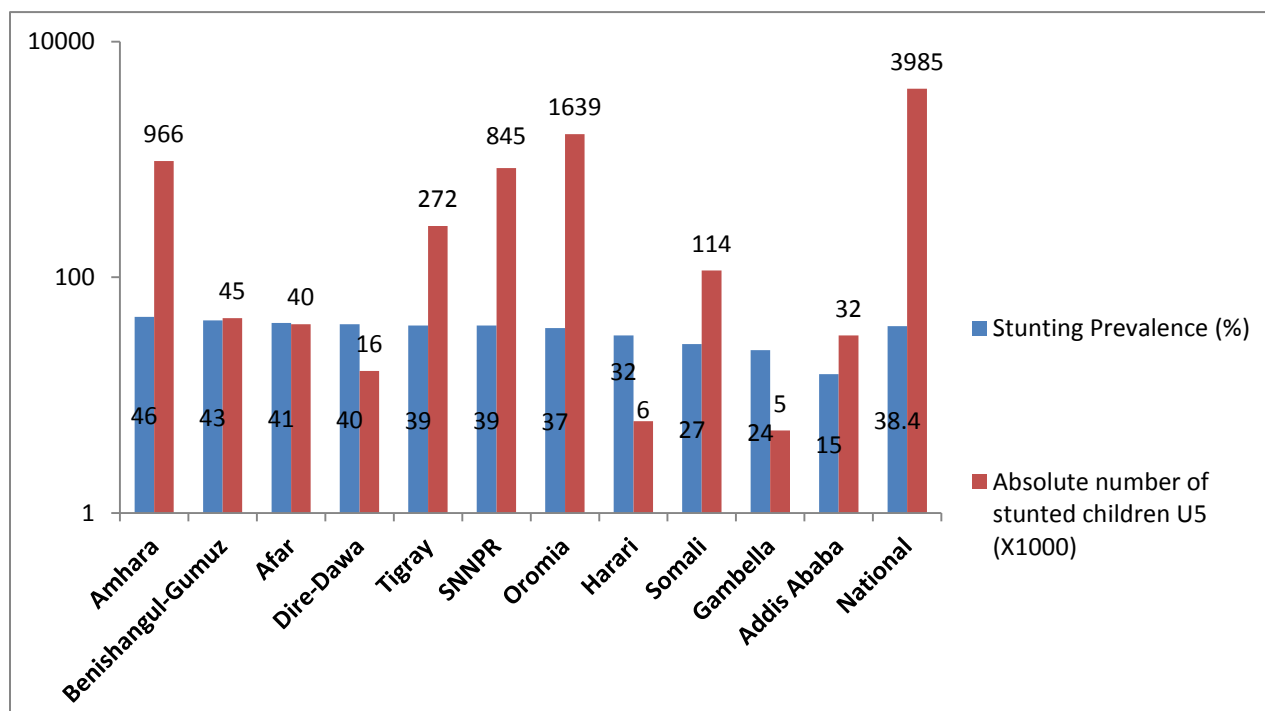


Fig. 1: Distribution of stunting across regions of Ethiopia by prevalence and absolute number, EDHS 2016

According to WHO prevalence threshold classification, a prevalence rate that exceeds 30 percent is labeled as “very high” , where Ethiopia is included (UNICEF/WHO/World Bank, 2018).

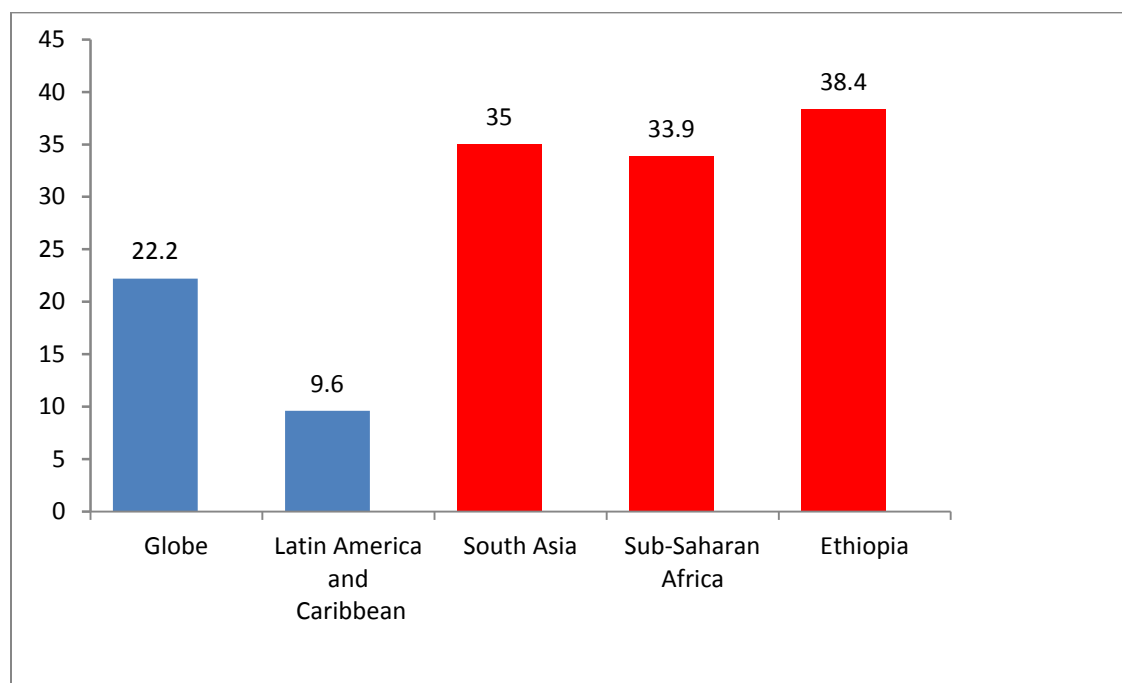


Fig.2: Ethiopia’s stunting prevalence compared with selected regions of the world (UNICEF/WHO/World Bank, 2018).

