Report
on
Integration of Nutrition into Agriculture and Health in Ethiopia

Ethiopian Academy of Sciences
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FOREWORD

To attain the highest possible food security and nutritional benefits for the people of Ethiopia, it is essential that agriculture, nutrition, and health (ANH) sciences and their related research activities work together in an integrated manner. However, the national track record of these three entities working together in an integrated manner leaves a lot to be desired. To analyze and document this situation properly, the Ethiopian Academy of Sciences (EAS) has taken the lead role to facilitate a scientific review of the issue with the expectation that strategies for enhancing integration of ANH would emanate from such a study. Consequently, the EAS has been exploring the best opportunities to review and study critically the status of ANH integration in Ethiopia and come up with evidence based recommendations on ways and means of facilitating such integration.

Subsequently, the EAS completed a plan to commission a study on "Integration of Nutrition into Agriculture and Health in Ethiopia". The primary objective of this study was to review and analyze critically the status and integration efforts of nutrition into agriculture and health in Ethiopia and suggest alternative mechanisms for strengthening ANH integration in the country.

In moving forward with this plan, as one of the EAS international partners, the US National Academy of Sciences (USNAS) expressed interest in collaborating with the EAS in implementing the planned study on incorporating nutrition in agriculture and health. Additionally, the recent experiences of the USNAS working with the Uganda National Academy of Sciences (UNAS) and the Nigeria Academy of Science (NAS) on the same topic were considered

especially beneficial. Both the EAS and USNAS have been convinced that the lessons learned from Uganda and Nigeria would be valuable for the Ethiopian study. Furthermore, the green light shown by the USNAS to support the EAS technically and financially to implement the ANH integration study was a positive and encouraging development for moving forward with the study. The parties agreed that the study should be short term and completed within the second half of 2012.

To organize and oversee such a scientific study on integration of ANH, the EAS established a special Planning Committee (PC) composed of the major institutional stakeholders on agriculture, health, and nutrition in addition to representatives of the EAS working groups on agriculture and health. The PC in turn organized and guided the work of a team of four national experts, two each from the agriculture and health sectors, to conduct an in-depth desk study and review the status of ANH sciences integration and recommend ways and means of strengthening this integration along with relevant policy recommendations for Ethiopia.

Subsequently, the team of the four experts produced a draft report titled "A Study on the Integration of Nutrition into Agriculture and Health in Ethiopia". The draft study report was presented by the team to a national workshop and thoroughly discussed in which a wide range of appropriate stakeholders participated. After making recommendations and suggestions for improving the report, the participants endorsed the report with the understanding that the suggested changes would be incorporated. The final version of the report submitted to the EAS which is presented here reflects the consensus position embraced by the participants.

The study concludes with the main recommendation that a National Nutrition Coordination Council (NNCC) be established under the chairmanship of the Prime Minister with the Minister of Health serving as vice chair. Potential members of the NNCC are also suggested in the report. This study emphasizes that agriculture, nutrition, and health are mutually interdependent with evidence based conclusion that there is a fertile ground in Ethiopia that facilitates synergetic linkage of nutrition into agriculture and health.

It is the expectation of the EAS that the recommendations contained in this report will be seriously considered for implementation by the appropriate organs of the Ethiopian Government in the interest of improving the overall nutritional status of Ethiopians.

Dr Brhane Gebrekidan, Chair, Agriculture Working Group, and Board Member, Ethiopian Academy of Sciences

Acknowledgments

The Bill and Melinda Gates Foundation provided the grant for the study addressing the nexus between agriculture, nutrition, and health; the Ethiopian Academy of Sciences (EAS) acknowledges this essential and timely financial support for conducting this study and for the production of this report.

The study on the 'Integration of Nutrition into Agriculture and Health' was guided by a Project Planning Committee drawn from stakeholder organizations. The expert Planning Committee consisted of Professor Yemane Brehan, (from the Health Working Groups of EAS), Dr. Seme Debela, Dr. Brehane G/Kidan, and Dr Taye Bizuneh (all from the Agricultural Working Group of EAS), Mr. Beyene Haile (representing the Federal Ministry of Agriculture-(FMOA), Mr. Mulugeta Teamir (representing the Ethiopian Institute of Agriculture (EIAR) and Mrs. Aregash Samuel (representing Ethiopian Health and Nutrition Research Institute -EHNRI). The EAS would like to thank all for their hard work in the process of guiding this study.

A consulting team made up of senior experts in the field of agriculture and health comprising Dr Solomon Bellete, Dr Senayit Yetneberk (both agriculture experts), Dr Habtamu Fekadu, and Dr Cherinet Abuye (both health experts) undertook the study. The hard work and dedication of the study team is very much appreciated. The study team consulted many experts working in varied organizations engaged in sectors related to the study, including those of the private sector working in food processing units; consultants in fields such as agriculture, health and nutrition; university academics; UN agencies, and Fellows of the Academy. All contributed valuable inputs to the report during the peer review as well as the national stakeholder workshop organized by EAS. This report would have not materialized without their enthusiastic sharing of experience and knowledge; and thanks are due to all.

The Ugandan Academy of Sciences had carried out a similar undertaking earlier; and they willingly shared their experience with EAS; and the US National Academy of Sciences facilitated this process; and that was very much appreciated by EAS.

The nutrition project coordinator Mr. Bayable Kiros, had a challenging duty of coordinating the various experts, who often were busy attending to their many other duties and responsibilities; EAS appreciates all the energy and his dedication that went into making this report a reality.

EAS Secretariat

Contents

Acronyms

ADLI	Agricultural Development Led Industrialization
AgTVET	Agricultural, Technical, Vocational Education and Training
AGP	Agricultural Growth Program
BCC	Behavioral Change and Communication
BPR	Business Process Re-engineering
CAADP	Comprehensive African Agricultural Development Program
CCI	Complementary Community Investment
CSA	Central Statistical Authority
DAs	(Agricultural) Development Agents
DES	Daily Energy Supply
DHS	Demographic and Health Survey
DRMFS	Disaster Risk Management and Food Security
DPPC	Disaster Prevention and Preparedness Commission
EHNRI	Ethiopian Health and Nutrition Research Institute
EARS	Ethiopian Agricultural Research Systems
EAS	Ethiopian Academy of Sciences
EIAR	Ethiopian Institute of Agricultural Research
ENI	Ethiopian Nutrition Institute
ENA	Essential Nutrition Action
ESE	Ethiopian Seed Enterprise
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
FMoA	Federal Ministry of Agriculture
FMoH	Federal Ministry of Health
FTC	Farmers' Training Centers
FSP	Food Security Program
GDP	Gross Domestic Product
GoE	Government of Ethiopia