The high stunting rate in Ethiopia has resulted in subsequent life course impact on the long-term health of individuals and the socioeconomic development of the nation (FMOH, 2015a). About half of infant and child deaths in Ethiopia are associated with stunting and other forms of undernutrition (UNICEF, 2018). These mortalities related to undernutrition led to the reduction of the country’s workforce by eight percent hindering economic growth, as they could have been healthy productive members of the society (African Union Commission, 2013).

The cost of hunger report estimated that about 67 percent of the adult population in Ethiopia suffered from stunting as children. When a child is stunted, he or she will have an increased chance of experiencing various health problems, reduced cognitive capacity and are more likely to repeat grades in school. Consequently, 16 percent of all primary school repetitions in Ethiopia is associated with stunting (African Union Commission, 2013).

The cost of hunger report also indicated that when children are stunted, the impact continues when they enter the labor force, making them less productive and less able to contribute to the national economy. As a result, Ethiopia loses 16.5 percent of its GDP each year due to the long term effects of child undernutrition. The report also estimated that Ethiopia can save US\$12 billion by 2025 if it reduces underweight rates to five percent and stunting to 10 percent in children under five years of age (African Union Commission, 2013).

Different global initiatives have been endorsed to tackle stunting and other forms of malnutrition. Accordingly, the UN Sustainable Development Goals (SDGs) targets to end all forms of malnutrition by 2030 (United Nations, 2016), including achieving the World Health Assembly (WHA) targets of a global 40 percent reduction in the number of stunted under-five children by 2025 (Onis et al., 2013). This global target would translate into a four percent relative reduction per year and imply reducing the number of stunted children from 171 million in 2010 to about 100 million in 2025 (Onis et al., 2013). However, at the present rate of decline, the prevalence of stunting is expected to reach ONLY 20 percent, or 127 million, in 2025 indicating the world is off-track to achieve the targets (Black et al., 2008; GNR, 2018).

According to the global progress report, Ethiopia requires a 6 percent average annual reduction rate (AARR) to achieve the WHA 2025 target of 26.8 percent prevalence. But the current reduction rate is only at 2.8 percent which is far below the expected annual reduction rate (WHO, 2015). Thus Ethiopia is off-track to reach the United Nations sustainable development goals of ending child malnutrition by 2030 or the National commitment of “Seqota Declaration”(FDRE, 2016; WHO, 2016).

Causes of the problem

Different studies have established various determinants of stunting for children under the age of five years. However, there is lack of agreement about the relative importance of factors affecting the nutritional status of children (Wondimagegn, 2014). A conceptual framework by *Fenske et al, 2013* was considered to conceptualize the causes of stunting in this evidence brief. This framework was used mainly because it is a result of systematic review specific to lower and middle-income countries and focuses on the causes of stunting within the first 1000 days of life. Accordingly, the causes of stunting are multi-sectoral and multifactorial, including food, health,

and care practices, and are classified as underlying (maternal, household and regional characteristics), intermediate (individual/household level) and immediate (individual level) (Fenske et al, 2013). Where found appropriate, UNICEF malnutrition framework was used as a supplementary document.

1. Underlying causes

1.1. Maternal Undernutrition

Maternal nutritional and health status before, during and after pregnancy influences a child's early growth and development beginning in utero and contributes importantly to the risk of stunting. Maternal undernutrition contributes to fetal growth restriction, which increases the risk of neonatal deaths and, for survivors, of stunting by 2 years of age (Black et al., 2013; Gluckman & Pinal, 2003). Intrauterine growth restriction due to maternal undernutrition (estimated by rates of low birth weight) accounts for 20 percent of childhood stunting (Black et al., 2013). A number of studies in Ethiopia have also shown a significant association between maternal nutrition and child stunting (Berihun and Azizur, 2013; Medhin et al., 2010; Mulugeta et al., 2010; Tariku et al, 2014).

Other maternal contributors to stunting include short stature and adolescent pregnancy, which interferes with nutrient availability to the fetus (owing to the competing demands of ongoing maternal growth (Black et al., 2013; Naik, 2015). The Ethiopian DHS and other pockets studies also supported these facts (CSA and ICF, 2016; Remancus, 2014).

1.2. Short Birth Spacing

Short-spaced births do not allow women's bodies to recuperate and replenish essential nutrients and lead to poor nutritional outcomes; and it has been associated with an increased prevalence of stunting among children under-five (Naik, 2015).

Studies conducted in Ethiopia (Asfaw et al, 2015; Berhanu et al, 2018) and elsewhere also found that short birth spacing played an important role in increasing stunting prevalence (Sudfeld et al, 2014).

1.3. Poor Parental education

Parental education and particularly maternal education is associated with lower rates of child stunting (Semba et al., 2008). Various studies in Ethiopia have also shown that maternal education has a significant influence on the reduction of child stunting (CSA and ICF, 2016; FMOH, 2016b; G.Woldemariam, 2002; Gebreyesus et al, 2015; Woodruff et al., 2016). The impact of maternal education is not only through its effect on nutrition, but might also be through additional income and mothers ability to make better decisions for herself and her children. Moreover, maternal education attainment can be linked to the ability of mothers to make healthier choices in caring practices (FMOH, 2016a).

1.4. Inadequate food production and distribution

Ethiopia's crop agriculture is complex, involving substantial variation in crops grown across the country's different regions and ecologies. Five major kinds of cereal which are the staple food of the country (teff, wheat, maize, sorghum, and barley) are the core of Ethiopia's agriculture accounting for about three-fourths of the total area cultivated, and 64 percent of calories consumed (Taffesse et al, 2017). There has been substantial growth in cereals but the yields are low by international standards, and overall production is highly susceptible to weather shocks, particularly droughts with 26.4 percent drought-prone farm (Taffesse et al, 2017). The Northern and central part of Ethiopia suffered their worst drought in decades (Sjoukje Philip, 2015) where primary clusters for child stunting is seen indicating the variation of stunting within and between local authorities (Alemu et al, 2016; Haile et al, 2016).

The diet in Ethiopia often lacks in animal-source foods (meat, fish, eggs, and dairy) and the availability of fruits and vegetables is also exceedingly below the average (COMPACT, 2016). On top of this, there are significant postharvest losses ranging from 30 to 50 percent (Kitinoja & Kader, 2015). Food price is also a major factor affecting food choices (Ghattas & FAO, 2014).

1.5. Food Insecurity

Studies conducted in developing countries including Ethiopia indicated that food insecurity and stunting have a direct association. Studies done in Ethiopia have shown that children borne to

severely and moderately food insecure households were more likely to be stunted than children borne to food secured households (Ali et al., 2013; Gebreyesus et al, 2015).

In 2015, about 10 percent of Ethiopian citizens were chronically food insecure and this figure increased to more than 15 percent during subsequent drought years (Endalew et al, 2015). The government of Ethiopia had announced humanitarian assistance for 10.2 million people (435, 000 children under-five) in need of emergency food assistance for the year 2016 because of El Niño global climactic event. Even currently the number of people targeted for relief food and cash support remains largely unchanged due to the significant spike in internal displacement since April 2018 (OCHA, 2018).

1.6. Low Household Income

A stunted child is more likely to have been born into a low-income household; hence, intergenerational transmission of poverty and of childhood stunting is a possibility and may become a vicious cycle (Martorell & Zongrone, 2012). According to the recent Situation Analysis of the Nutrition Sector (SITAN) study in Ethiopia, there is an association between poverty and stunting, hence, children from lowest wealth quintile were found to be stunted (FMoH, 2016b).

1.7. Socio-Cultural beliefs and Practices

Within Ethiopian society, cultural practices that affect nutritional outcomes have been identified. For instance, in some communities, it is taboo for the mother to eat meat and eggs during pregnancy, believing that it will lead her to have a big baby, which can cause problems during delivery. Similarly, some communities believe that pregnant mothers should not consume milk because the baby could have a whitish covering over its head when it is born. There is also a belief that food should not be given to a child who is suffering from measles or diarrhea. Some of the cultural factors that may affect child stunting in Ethiopia include societal beliefs that children and women should eat last i.e., usually leftovers and poor quality of food (FMOH, 2013).

Religious beliefs and practices can also affect nutrition outcomes. For instance, the fasting practices (220 days per year for the Orthodox Church) in which no animal products consumed

exacerbate maternal and child undernutrition in Ethiopia. Based on the study from the ENGINE project in Ethiopia, although pregnant women and children under the age of seven are excused from fasting, it was observed that many still fast in solidarity with the rest of the family (ENGINE, 2014) because of fear of inter-contamination of kitchen utensils. Another spiritual practice is the case of the Afar community, where the newborn should wait until the morning sunrise before initiating breastfeeding (Sabit et al, 2013).

1.8. Poor Maternal Decision-making Power

Mothers' decision-making power has an association with childhood stunting. A cross-country study that analyzed DHS datasets from 12 developing countries found that mothers' greater decision-making power was positively related to children's height-for-age in low and middle-income countries (Desai & Johnson, 2005).

In most parts of Ethiopia, women have less access to money, land and other resources, and less control over family decisions than men, where women are forced to raise children alone (FMOH, 2013).

2. Intermediate causes

2.1. Poor Water, sanitation and Hygiene Practices (WASH)

Unsafe drinking water, poor sanitation, and hygiene results in undernutrition and stunting in children (Dangour, 2013; Lin et al., 2013). Likewise, poor water, sanitation, and hygiene (WASH) services were identified as one of the main risk factors for child stunting in Ethiopia (Bitew et al, 2016; FMOH, 2016b; Tariku et al, 2014).

2.2. Inappropriate Infant and Young Child Feeding Practice (IYCF)

Improving infant and young child feeding (IYCF) practices at the appropriate ages provide a major opportunity for enhancing child growth and reducing the risk of stunting (Menon et al, 2015; WHO, 2008).

Ideally, infants should be breastfed within one hour of birth, breastfed exclusively for the first six months of life and continue to be breastfed up to 2 years of age and beyond. However, only 58

percent of mothers exclusively breastfeed, while 67 percent of children under two years of age are receiving age-appropriate breastfeeding in Ethiopia (CSA and ICF, 2016).

Similarly, appropriate complementary feeding includes a variety of foods to ensure nutritional requirements starting at 6 months (UNICEF, 2013). The case of Ethiopia with this regard, however, indicated that only 7 percent of children are fed according to the minimum acceptable diet (MAD) standards (CSA and ICF, 2016). Similar findings are reported from pocket studies in Ethiopia which indicate that low diet diversity is a significant determinant factor for stunting in the country (FMoH, 2016b; Motbainor et al, 2015).

2.3. Micronutrient deficiencies

Adequate intake of minerals and vitamins are essential for proper growth and development. Iodine, Vitamin A, Zinc and Iron are the most important in global public health terms; their deficiency represents a major threat to the health and development of population worldwide, particularly children and pregnant women in low-income countries (WHO, 2018b).

Consumption of foods rich in vitamin A or iron remains low among young children in Ethiopia. In the last demographic and health survey in Ethiopia, it was found that among children aged 6-59 months, only nine percent and 45 percent have taken iron and vitamin A supplementation, respectively (CSA and ICF, 2016).

2.4. Poor access to healthcare services

The WHO framework of childhood stunting by context, causes, and consequences illustrates access to health care, qualified healthcare providers, availability of supplies and infrastructure, health care system and policies as a community and societal (contextual) factors that lead to stunted growth and development (Stewart et al, 2013).

Studies in Ethiopia showed that low healthcare utilization for childhood illnesses might contribute to child malnutrition (Alene et al, 2019; Sheikh et al., 2017). In a study conducted in rural Ethiopia, it was shown that poor access to healthcare including vaccination and curative care put rural children on chronic and repeated illness including stunting (Berihun and Azizur, 2013).

3. Immediate Causes

3.1. Infection, Inadequate Caloric and Nutrient Intake and Uptake

Nutrient intake and uptake of a child is affected by infection; decreasing food intake, impairing nutrient absorption, causing nutrient losses due to vomiting, diarrhea, poor digestion, increased metabolic requirements, impaired transport of nutrients to tissues and also altered long bone growth (Stephensen, 1999).