GTP	
HABP	Household Asset Building Program
HEP	Health Extension Program
HEW	Health Extension Workers
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immuno deficiency Syndrome
HEIs	Higher Education Institutions
HSDP	Health Sector Development Program
HTP	Harmful Traditional Practices
IDA	Iron Deficiency Anaemia
IDD	Iodine Deficiency Disorder
IFPRI	International Food Policy Research Institute
IMMPaC	International Micronutrient Malnutrition Prevention and Control
MeDAC	Ministry of Economic Development and Cooperation
MoFED	Ministry of Finance and Economic Development
MDGs	Millennium Development Goals
MoE	Ministry of Education
MoA	Ministry of Agriculture
MoARD	Ministry of Agriculture and Rural Development
MoH	Ministry of Health
M&E	Monitoring and Evaluation
NGOs	Non-Governmental Organizations
NNC	National Nutrition Coordination
PADET	Peasant Agricultural Development and Extension Training
PASDEP	Plan of Action for Sustainable Development to Eradicate Poverty
PEM	Protein Energy Malnutrition
PMO	Prime Minister's Office
PRSP	Poverty Reduction Strategy Paper
PSNP	Productive Safety Net Program
QPM	Quality Protein Maize

RARIs	Regional Agricultural Research Institutes
REDFS	Rural Economic Development and Food Security (working group)
REACH	Renewed Efforts Against Child Hunger and Undernutrition
SAM	Severe Acute Malnutrition
SSA	Sub-Saharan Africa
SDPRP	Sustainable Development and Poverty Reduction Plan
SUN	Scaling Up Nutrition (movement)
SWOT	Strengths, Weaknesses, Opportunities, Threats
TCP	Technical Cooperation Program
TGR	Total Goiter Rate
TWG	Technical Working Group
UN	United Nations
UNICEF	United Nations Children's Fund
UNSCN	United Nations Standing Committee on Nutrition
USAID	United States Agency for International Development
USD	United States Dollar
VAD	Vitamin A Deficiency
WB	World Bank
WHO	World Health Organization

EXECUTIVE SUMMARY

This study on the integration of nutrition into the agricultural and health sectors in Ethiopia was commissioned by the Ethiopian Academy of Sciences (EAS) with the aim of generating discussions among concerned professionals key stakeholders on the critical issue of the nutritional status of the Ethiopian people. The EAS Working Groups on Agriculture and Health directed the researchers to produce a working document that synthesizes the status of nutrition and agriculture, as well as the status of nutrition and health, and, on the basis of the evidence emerging from these, to make recommendations on the integration of nutrition into the agricultural and health sectors. Highlights of the study are as follows:

i. The document presents analyses of sectoral policies and programs of the agricultural and health sectors in relation to nutrition. In addition, a brief analysis of the nutritional interventions undertaken by the National Nutrition Program and the Health Extension Program are presented in the report. It should be pointed out that the scope of the study is limited and does not treat in detail the large number of activities carried out under the National Nutrition Program and other subsidiary nutrition interventions that are being carried out by the government and the other collaborating partners.

ii. In brief, the adoption of the National Nutrition Strategy (NNS) by the Council of Ministers in 2008 and the subsequent implementation of the National Nutrition Program (NNP) under the Federal Ministry of Health (FMoH) have been landmark steps in addressing nutrition as a national agenda.

iii. The levels of malnutrition of vulnerable groups are found to be alarming. A desk review on the trend of the nutritional status shows that the average rate of stunting was about 44 percent, with regional variations ranging from 27 percent in Gambela Regional State to 52 percent in Amhara Regional State in 2011. With respect to the micro-nutrient deficiencies, the situation of IDD has deteriorated in recent years; in 2005 for instance, the prevalence of goiter in children was greater than 30 percent. Vitamin A is a serious contributor to childhood mortality and morbidity. The bitor rate in under five children was 1.7 percent, which is three times the cut-off point set by WHO. Also, 44 percent of children under five are anaemic in Ethiopia.

iv. The document identifies the possible future options for integration of nutrition into the agricultural and health sectors. The involvement and contributions of other key sectors such as education, water, sanitation,

gender are not discussed in the integration process due to time and resource constraints, although the multi-sectoral dimension of nutrition has been stressed.

v. The need for a permanent home-base for coordination of nutritional interventions is one of the recommendations of this study. FDRE Proclamation No. 691/2010 has empowered the FMoH to coordinate the implementation of the national nutrition strategy. However, there is a need to reconsider the institutional home for nutrition to make it more accessible to wider actors. It is recommended that the Office of the Prime Minister serve as the national flag bearer for nutrition. The mandate for the implementation of the National Nutrition Strategy and the subsequent National Nutrition Program that is currently under implementation could be delegated to the National Nutrition Coordination Council and its officially designated secretariat could be the EHNRI (or another designated body) to shoulder the responsibility of a clearing house for all nutrition related activities under the overall direction of the National Nutrition Coordination Council.

THE INTEGRATION OF NUTRITION INTO AGRICULTURE AND HEALTH IN ETHIOPIA

1. Introduction

1.1 Background to the Study

The significance of nutrition in socio-economic development and wellbeing of peoples at national and global levels has gained international attention in various forums (e.g., UN conventions and declarations; documents of FAO, UNICEF, ACC/SCN, IFPRI, WB). Yet many countries in Sub-Saharan Africa encounter difficulties in ensuring adequate nutrition for their inhabitants. To date, the most visible international concern expressed on nutrition and poverty reduction has been the adoption of the Millennium Development Goals (MDGs) by the UN Summit on Development (1990), which committed member states to achieve the targets by 2015 (See section 2.5 in Box 1). Nutrition is critical for achieving most of the Millennium Development Goals by 2015 (See Box 1 for a summary of the impact of nutrition on achieving the MDGs).