According to WHO stunting framework, an infection that could result in stunting includes enteric infections like diarrheal disease and environmental enteropathy, respiratory infections, helminths, malaria and inflammation (Wirth et al., 2017). The presence of both acute and chronic infectious diseases during childhood among children living in the poor developing country results in up to 43 percent of stunted growth (Guerrant et al, 2014; Stephensen, 1999).

In Ethiopia, childhood illnesses and a heavy burden of multiple infections have been recognized as important risk factors negatively affecting linear growth in children (Asfaw et al, 2015; Bitew et al, 2016; Senay et al, 2016; Tariku et al, 2014). In addition, different studies also showed that the presence of diarrhea (Asfaw et al, 2015; Teshomee et al, 2010; Wirth et al., 2017) and malaria was highly associated with stunting.

Poor Multi-Sectoral Collaboration in stunting reduction

Even though poor multi-sectoral collaboration could not be listed as one of the causes of stunting in Fenske et al 2013/UNICEF/WHO framework, different evidences show that stunting is a multi-causal problem which needs a well-functioning multi-sectoral platform for its reduction. These platforms function at their best where there is an agreement on common results and objectives, membership and terms of reference, organizational framework(s) and working procedures(Horton et al, 2010). However, current Ethiopia's approach to multi-sectoral collaboration is characterized by lack of accountability, authority lines being parallel, unclear structure from national to the local level, and sectors failing to see their intervention with nutrition lens as highlighted in the multi-sector implementation assessment reports by the Federal Ministry of Health. The Ministry's report indicates 46 percent sectors did not establish structure and did not develop a strategic document, 38.4 percent did not have a plan, and only 30 percent

had government budget line. The scorecard assessment findings indicated majority sectors fell below expectations and there were no continuous efforts to track changes (FMoH, 2017).

Policy options¹

Ethiopia has endorsed major global and national commitments and envisioned to see children free from undernutrition including stunting. As part of the national commitments, key targets include the “Seqota Declaration” to end stunting in children under two by 2030 and the Health Sector Transformation Plan to Reduce childhood stunting in under-five years from 40% to 26% by the end of the year 2020 (FMOH, 2015b).

Despite the above commitments, the country is off-track and needs a proven high impact evidence-based and integrated interventions to achieve the ambitious targets. This evidence brief, therefore, tries to address the contextual problems based on the current best available evidence. The options are 1) Nutrition-specific interventions, 2) Nutrition-sensitive interventions, and 3) Shifting the current multi-sectoral approach to a consolidated independent government entity

Option One: Nutrition-specific interventions

Nutrition-specific interventions or programs address the immediate and some intermediate determinants of stunting (Black et al., 2013). According to the lancet maternal and child nutrition series, ten proven nutrition-specific interventions can make a substantial difference for poor segments of the population who are at greater risk.

The following are the ten nutrition-specific interventions addressing immediate and some intermediate causes:

- Management of severe acute malnutrition (SAM)
- Management of moderate acute malnutrition (MAM)
- Maternal and child micronutrient supplementation
 - Maternal calcium supplementation
 - Periconceptual folic acid supplementation
 - Vitamin A administration in children aged 6-59 months
 - Preventive zinc supplementation in children aged 6-59 months
 - Maternal balanced energy protein supplementation

¹ Policy Options here refers to possible interventions for the reduction of stunting which could be applied independent of each other, or in combination or all

- Multiple micronutrient supplementation in pregnancy
- Infant and Young Child Feeding Practice (IYCF)
 - Optimum breastfeeding
 - Appropriate complementary feeding

Impacts of nutrition-specific interventions

We could not find a systematic review dealing with the impacts of nutrition-specific interventions in reducing the level of stunting in children less than five years. However, based on the lancet maternal and child nutrition series, nutrition-specific interventions have a direct impact on the prevention and treatment of undernutrition, in particular, the 1,000 days covering pregnancy and child's first two years. If these ten proven nutrition-specific interventions were scaled up from existing population coverage to 90 percent, the prevalence of stunting could be reduced by 20 percent and that of severe wasting by 60 percent (Black et al., 2013).

Current Practice in Ethiopia

Though the global evidence indicated that stunting rate can be reduced by 20 percent if the 10 nutrition-specific interventions were implemented and scaled up to 90 percent coverage, the implementation status of these interventions in Ethiopia have not been well documented and the current national coverage status is *unknown*² (See annex 3). However, Ethiopia has undertaken various initiatives through its National Nutrition Program (NNP) to implement the nutrition-specific interventions, including growth monitoring and promotion, deworming, nutritional screening, vitamin A supplementation, salt iodization, and community-based management of acute malnutrition to end stunting in the country.

Option Two: Nutrition-sensitive interventions

Nutrition-sensitive refers to interventions or development efforts that, within the context of sector-specific objectives, aim to improve the underlying determinants of nutrition (adequate food access, healthy environments, adequate health services, and care practices), or aim at least to avoid harm due to the underlying or intermediate causes, especially among the most nutritionally vulnerable populations and individuals. Various actions that contribute to

² *Unknown- indicates the current national coverage of the ten nutrition-specific interventions as a package*

addressing the determinants of malnutrition are possible in many sectors' different programs and interventions.

Nutrition-sensitive interventions or programs include:

- Agriculture and Food Security
- Schooling (Education)
- Water, sanitation, and hygiene (WASH)
- Health and Family Planning services
- Women's empowerment
- Social Protection and Safety nets (women & children)
- Early Childhood Development (ECD)

Impacts of nutrition-sensitive interventions

We could not find systematic reviews showing the impact of nutrition-sensitive interventions on stunting reduction. However, reviews and program evaluations showed nutrition-sensitive interventions might help to accelerate progress in improving nutrition by enhancing the household and community environment in which children develop and grow, and by increasing the effectiveness, coverage, and scale-up of nutrition-specific interventions (Black et al., 2013; Hossain et al., 2017).

Current Practice in Ethiopia

Ethiopia as clearly stipulated in the NNP II has developed various nutrition-sensitive initiatives for various sectors to strengthen the implementation across sectors for the years 2016-2020. However, the initiatives lack clear and key indicators with no or poor progress tracking mechanisms (*See annex 4*). As a result, we were not able to clearly state the current status of nutrition-sensitive interventions.

Applicability, Equity, Economic consideration and M&E for Options One and Two

Applicability: Reaching the stunting targets could be feasible but will require large coordinated investments in key nutrition interventions and a supportive policy environment. Both nutrition-specific and sensitive interventions appear most successful where strong political commitment

and multi-sectoral collaboration between government, non-government, national and international organizations exist and where programs are delivered through community service delivery platforms with active community engagement and health system strengthening (Hossain et al., 2017).

Even though combined interventional packages result in greatest reductions in stunting, no fixed combination of intervention necessarily demonstrates the greatest benefit in all contexts. Various evidence supports the suggestion that programs managers and policymakers should identify and implement context specific intervention packages by addressing all three connections (country, community, and programs) to achieve effective stunting reduction (Hossain et al., 2017; WHO, 2014).

Equity: Even though we could not find a systematic review that shows the relationship between equity and nutritional interventions, it is likely that these interventions will advance the health status of mothers and children and ensure equity by improving their chance of enjoying their right to health.

Economic considerations: Global evidence indicates that for every 1USD invested in stunting there is an estimated 18 USD generated in economic returns. The economic return of combined interventions, however, should be researched in advance with regard to a combination of interventions and the ultimate impact on stunting reduction. With a combination of cost-effective intervention, political will, widespread advocacy, and smart investments, ending childhood malnutrition within a generation is possible if the global community truly comes together to accelerate and sustain financing and action. Despite the overwhelming evidence of the economic impact of reducing young child malnutrition, both domestic and donor contributions to improving nutrition have been inadequate and slow (World Bank Group et al., 2016).

Monitoring and Evaluation: Both nutrition-specific and nutrition-sensitive interventions should have strong monitoring and evaluation (M & E) systems. The M & E system should incorporate strong key indicators, utilize findings and develop standardized reporting mechanisms. There is a need to address the M & E systems of both options due to the uncertainty about the effect and cost-effectiveness of the interventions.

Option Three: Shifting the Current multi-sectoral approach to a consolidated independent government entity

The current multi-sectoral coordination and integration of nutrition program implementations in Ethiopia are not strategic to bring about sought-after changes to the long-lasting public health problem, mainly because of lack of commitment, clear structure, accountability, leadership and responsibility at all levels and in all sectors (FMoH, 2018).

Therefore, this evidence brief proposes a need for a shift in the current multi-sectoral approach to a consolidated independent government entity that is committed and accountable to planning, programming and organizing across sectors at national, regional and local levels. By consolidated independent government entity, it is to mean that to establish an autonomous federal government office where its powers and duties are vested by proclamation and having its own legal personality.

Impact of establishing an independent government entity

We could not find a systematic review dealing with the impact of an independent organization for this policy option. However, country experiences (success stories) from different countries especially from Peru (Levinson et al, 2013) showed this approach has an impact in improving the nutritional status of their nation.

Peru, under the Prime Minister's leadership (supra-sectoral), implemented the strategy at national, regional and district levels and involved various sectors including health, education, water and sanitation, housing, agriculture, and nongovernmental partners. Through this organizational structure, Peru has led to an impressive four percentage point reduction per year in stunting i.e., more than halved stunting among children under-five from 28 percent in 2008 to 13.1 percent in 2016 (World Bank, 2018).

There is also local experience of having consolidated independent government organization with successful multi-sector coordination in the fight against HIV/AIDS through Federal HIV/AIDS prevention and control Office (FHAPCO). Lessons from this coordinating organization can be used as a benchmark for this option.

Current practice in Ethiopia

The Government of Ethiopia has demonstrated policy commitment to nutrition by developing a National Nutrition Strategy (NNS), a five-year National Nutrition Programs (NNP I & II) and also the recent National Food and Nutrition Policy in 2018. Moreover, the government of Ethiopia has established an implementation platform; the National Nutrition Coordination Body (NNCB) and National Nutrition Technical Committee (NNTC), through which nutrition interventions are mainstreamed into sectors, integrated and coordinated to bring about the desired changes. Nevertheless, current Ethiopia's approach to multi-sectoral collaboration is lacking many aspects of these attributes according to the scorecard assessment of the multi-sectoral implementation of National Nutrition Program II (NNP-II) (FMoH, 2017).

Applicability, Equity, Economic consideration and M&E for Option Three

Applicability: Country experiences and the policy environment of our country including the National Food and Nutrition policy, which calls for an establishment of an independent organizing body with structures going down from national to local levels, are all in favor of the proposed approach.

Equity: The option proposed above will address mainly, children age 0-2 years, pregnant, lactating mother, and adolescent mothers who are the most vulnerable groups without any discrimination in all parts of the country.

Economic Consideration: We could not find evidence on the cost-effectiveness of this option, however, as stunting usually results from many factors, there are potential synergies between many actions carried out by multiple actors across sectors and that the combined effects of such interventions are often not merely additive, but multiplicative (Allen et al, 2014). Programs goals should be prioritized with consideration to the level of a country's development. There should be a well-designed and careful evaluation of program effectiveness and assessment of cost-effectiveness.

Monitoring and Evaluation: To ensure the effectiveness of this strategy, a system of monitoring and evaluation is essential. Adequate supervision and performance monitoring are also required. Through a systematic program of operational research, the effectiveness of various elements of the strategy may be continuously improved, thereby directing resources

appropriately. It is important that decisions about the continuation, expansion, or elimination of programs over time should also be based on sound analysis of monitoring, evaluation, and cost-related information.

Implementation considerations

Nutrition-specific and sensitive interventions together with an independent entity coordinating different multi-sectors are the three potential options to address the problem of stunting and to meet the global and local commitments. Strategies for implementing the options should take advantage of factors that enable their implementation as well as addressing barriers.