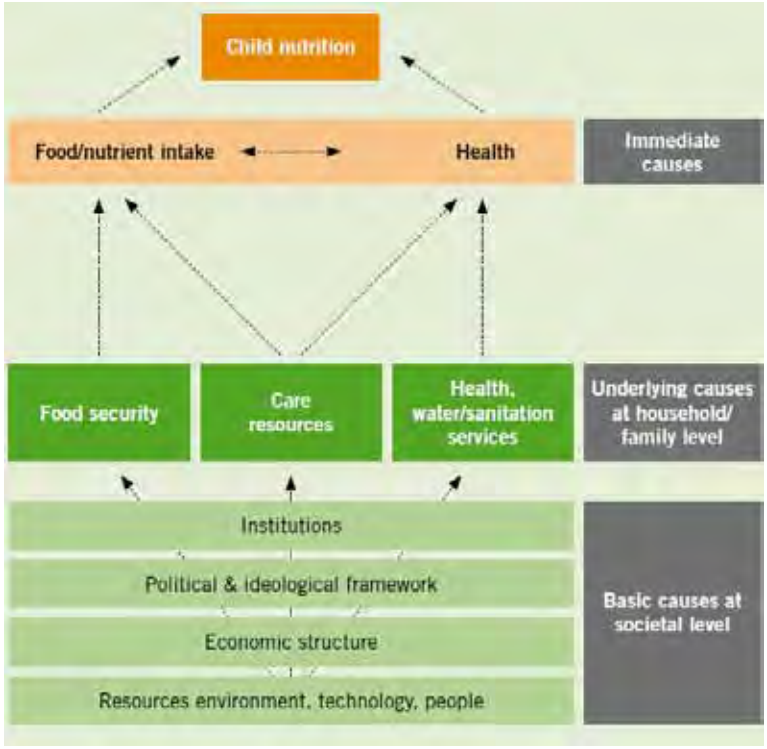
Ethiopia has been plagued with food insecurity, including famine, for centuries and malnutrition is widespread, particularly amongst children and women. The multi-sectoral nature of nutrition contributes to this state and the integration of nutrition programs with health, agriculture, education and poverty reduction programs have been challenging. These entities are interrelated. Agriculture is necessary for economic growth and about 85% of the Ethiopian population depends on agriculture as their main source of livelihood. Good health on the other hand determines work performance of agricultural workers but at the same time is dependent on adequate intake of nutrients (macro and micro) derived from agricultural products. The educational level of households, particularly of women, has been shown to be critical to ensuring adequate nutritional status of the family, particularly of children and pregnant women.

Box 1. Summary of the impact of nutrition on achieving the MDGs

MDG 1: "eradicate extreme poverty and hunger"	Reducing "prevalence of underweight children under five years of age" is an agreed target for MDG 1. Reducing undernutrition increases economic growth.
MDG 2: "achieve universal primary education"	Reducing undernutrition increases cognitive development and contributes to learning and school completion rates.
MDG 3: "promote gender equality"	Promoting better nutrition practices contributes to empowering women and to reducing discrimination against girls in family feeding practices.
MDG 4: "reduce child mortality"	Enormous impact, explained in text, of lower undernutrition on child mortality.
MDG 5: "improve maternal health"	Improved maternal nutrition and reduced maternal mortality through programmes of behaviour change and iron and folic acid supplementation.
MDG 6: "combat HIV/AIDS, malaria and other diseases"	Reduces maternal and child mortality caused by the interaction of undernutrition with HIV/AIDS and other infectious diseases.
MDG 7: "ensure environment sustainability"	Better nutritional practices mean more effective use of available food and so better adaptation to environmental stress (Target 7A), increased health impact from improved access to water and sanitation (Target 7C), and improvement in lives of slum dwellers (Target 7D).
MDG 8: "global partnership for development"	Addressing hunger and malnutrition around the world is a key element of, and argument for, the global partnership for development. This applies particularly for the least developed countries (Target 8B), where levels of undernutrition are highest.

The need to develop appropriate evidence-based strategies to promote better nutritional care was the basis for initiation of the global nutrition conceptual model (modified for Ethiopia) which is presented in Figure 1.

Figure 1. The UNICEF/ IFPRI Framework on interlinked causes of malnutrition



The conceptual framework, especially the underlying causes, show that multiple sectors (health, agriculture and others) need to be involved in any comprehensive actions to address the problems of malnutrition.

The close links and complementarity amongst nutrition, health, education and agriculture in addressing malnutrition offer opportunities and challenges to find solutions to the problems of under-nutrition. Yet in the Ethiopian situation at present, the food security, nutrition, agriculture and health sectors remain poorly synchronized to mitigate the under-nutrition of vulnerable groups. This study was hence commissioned by the Ethiopian Academy of Sciences to examine the existing institutional arrangements of programs to link nutrition, agriculture, and health, and suggest a way forward.

1.2 Scope and Limitations of the Study

Sectors involved in carrying out nutrition-related activities such as education, water resources, energy, women and youth, and civil society are not included in the study although all of them are making contributions for improving the nutritional status of the population. Nutrition interventions and various related activities at the regional and Woreda (district) levels are not covered in the study due to the limited scope of the study. However, it is hoped that the multi-sectoral approach to be adopted as a mechanism of coordination across various sectors that is recommended at the end of the study would bring on board all the relevant stakeholders mentioned above.

1.3 Objectives

The objectives of this study are as follows:

i. To conduct a document review on the current status of nutrition in Ethiopia and to identify the major institutions that are involved in nutrition interventions;

ii. To review the policies, strategies and programs of key sectors closely related to nutritional outcomes in order to identify the main challenges and lessons for integration of nutrition into agriculture and health; and

iii. To suggest options for coordination mechanisms for nutrition interventions and for integrating nutrition into health and agriculture.

2. Methodology

Data were collected by conducting desk review of available documents on nutrition-related national, regional, and global policies, strategies, programs, evaluation results, and research findings. Additional information was collected through interviews with key informants from different sectors. Sectors identified for key informant interviews were: MoH, MoA, and research institutes (EHNRI and EIAR). Integration of nutrition into health and agriculture sectors and multi-sectoral coordination of nutrition were themes of conversation in interviews at different levels.

The review of data documents and the key informant interviews applied Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis to identify achievements, main challenges and lessons learned regarding the integration of nutrition into agriculture and health sectors, and to put forward recommendations to improve the synergies between agriculture, health, and nutrition outcomes (see Table 3 of Annex).

3. Review of Institutional Arrangements and Status of Nutrition in Ethiopia

The section below presents in brief the historical and institutional settings under Ethiopian condition along with brief description of the institutions concerned with the nutritional status at present.

3.1 Historical Background on Institutional Arrangement in Ethiopia

At the global level, the science of nutrition emerged in the early twentieth century with the development of scientific research and enquiry in biochemistry and related sciences. Since World War II, increased depth of research and better capability in the development of scientific instruments created the condition for the measurement of objective indicators and outcomes. The attention of the scientific community as well as the development community, therefore, shifted to broader aspects of child survival as a dominant policy goal. In recent years, more attention has focused on micronutrient studies and other selective health interventions as dominant strategies (Pelletier and Frongillo 2002, 2).