Enablers of improving the nutritional interventions in Ethiopia include:

- ✚ The recent National Food and Nutrition Policy
- ✚ Various Global and National Initiatives (SDGs, GTPII, HSTP, NNS, NNP I & II, SUN, “Seqota Declaration”, NIPN)
- ✚ The Development of Sector-specific policy, Strategic Plans & Programs (Nutrition-sensitive Agriculture Strategic Plan, Reproductive Health Strategy, Nutrition Strategy for Child Survival, Protective Safety Net Program IV, National School Feeding Program, National Social Protection Policy)
- ✚ The presence of Health Extension Programs with more than 40000 HEWs and Agriculture extension program
- ✚ Development army (Women Development Army and Health Development Army)
- ✚ Improved school access
- ✚ Willingness and acceptance of religious leaders by the community
- ✚ Presence of farmers training center (FTC) at lower level.
- ✚ Strong political commitment at the National level
- ✚ Improvements in public health infrastructure in both rural and urban areas
- ✚ A number of global and local partners and civil society organizations working on nutrition
- ✚ Major funding opportunities, initiatives and strong public-private partnership at a national and global level

Barriers and Implementation Strategies are indicated in tables 1 and 2

Table 1: Barriers and implementation strategies for options one and two

Barriers	Descriptions	Implementation strategies
Complexity by its Nature	Complexity in coordinating different sectors (stakeholder), setting key indicators and evaluating its impact in stunting reduction (FMoH, 2018).	An independent government entity committed to its overall operations
Owning responsibilities and accountabilities	The absence of a working platform that gives specific responsibilities & accountabilities to an implementing sector	Establish systems that clearly assigns responsibility and accountability to responsible sectors
Lack of budget allocation	Due to lack of prioritization for nutrition-sensitive activities; sectors may be reluctant to allocate budget	Regulatory imposition on sectors implementing nutrition sensitive interventions to establish budgetary line and to request accordingly
Sustainability	Sustainability might be affected by changing structures and strategies of the sectors	Incorporate clear nutrition-related targets and indicators in the working documents of concerned sectors.
Cultural and Social belief	Cultural and social beliefs may affect acceptance of agreed upon and standardized nutritional interventions	<ul style="list-style-type: none"> • Design community oriented and culturally acceptable intervention approaches • Community Engagement and awareness creation
Lack of Rigorous Monitoring and evaluation (M&E) systems	Many sectors lack well established M & E tools and systems specific to nutrition interventions that can measure progress and impact (FMoH, 2018)	<ul style="list-style-type: none"> • Develop nationally standardized M & E tools with Key indicators for each sector • Conduct impact assessment for each and combinations of nutrition-specific & sensitive interventions
Technical Capacity	Knowledge and skill gap may exist across the various sector to execute nutrition-related interventions	Capacity building of implementing sectors through training, mainstreaming, mentorship, experience sharing, best practice, and other methods
Lack of awareness at the community/household level	There might be food and nutrition-related knowledge gaps within the community	Nationwide advocacy and awareness creation platforms

Table 2: Barriers and implementation strategies for Option three

Barriers	Descriptions	Implementation strategies
Absence of working document (guidelines)	There are no manuals or guidelines in place to implement the option	Develop working guidelines
Budget constraints	Additional costs would be incurred in improving the management, monitoring and evaluation, training and capacity building and program-relevant research	Pool all the existing nutrition-related funds from all sectors and form government budgetary line
Sustainability	The issue of sustainability may come into existence due to resource constraints and dynamic government structures and systems	<ul style="list-style-type: none"> • Ensuring ownership at all level • decentralization of the approach to the lowest institutional structures • forge government entity by proclamation
Conflict of interests among stakeholders	Different stakeholders may have overlapping duties and responsibilities resulting in a conflict of interest in allocating and managing resources	<ul style="list-style-type: none"> • Direction should be given from the prime minister office • Collocation of resources • indicate clear mandates and roles stated in the proclamation
Weak monitoring and evaluation(M&E)	Since the option is new the existing M & E system may affect the approach.	Develop/adopt strong and rigorous M&E systems with validated indicators
Motivation to change	Sticking to the existing approach may affect the adoption and implementation of an independent government entity approach to tackle the problem	Undertake nationwide advocacy and awareness creation
Human Resource Capacity/tech capacity	The Human resource of the entity may face knowledge and skill gap since they are from various sectors with different professional and organizational backgrounds	Continuous capacity building efforts to close the gap

Next Step

The aim of this evidence brief is to foster dialogue and judgements that are informed by the best available evidence. The intention is not to advocate specific options or close off the discussion. Further actions will follow from the deliberations that the evidence brief is intended to inform.

These might include, for example:

- Careful consideration of the need for nutrition-specific intervention
- Careful consideration of the need for nutrition-sensitive intervention
- Careful consideration of the need for consolidated independent government entity coordinating multi-sector efforts
- Monitoring and evaluation of the suggested policy options and implementation strategies
- Consideration of appropriate implementation strategies for each of the three options

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Annexes

Annex 1. How this policy brief was prepared

The methods used to prepare this evidence brief are described in detail elsewhere.^{vi,vii,viii}

The problem that the evidence brief addresses was clarified iteratively through discussion among the authors, review of relevant documents and research. Research describing the size and causes of the problem was identified by reviewing government documents, routinely collected data, searching PubMed and Google Scholar, through contact with key informants, and by reviewing the reference lists of relevant documents that were retrieved.

Strategies used to identify potential options to address the problem included considering interventions described in systematic reviews and other relevant documents, considering ways in which other jurisdictions have addressed the problem, consulting key informants and brainstorming.

We searched electronic databases of systematic reviews, including the Cochrane Library (CENTRAL, Cochrane Database of Systematic Reviews), Support Summaries, PDQ Evidence, Health Systems Evidence and supplemented these searches by checking the reference lists of relevant policy documents and with focused searches using PubMed, Google Scholar, and personal contacts to identify systematic reviews for specific topics. The final selection of reviews for inclusion was based on a consensus of the authors.

Potential barriers to implement the policy options were identified by brainstorming using a detailed checklist of potential barriers (SURE guide for identifying and addressing barriers) to implementing health policies. Implementation strategies that address identified barriers were identified by brainstorming and reviewing relevant documents.

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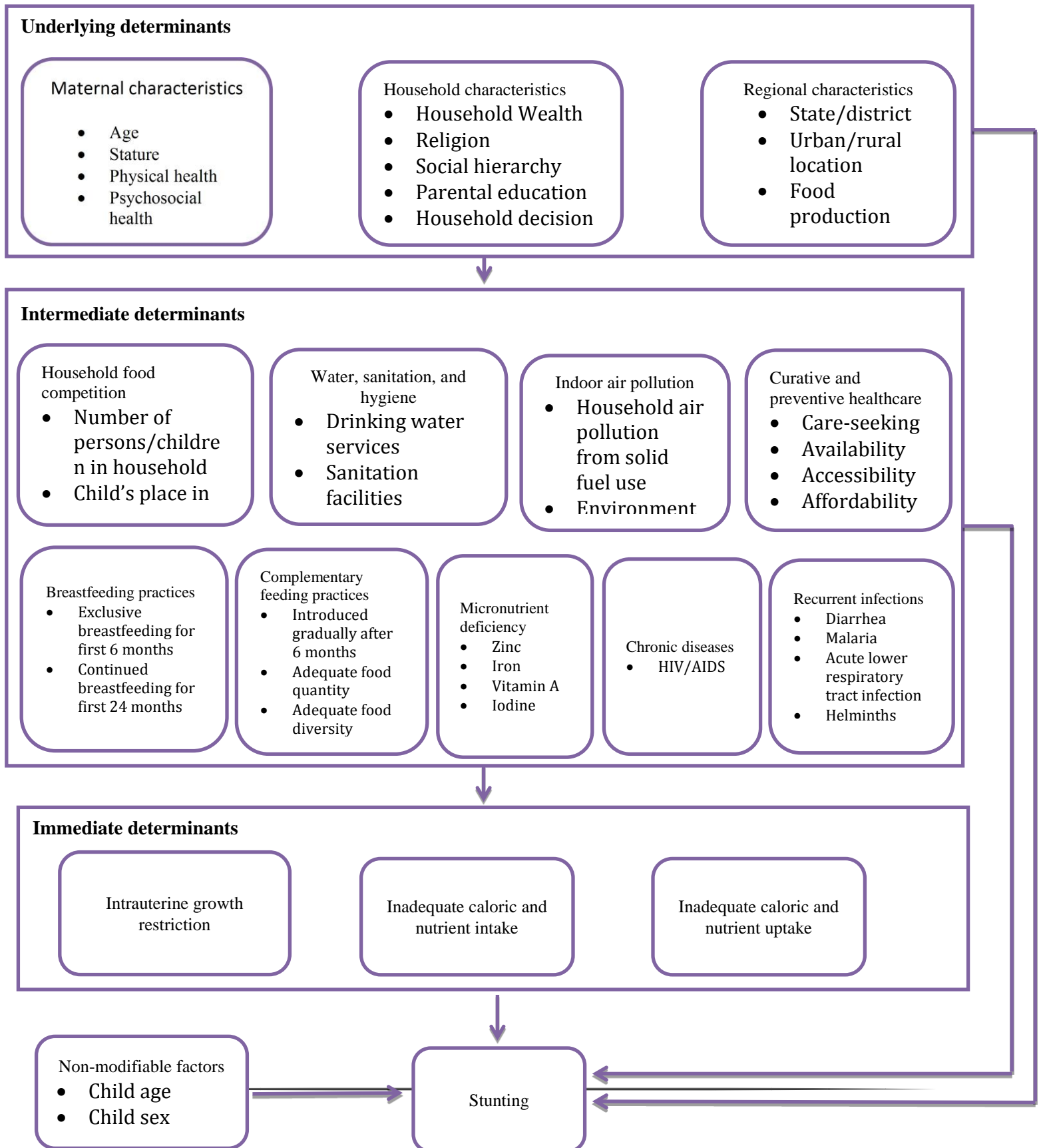
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^{vi} Supporting the Use of Research Evidence (SURE) in African Health Systems. SURE guides for preparing and using policy briefs: 4. Clarifying the problem. www.evipnet.org/sure

^{vii} Supporting the Use of Research Evidence (SURE) in African Health Systems. SURE guides for preparing and using policy briefs: 5. deciding on and describing options to address the problem. www.evipnet.org/sure

^{viii} Supporting the Use of Research Evidence (SURE) in African Health Systems. SURE guides for preparing and using policy briefs: 6. Identifying and addressing barriers to implementing the options. www.evipnet.org/sure

Annex 2: Conceptual framework of multiple determinants of child stunting (Fenske et.al 2013)



Annex 3: Nutrition-specific interventions in Ethiopia and its status, 2019

Type of Nutrition-specific interventions	National coverage	Data Source	Means of Verification/ M& E	Remark
Management of Severe Acute Malnutrition (SAM)	Not clear	EPHI PHEM	Means of verification not well known	
Management of Moderate Acute Malnutrition (MAM)	Not clear	NDRMC	Means of verification not well known	
Periconceptual Folic Acid Supplementation	**	FMoH	Means of verification not well known	Only Pilot projects in 6 districts
Vitamin A Administration In Children Aged 6-59 Months	45 percent	EDHS 2016	Proportion of children 6-59 months who received vitamin A Supplements.	
Maternal Balanced Energy Protein Supplementation	**	FMoH	Means of verification not well known	Not yet started
*Multiple Micronutrient Supplementation In Pregnancy	**	FMoH	Means of verification not well known	Not yet started
Maternal Calcium Supplementation	**	FMoH	Means of verification not well known	Not yet started
Preventive Zinc Supplementation In Children Aged 6-59 Months	**	FMoH	Means of verification not well known	Only therapeutic being given in Ethiopia
Optimum breastfeeding				
Early Initiation of Breastfeeding	73 percent	EDHS 2016	Proportion of children begun breastfeeding within one hour of birth	
Exclusive Breastfeeding	58 percent	EDHS 2016	Proportion of Children under age of 6 months who are exclusively breastfed	
Continued Breastfeeding	76 percent	EDHS 2016	Proportion of children who continued breastfeeding until the age of 2 years	
Appropriate complementary feeding	7 percent	EDHS 2016	Proportion of children fed according to the minimum acceptable diet standards (MAD)	

**Multiple micronutrient supplementations is not recommended for pregnant women to improve maternal and perinatal outcomes (WHO)*

***National coverage is unknown (Indicating those interventions that are not yet started nationally or are just pilot projects)*