Serious investigation on nutritional work started in the 1960s in Ethiopia with the assistance of United States and Swedish experts. The Ethio-Swedish Pediatric Clinic, later the Ethiopian Nutrition Institute (ENI), was established as a semi-autonomous agency in 1968 under the Ministry of Health to deal with the serious problems of malnutrition and child health. ENI's main activities were focused on training of nutrition professionals and conducting research on nutritional status and consumption patterns among various ethnic and cultural groups in Ethiopia. Since the early years, this institution has been technically supported and nurtured by Swedish bilateral assistance. Various support programs on nutrition were also forthcoming to ENI from UNICEF and WHO in the 1970s and 80s. FAO, through its Technical Cooperation Program (TCP small grant), was involved in the development of nutrition policy in the 1980s under the auspices of the Ministry of Agriculture and the (former) National Committee for Central Planning. Food Science research was initiated at the EIAR Melkasa Research Centre under FAO/UNDP assistance in the 1980s until the applied research task was transferred to the ENI at a later stage.

In 1995, there was a major shift of emphasis and ENI was transformed into Ethiopian Health and Nutrition Research Institute (EHNRI), with a major focus on micronutrients and health-related clinical investigation as its core program. In one of the recent unpublished documents of the World Bank, it is indicated that there was a decline in the prominence given to nutrition in programs and policy debates in the 1990s, accompanying the departure of professionals from the Research Institute and due to a distribution of nutritional responsibilities among

government agencies such as MeDAC, MoA and MoH at the Federal and Regional levels.

3.2 Institutions Concerned with Nutrition in Recent Years

There has been a multiplicity of restructuring of government institutions in the last 10 years, both at the federal and regional levels. The home base institution for the nutrition program was shared between the MoH and MoARD until recently. The Nutrition Surveillance Unit under DPPC/UNICEF, the Welfare Monitoring Surveys of MoFED and CSA; and MoH/Ethiopian Health and Nutrition Research Institute were involved as major sources of information on nutrition until recently.

Among the various attempts towards the development of a national food and nutrition strategy the following could be cited:

a) In the past decades, when the extreme cases of famines occurred due to man-made and natural calamities, the national priority was to address the chronic and transitory food shortages faced by a significant portion of the Ethiopian society. The great Ethiopian famine that occurred in northern Ethiopia in 1984-86 triggered international sympathy and response and, in its wake, a national conference was held on 'Food and Nutrition Strategy for Ethiopia' in December 1986 (ONCCP 1989).

b) The preparations for and the various discussions on the proposed Food Security Strategy resulted in government approval in 1996. Later on, the revised version was approved in March 2002 (MeDAC 2002). The most recent version of the Food Security Program for the period 2010 to 2014 was published in 2009 to be implemented under DRMFS Directorate of the MoA (MoARD 2009).

c) An attempt was made by the FMoH in 2003 to draft a National Nutrition Policy (FMoH 2003) based on the Essential Nutrition Actions (ENA). The underlying causes of malnutrition and priority areas of interventions are presented in the document. The behavior, change and communication (BCC) approach was taken as a basis for defining the objectives, priority actions and strategies for the implementation of the identified actions. It was intended that this document should be considered under the Health Sector Development Program III and by other collaborating sectors.

d) Under the technical guidance of IFPRI, a comprehensive study was conducted in mid-2005 by a group of experts jointly organized by MoH, MoA and UNICEF Ethiopia Office on the major causes of malnutrition in Ethiopia (Benson 2005). The study used the UNICEF framework in elaborating the basic underlying causes of malnutrition using the

"assessment – analysis – action" approach for mitigating the immediate outcomes of malnutrition (attain MDG1, MDG4, MDG5).

e) As a result of the above mentioned study, the FMoH developed a National Nutrition Strategy and got the approval of the Council of Ministers for its implementation in 2008. Proclamation No. 691/2010 also authorized the FMoH to coordinate the implementation of NNS. The FMoH then established a National Nutrition Coordination body composed of State Ministers of key government ministries and heads of agencies to oversee the implementation of the Strategy. The Ministry further took the initiative to locate the secretariat of the Strategy within the Federal Ministry of Health. A National Nutrition Program was initiated on the basis of the Strategy. Since 2008, the implementation of a five-year National Nutrition Program (2009 – 2014) has been carried out in conjunction with the National Health Extension Program.

3.3. Trends on Nutrition over the Last Two Decades in Ethiopia

Ethiopia has shown some progress in reducing malnutrition in recent years. However, it is still a major public health problem and a drawback to its rapid economic development.

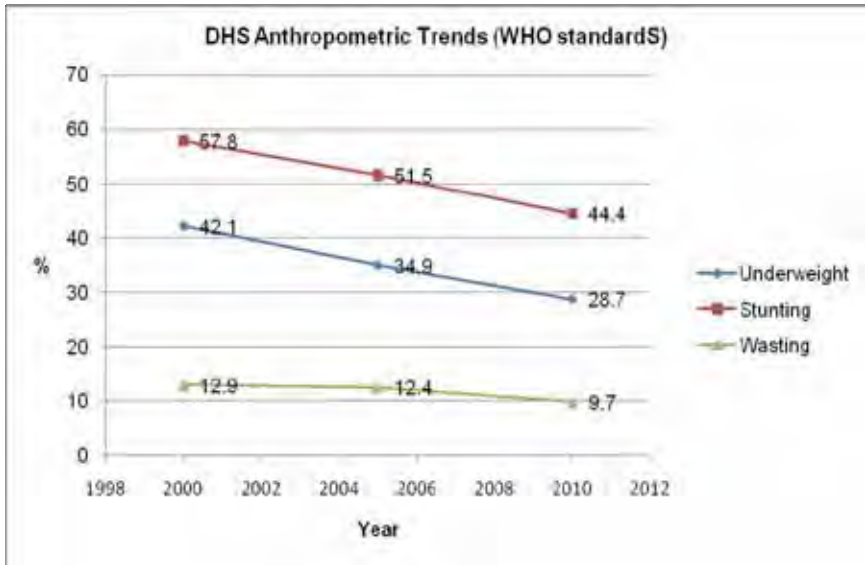
Malnutrition remains to be one of the most pressing health problems in Ethiopia for many centuries. Chronic malnutrition as measured by stunting and underweight, anaemia, and deficiencies of Iodine, zinc and Vitamin A indicate major nutritional problems in Ethiopia. Studies over the years have indicated that the majority of children in Ethiopia show various degrees of growth retardation. The National Nutrition Survey conducted in 1992 depicted that the prevalence of stunting (64%) was the third highest in the world after Bangladesh and Mauritania (CSA 1992).

Recent studies done by CSA every five years since 2000 have shown that malnutrition is still affecting a lot of children aged under five years. The 2011 DHS data indicate that, nationally, 44 percent of children under the age of five are found to be stunted, 33 percent are underweight, and 12 percent are wasted (Figure 2). WHO (1979) considers stunting and underweight prevalence rate of over 40 percent and 30 percent respectively as very high and a major public health problem. This indicates that malnutrition remains a public health problem in Ethiopia.

However, Ethiopia has been making progress towards improved food and nutrition security over the past decade. Consistent and comparable data of DHS since 2000 have shown that malnutrition, as measured by stunting and underweight rate of prevalence, have decreased by more than 10 percentage

points between 2000 and 2010. The decrease has been steady, with both falling by 1.34 percentage points per year over the 10 year period. Wasting, which measures the more immediate effect of malnutrition, seems to have fallen only slightly from around 12 percent in 2000 and 2005, to 9 percent in 2011. However, stunting of children under five years of age is above the Sub-Saharan African (SSA) average prevalence rate of 42%,but still a public health problem and an overarching development concern.

Figure 2: Trends in Nutritional status of Children in Ethiopia

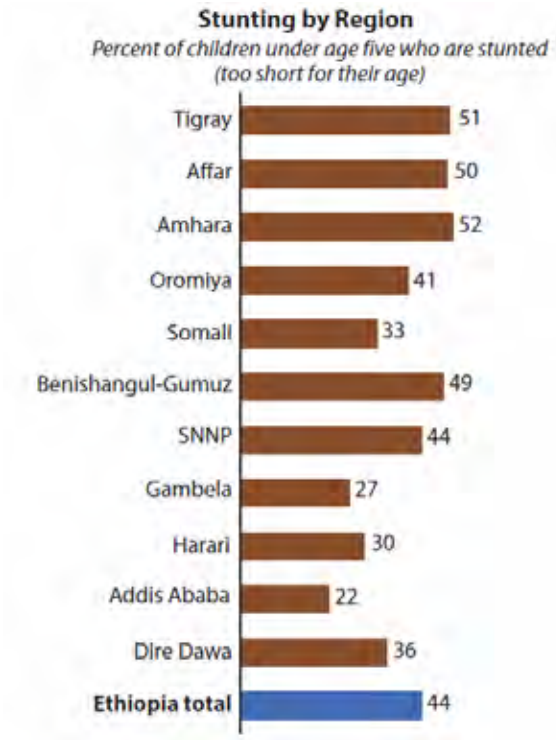


SOURCE: DHS (various years).

In general, the prevalence of malnutrition increases as the age of a child increases, with the highest prevalence in children aged 24-35 months (57 percent for stunting and 34 percent under-weight) and lowest in children under the age of six months (10 percent for both). This shows that most children are affected by several causes of malnutrition in the first three years of life. Male children are slightly more likely to be stunted than female children (46 percent and 43 percent, respectively) reflecting a significant problem of long-term malnutrition. Rural children were nearly one and a half times more likely to be stunted (46 percent) than urban (32 percent) children. More than 1 out of 4 women in Ethiopia is affected by malnutrition and anaemia, a key contributing factor to high maternal and neonatal mortality as well as infant malnutrition.

The regional variation (Figure 3) in the prevalence rate of stunting (DHS 2011) in children is substantial. Children in rural areas are one and a half times more likely to be stunted (46 percent) than those in urban areas (32 percent). Stunting levels are somewhat above the national average in the Amhara (52 percent), Tigray (51 percent), Afar (50 percent), and Benishangul-Gumuz (49 percent) regions and are lowest in Addis Ababa and the Gambela region (22 and 27 percent, respectively). It is interesting to note that adequate food producing regions of the country such as Amhara and Oromia are reported to have high prevalence rate of stunting as compared to less productive regions, thus indicating that while household food security is necessary, it is not the only determining factor for ensuring nutrition security.

Figure 3: Stunting of children under five by region in Ethiopia, 2011



SOURCE: DHS (2011).

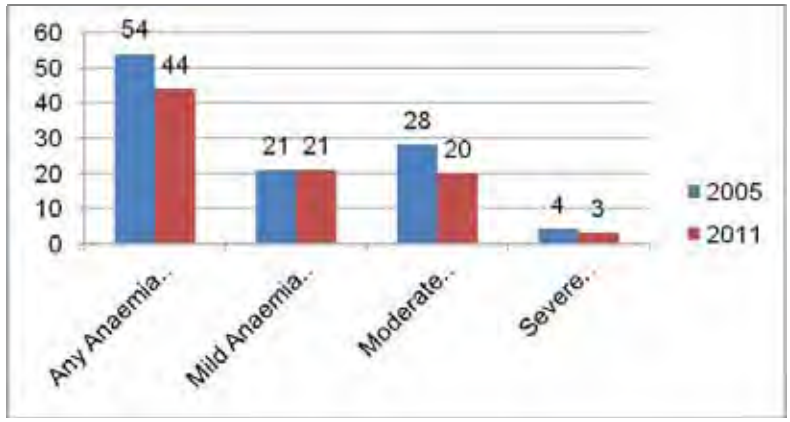
Recent studies conducted on food consumption habits of the population on agro-ecological or regional basis were not available to be included in this review,

although case studies are available for various specific locations and different time periods.

3.4 Trends on Micro-nutrient Malnutrition

In addition to macronutrient malnutrition (stunting, underweight and wasting), micronutrient (vitamin and mineral) deficiencies of iron deficiency anaemia (IDA), vitamin A deficiency (VAD), and iodine deficiency disorders (IDD) are also major nutritional problems of public health in Ethiopia. WHO considers anaemia prevalence over 40 percent in a population to be a major public health problem (WHO 1979).The DHS (2011) report indicates that 44% of children under five in Ethiopia are anaemic. The prevalence rate of anaemia is highest among children aged 9-11 months (73 percent) and decreases steadily with age from 12 to 59 months. Forty-five percent of children (aged 6 - 59 months) in rural areas are found to be anaemic, compared with 35 percent of children in urban areas. Regional variation of anaemia in children ranges from 33 percent in Addis Ababa to 75 percent in Afar Region. Anaemia among children decreases with increases in mother's education and wealth quintile. The national anaemia prevalence estimate in children has dropped by 10 percentage points in the past five years, from 54 percent in 2005 to 44 percent in 2011 (Figure 4).

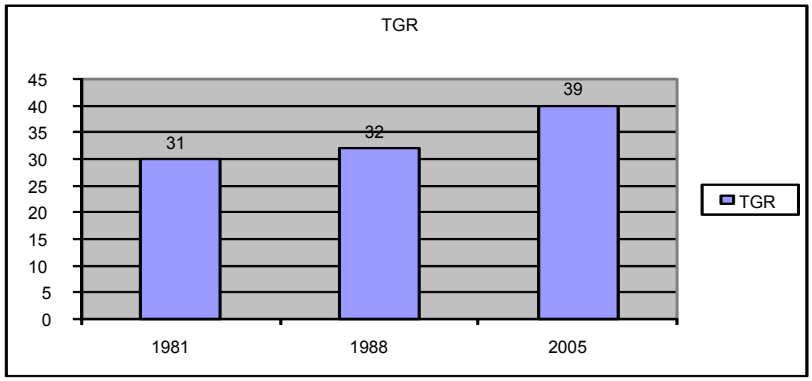
Figure 4. Trends in Anaemia Status among Children Aged 6-59 Months



Vitamin A deficiency is a serious contributor to childhood morbidity and mortality. The most recent and nationally representative survey conducted by EHNRI in 2005 indicated that bitot spot rate in under-five children was 1.7 percent, which was three times the cut-off point set by the WHO as a significant indication of a public health problem.