Annex 4: Nutrition-sensitive intervention in Ethiopia and its status, 2019

Nutrition-sensitive intervention areas	Nutrition-sensitive Approaches	Type of Measure	Indicators	Ethiopian Status	Remark	
<i>Agriculture and Food Security</i>	✚ Improved availability, access and use of locally available foods	○ Diet at individual level	Minimum Acceptable Diet for young children (MAD age 6-23 months)	7 %	(EDHS 2016)	
			Minimum Dietary Diversity (MDD)-Women of Reproductive Age	**	6.7% (SURE project in selected woredas)	
	✚ Improved use of locally available foods for infants (improved food access and dietary diversification)	○ Food Access at household level	Food Insecurity Experience Scale (Severity of food insecurity experience within a household)		**	Household Food Insecurity Access Scale (SURE)
						Food Secure =56.8%
						Food Insecure
						Mild=9.6%
						Moderate=19.4%
	Severe=14.4%					
	○ On-farm availability, diversity, and safety of Foods	Production of Target Nutrient-rich Food			**	Agricultural production per household (SURE) Staples= 92.9% Pulse (legumes) = 46.9% Fats and Oil crops = 33.8% Root crops/tubers/vegetables 49.4% Perennial
						Diversity of crops and livestock produced
Months of adequate HH food Provision (Bilinsky and Swindale, 2010)						**

		○ Food environment in market	Availability and Prices of targeted nutrient-rich foods in local markets (<i>Compendium of indicators for nutrition-sensitive agriculture</i> FAO page 28)	**	crops/fruits= 18.2% Animal source foods= 62.6% None produced= 4.6%	
Schooling (Education)	<ul style="list-style-type: none"> ✚ Increased access to primary and secondary education for girls ✚ Early childhood stimulation and education ✚ Provision of healthy foods in schools ✚ Nutrition education in school 	○ Net enrolment rate	Percentage of school-age girls in a school catchment who are enrolled in school	**	Gross attendance ratio of girls at 1 ^o school– 91% GAR of girls at 2 ^o school– 27% 1 ^o school NAR for girls age 7-14 - 72% 2 ^o school NAR - 18% (EDHS 2016)	
		○ Net attendance rate (NAR)	Number of children attending primary or secondary school who are official primary school age			
		○ Food provision	Proportion of schools promoting selected nutrition actions through health and nutrition school clubs	**		
			○ SBCC	Proportion of primary schools with school feeding program	**	Piloted in 68 schools of Addis Ababa
				Proportion of primary schools conducting bi-annual deworming	**	
				Proportion of schools with homestead grown gardening school feeding	**	
		Water, Sanitation and Hygiene (WASH)	Hand washing with soap and improved water and sanitation practices		Percent of HHs with clean and safe drinking water supply	58 %
	Proportion of HHs with hand washing facilities			59.9 %		
	Proportion of schools with water supply			33 %		

Health and Family Planning Services	<ul style="list-style-type: none"> ✚ Adolescent health services that provide access to contraceptives and care ✚ Antenatal care, including HIV testing and deworming ✚ Intermittent preventative treatment and promotion of insecticide-treated bed nets for pregnant women in high-malaria areas ✚ Kangaroo care ✚ Deworming: for children 6 -23 months and school-age children ✚ Prevention and treatment of infectious disease 	CPR among married women 15-49 years	35 %	(EDHS 2016)
		Proportion of women receiving ANC from skilled provider	62 %	
		Proportion of women who took deworming medication during recent pregnancy	6 %	
		Percentage of women (15-49 years) who have been tested for HIV in last 12 months and received results	19.7 %	
		Proportion of children 6-59 months who were given deworming medication	13 %	
Women's Empowerment	<ul style="list-style-type: none"> ✚ Promotion of increased age for marriage and reduced gender discrimination and gender-based violence 	Women's access and control over resources	**	<ul style="list-style-type: none"> - % women (15-49 yrs) own house alone = 16% - % women (15-49 yrs) own land alone = 40% - % of married women who participate in HHs
		Women's Participation in economic activities		
		Women's access to and control over benefit		

		Income, disaggregated by gender, to reflect intra HH income control (<i>Compendium of indicators for nutrition-sensitive agriculture FAO page 32-34</i>)		decisions = 71% - % of married women (15-49 yrs) who decide independently on their cash earnings = 30% - % women (15-49yrs) experienced sexual violence = 10% - % women (15-49yrs) experienced physical violence = 23% (EDHS 2016)
Social Protection and Safety nets (Women and Children)	Social protection and safety nets targeting vulnerable women	Proportion of HHs graduated from PSNP	**	495,995 HHs (PSNP factsheet 2008-2012)
		Number of Primary schools in food insecure woredas with school feeding program	**	1187 (NNP II)
		Proportion of women's self-help groups received grants and credits	**	
Early Childhood Development	<ul style="list-style-type: none"> 🚦 Parenting and life skills for early childhood development 🚦 Early childhood development: responsive care, child to child and school readiness 	Specific indicators not well known	**	
		Specific indicators not well known	**	

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Note: Nutrition-sensitive intervention measures and indicators are not exhaustive.

Glossary, Acronyms, and Abbreviations

ECD	Early Child Development
EDHS	Ethiopian Demographic and Health Survey
EPHI	Ethiopian Public Health Institute
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
FMoH	Federal Ministry of Health
GDP	Gross Domestic Product
GTP	Growth and Transformation Plan
HAZ	Height for Age Z-score
HSTP	Health Sector Transformation Plan
IYCF	Infant and Young Child Feeding
LMIC	Low and Middle Income Countries
MAD	Minimum Acceptable Diet
MAM	Moderate Acute Malnutrition
NDRMC	National Disaster and Risk Management Commission
NNP	National Nutrition Plan
NNS	National Nutrition Strategy
PSNP	Productive Safety Net Program
SAM	Severe Acute Malnutrition
SDG	Sustainable Development Goals
SUN	Scaling Up Nutrition
SURE	Sustainable Undernutrition Reduction in Ethiopia
UNICEF	United Nations' Children Emergency Fund
WASH	Water, Sanitation and Hygiene
WHA	World Health Assembly
WHO	World Health Organization