Iodine is an essential element for normal growth and development in humans. Iodine Deficiency Disorder (IDD) has also been recognized as a public health problem for many decades in Ethiopia. A systematic survey conducted by the former ENI indicated that the total goiter rate (TGR) in schoolchildren and household members was 31 percent and 19 percent, respectively. A recent nationally representative study (EHRNI 2005) that conducted both clinical and biochemical assessment has confirmed that the situation of IDD has deteriorated from TGR of 31 percent in 1981 to 39 percent in 2005 for school age children (Figure 5). In high goiter endemic regions the prevalence of goiter in children was greater than 30 percent while in less endemic regions it was around 15 percent. More than 83 percent of the study population had UIE less than 100 μg/L, which indicates that almost all parts of the country are at risk of iodine deficiency.

Figure 5. IDD status in School Age (6 -12 Yrs) Children in Ethiopia



SOURCE: EHNRI 2005

3.5 Review of the Agricultural Sector and Nutrition

Over the last two decades, the Government of Ethiopia, through its national policies, plans and programs, accorded high priority to the agricultural and rural development sector. Agricultural Development Led Industrialization (ADLI) has been the overarching policy and strategy of the government since the early 1900s and assigned the highest priority to the transformation of agriculture from a subsistence source of livelihood to market-oriented economic sector, so as to enable it to become a driving force for accelerating the country's economic development. This policy has been elaborated through other policy documents such as Rural Development Policy and Strategy (MoA 2003), the Food Security Programme (MeDAC 2003), Sustainable Development and Poverty Reduction

Program (MoFED 2005) and more recently, the Growth and Transformation Plan 2010/11 – 2014/15 (MoFED 2010), that is currently under implementation.

The agricultural sector had shown relatively strong growth from 1991 up until the drought period of 2002/03, when about 14 million inhabitants were faced with severe food shortages. In 2002, the National Food Security Program was launched by MoARD. In order to consolidate the situation a more in-depth study was undertaken in 2003 by MoARD and the bilateral and multi-lateral development partners of Ethiopia to develop and launch the "New Coalition for Food Security in Ethiopia". Its prime objective was to enable five million food (chronically) insecure inhabitants to graduate to food secure status and at the same time to improve the sustainability of the food security of an additional ten million people within a span of five years. It had the additional objective of assisting inhabitants in drought-prone and degraded areas to move on a voluntary basis to areas that are under-utilized and more suitable for agricultural activities as part of an intra-regional resettlement program. The Coalition had targeted to enable up to 440,000 chronically food insecure households to attain food security through improved access to land.

It was during the implementation period of PASDEP (2006 – 2010) that the Food Security Program was launched with further articulation of the Productive Safety Net Program (PSNP), the Household Asset Building Program (HABP) the rural Complementary Community Investment (CCI), and the Resettlement Program, all requiring government budgetary allocation of over two billion Birr (from domestic source) annually. It is estimated that (during the period 2006 to 2011), out of a total of about 8 million chronically food insecure participants in PSNP (receiving 15 kg/person/month for 6 months), roughly one to two million of them have graduated. However, the programs of loan disbursement to participants of HABP and CCI have been discontinued.

The Food Security Strategy of 2002 and the revised 2006 version consisted of three pillars, of which the second pillar of food entitlement contains nutrition interventions for acutely malnourished children and mothers. The Food Security Program (FSP) that is being carried out under the MoA has three main components: the Productive Safety Net Program (PSNP), the Household Asset Building Program (HABP) and the Complementary Community Investment Program (CCI). All of them were designed to provide support in cash and in kind to population living in identified food insecure Woredas. In exchange for the support, the majority of the recipients are being engaged in public work programs such as building access roads, afforestation, and rehabilitation of degraded lands.

In order to boost agricultural productivity and to bring about desirable changes in the agricultural sector, the government has initiated several reform programs. In the areas of research and extension and in particular with regard to technology generation and dissemination, progress has been registered in these areas.

At the Federal level, the Ethiopian Institute of Agricultural Research (EIAR) had been reorganized since 1997 with mandates for generating new varieties of planting materials, improvement and adaptation of technologies in crops, livestock and natural resource conservation, forestry, and socio-economic livelihoods. Currently, the Ethiopian Agricultural Research System (EARS) comprises 55 research centres and sites located in various agro-ecological zones under the overall coordination of EIAR and the regional agricultural research institutes (RARIs). Based on informed sources at EIAR, research strategies are developed for each main commodity under a multi-disciplinary approach. An element of breeding for nutritional improvement is incorporated as in the case of protein-rich maize, high lysine sorghum and orange flesh sweet potatoes and haricot beans with bio-fortified zinc and iron.

The government's agricultural extension program has been reoriented several times over the past years. The extension T&V system was tried in the 1980s through the PADET (Peasant Agricultural Development and Extension Training) approach. Since 1995, the agricultural extension has been oriented towards the promotion of agricultural package as a vehicle for disseminating research-generated technologies along with input supply and credit information. Diffusion of technological packages has shown encouraging results in reliable rainfall areas. However, in moisture-deficit and pastoral areas where serious food insecurity prevailed, solutions have become elusive although water conservation practices of various types are being implemented. In line with the New Extension Program, currently, the Agricultural Technical and Vocational Education and Training, known as Agri-TVET, is a major component of the rural development strategy to improve the skills of producers by investing in the most important and abundant resource, the agricultural labour force. Under this program, farmers training centers (FTCs) are being established at each Peasant Association level (the smallest administrative unit) to provide training to farmers on various agricultural and non-agricultural fields (27 types of subjects have been identified so far).

The public seed enterprise (ESE) and a few private entrepreneurs in the seed multiplication business are involved but very limited success has been registered in satisfying the demand requirements.

The pro-poor public investment in food security over the past years (2004 – 2010) during the implementation of SDPRP and PASDEP, showed increasing

the government's commitment to agricultural development, as indicated by the proportion of budgetary allocation amounting to 12-17 percent of its annual budget. This situation has resulted in agricultural production growth of about 8% to 10% annually over the last several years (Table 2 of the Annex).

The Agricultural Growth Program (AGP) is a collective outcome of the Government of Ethiopia and the donor community, through the REDFS (DAG working group) and CAADP Compact. This special program focused on assisting farmers to increase production and productivity within the shortest possible time. The program is being implemented under the AGP Coordination Unit within the Ministry of Agriculture. Thus, 84 surplus producing Woredas were selected for initial implementation in the four major Regional States, with multi-donor financial assistance (mainly the World Bank and USAID). Improving the nutritional status of the target population is one of its objectives. Although its primary focus is on crop production, a new program is under appraisal to boost the production and productivity of the livestock resource, particularly that of meat and milk.

3.6 Existing Nutrition Governance

3.6.1 Nutrition and Health Sector Policy frameworks and Programs

There has been increased political commitment at the national level towards nutrition in Ethiopia over the past five years as evidenced by the existence of the National Nutrition Strategy, as well as the inclusion of nutrition in various government policy documents. There are numerous strategy documents and programs aimed at improving nutrition in Ethiopia, such as GTP, PASDEP, Agricultural Development Led Industrialization (ADLI), HSDP, National Nutrition Strategy and its five-year program, NNP (See Table 1 of the Annex for a detailed list).

The Plan for Accelerated and Sustained Development to End Poverty (PASDEP, 2005-2010) called for the development and implementation of the NNS and an Action Plan to achieve Millennium Development Goal 1 (MDG1), i.e., halving poverty and hunger by 2015. Following the PASDEP recommendation, the FMoH, in collaboration with relevant ministries and partners, developed a National Nutrition Strategy (NNS) which was launched in February 2008. The NNS brought together the various isolated and uncoordinated interventions into one comprehensive sector-wide approach, led by the government and by one coordination framework. It has attempted to change the pervasive attitude that 'nutrition is everybody's business but nobody's responsibility' and to stop thinking about nutrition as an emergency and food-focused intervention alone. Even though the overall responsibility to coordinate the implementation of the

strategy is given to the FMoH[1], the strategy emphasizes the role of other sectors and the need for a multi-sectoral response to improve nutrition through the establishment of the National Nutrition Coordination Committee.

The FMoH has developed a 'community-based preventive strategy' for the health sector and is currently undertaking large-scale programs such as the Health Sector Development Program (HSDP), the Health Extension Program (HEP), and the National Nutrition Program (NNP), which have direct bearing on the nutritional status of the population.

The HSDP, which is in its fourth five-year term and consists of the current plan of action for the health sector, demonstrates the Government's commitment to achieve the targets set in the MDGs. It comprises specific nutritional targets and nutrition- and health-related interventions. The Health Extension Program (HEP) is an innovative, grassroots community-based health care delivery system aimed at creating a healthy environment and livelihood for local residents. The program has created increased access to essential preventive and curative health services to the people at the grassroots level through the implementation of 16 health packages, including nutrition, at the community level. It has a national coverage of about 15,000 Kebeles (smallest administrative unit) with a health post placed at each Kebele and total staff of over 33,000 Health Extension Workers assisted by numerous community volunteers.

The NNP has a five-year plan of action (2010-2014) for the implementation of the NNS. It has set clear objectives, interventions and systems components that would enable it to implement its activities based on the multi-sectoral coordination mechanisms.

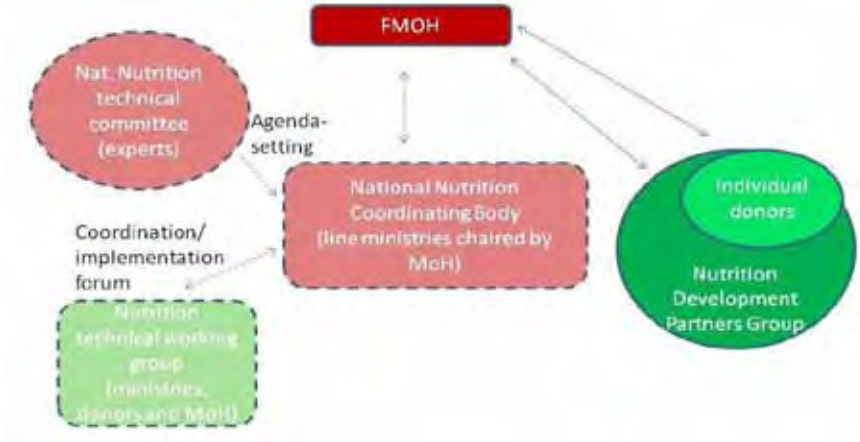
3.6.2 FMoH's Responsibility to Coordinate the NNS

The FMoH is responsible for direct nutrition interventions, especially care, feeding, health services, and water, sanitation and hygiene (WASH) interventions. At the same time, it has an additional responsibility to lead and coordinate the implementation of the nutrition strategy that demands a multi-sectoral approach to nutrition. Thus, it has to work with other sectors, including agriculture, to mainstream nutrition into sectoral policies and programs by establishing a multi-sectoral coordination mechanism as stated in the NNP.

[1]Proclamation No. 691/2010 entitled "definition of powers and duties of the Executive Organs of the FDRE" stipulated under Article 29 sub-Article 5 that the FMoH shall have the powers and duties to follow up and coordinate the implementation of the national nutrition strategy. Under the same Proclamation's Article 19 sub-Article (i), the FMoA has the power and duty to undertake disaster prevention and preparedness activities and ensure the proper implementation of the food security program.

The FMoH, in consultation with other sectors, established a horizontal inter-ministerial coordination committee named National Nutrition Coordination body (NNC) in 2008. Figure 6 shows the existing multi-sectoral coordination mechanism for nutrition. This is the first commendable step undertaken by the government which recognizes that nutrition needs a multi-sectoral approach. However, the NNC has met only a few times and it still has no concrete action plan or accountability to a higher structure of the government. Because of these factors and other priorities, it has been found to be less effective than expected to coordinate and mainstream nutrition among the key sectors, and to be able to mobilize additional resources for nutrition.

Figure 6. Current Setup of Multi-sectoral Coordination Mechanism on Nutrition



In 2009, FMoH, WHO and other partners undertook a landscape analysis to assess the commitment of Ethiopia to tackle malnutrition and to identify opportunities to integrate and scale up nutrition-related actions. The assessment used several parameters to score nutrition governance, such as existence and adoption of national nutrition plan or strategy; existence of inter-sectoral mechanism to address nutrition; integration of national nutrition plan and strategy into national development plan, especially PASDEP; allocation of budget for implementation of national nutrition plan; existence of regular nutrition monitoring; and existence of budget-line for nutrition in health budget. The assessment showed that Ethiopia scored Medium in terms of nutrition governance (UNSCN2009).

Other strengths were noted in the organisation and management of nutrition programs in the country. There is an interagency nutrition partners' group named National Nutrition TWG, coordinated by FMoH. In addition, several taskforces and committees have been created for the purpose of guiding the

implementation of various interventions such as Salt Iodization Technical Steering Committee, National Food Fortification Working Group, etc.
A number of weaknesses which do hamper progress were also noted. Key amongst these are:

- nutrition is not well reflected in the PASDEP, GTP, and ADLI;
- there is lack of functional and accountable multi-sectoral coordination;
- there is limited agro-industrial and private sector participation in addressing malnutrition.

4. Analysis of Existing Policies and Interventions

The PASDEP (2005-2010) was a five-year development plan that served as a policy and strategy guideline for all sectors of the Ethiopian economy. It was the first development plan that recognized the need to develop and implement a national nutrition strategy. However, it didn't have clear set objectives, a concrete action plan, and a strategy to institutionalize nutrition.

The current **Growth and Transformation Plan (GTP)** (2010-2015) is the most recent national development plan of the government of Ethiopia that sets targets for all sectoral programs. The specific objective of the GTP that is relevant to nutrition refers to expanding and ensuring quality of education and health services, and achieving the MDGs. It clearly sets out to ensure the implementation of the nutrition strategy with a target to reduce the prevalence rate of stunting to 37 percent by 2015. The fact that the Plan advocates for a pro-poor economic growth and gives due emphasis to social protection contributes to improved nutrition. However, it doesn't specify how nutrition is to be addressed in the agriculture and other sectors.

4.1 Agriculture, Food Security and Rural Development

The Rural Development Policy and Strategy of the MoA (2003) was one of the main documents which spelt out clearly the government's vision for and components of the agriculture-centered rural development. The policy document is focused on broad areas of agriculture-centered rural development and elaborates in some detail the strategies for enhancing labor-intensive agricultural production systems, improving access to land to farmers and pastoralists, promoting diversification and specialization of production in various agro-ecological zones, rehabilitating natural resources in drought-prone areas, and enhancing productivity in adequate rainfall areas.

Among the areas of strength of the policy document are the importance attached to improving the health of the rural labor force and the urgency in equipping the rural youth with the necessary skills so that they become a driving force in

modernizing Ethiopian agriculture. The document further expounds the opportunities that exist for enhancing food security, which is a major determinant in nutrition security.

Based on the need for adjustments, further strategies and programs have been designed and are being implemented since the launching of the policy document. These include disaster prevention and preparedness through Disaster Risk Management, the Food Security Program, AT-VET Program, Agricultural Research Systems, establishment of Higher Learning Institutions, Agricultural Growth Program, and the Growth and Transformation Plan.

The second phase of the Food Security Program, covering the period 2010 to 2014, has been under implementation since the first phase of the New Coalition for Food Security came to an end in 2009. The Food Security Program has four major components: Productive Safety Net Program (PSNP), the Household Asset Building Programs (HABP), the Complimentary Community Investment (CCI), and improved access to land (through Resettlement). During the first phase, it is reported that safety net transfers have been made to more than 7 million people residing in chronically food insecure areas and over 200,000 households were supported by the Food Security Program to resettle in more fertile areas.

The Program has the goal of achieving "food security for chronic and transitory food insecure households in Ethiopia" by 2014. It also sets the target that 80 percent of households in rural Ethiopia will achieve " access to sufficient food at all times for an active and healthy life in the absence of PSNP transfer" (MoARD 2009). In addition, it sets a target to reduce malnutrition among children under two by 1.5 percentage points annually, on the average, in the chronically food insecure areas of the country where the Program is being implemented.

The PNSP, which is in essence a supplementary employment income support scheme, is handling a target of about 8.3 million food insecure people. In view of the massive number of chronically food insecure households in the selected Woredas, the targeting process was not efficiently handled in the past (DRMFS 2009).

Among the strengths of the FSP is the impressive and generous budgetary allocation both from the government and the donor community. In 2010/11 alone, the Federal Government allocated about two billion Birr while the donor community allocated a grant of USD 356 million to assist about 7 million food insecure people (Demese and Chipeta 2012, 16). The money is sent to the participating Woredas (districts) partially as a block grant to be spent on the

local projects planned by the Woreda administrations, presumably with the participation of the community. Areas of shortcomings have been noted in the implementation of PSNP. These include: (a) delays in making timely payments to beneficiaries; (b) lack of multi-sectoral planning at the Woreda level; (c) lack of clear identification of roles and responsibilities; and (d) lack of coordination mechanism at the lower administrative levels. Despite the complexity of the program, improvements have been noted in many of the activities as new phases of the Food Security Program emerge (the latest phase of the program covers the period 2010 to 2014). Many of the public works in the participating Woredas involved construction of feeder roads, primary schools and clinics; and community works that include small-scale irrigation, potable water points. Although technical deficiencies have been noticed, these are reported to be highly appreciated by the beneficiaries.

Mechanisms are in place for encouraging graduation from the FSP-PSNP despite the beneficiaries' reluctance to graduate. However, the program's administration needs to be improved in order to enhance its efficiency. Originally the program was planned to phase out in five years' time. A document reviewing the FSP has indicated that by the end of 2008, only a total of about 18,538 households graduated (excluding Tigray Regional State) (DRMFS 2009). However, in a recent interview (November 2012) with an expert at DRMFS Directorate, out of the existing 8 million food insecure beneficiaries about two million have graduated and become self-supporting. Thus, there are opportunities for enhancing the effectiveness in program performance through re-training of program staff, provision of incentives for successful management of the program, and launching of innovative schemes in order to achieve the objective of building in the communities the "capability to become resilient to natural and man-made shocks" (DRMSF 2009).

In line with CAADP and other major agricultural projects, the current flagship project in the MoARD is the Agricultural Growth Program (AGP), which is taken up with even more determination to achieve its success. It is a five-year project receiving financial assistance of USD 300 million from the World Bank and USAID (World Bank 2011). It has been mentioned above that it is designed to focus on the more productive areas of high potential in Ethiopia. It addresses the issues of increased production and productivity which will be a quick track for poverty reduction. The agricultural sector of Ethiopia, and in particular smallholder agriculture, is currently being transformed into the commercial domain whereby an increasing segment of the farmers are engaged in production for the market. Depending on the responses to market signals, the prices of agricultural commodities, in particular prices of food products, may increase or decrease at any given time. Currently, following the world market prices, the local markets are experiencing sharp increases in the price of food commodities

(which may be good for farmers but bad for consumers). The production trend over the last ten years is on the increase (see Table 2 of the Annex). The national average available k-calorie per day per person is reported to have increased from 1953 in 1995/96 to 2746 in 2004/05 (MoFED 2008).

The research system has demonstrated its strength in availability of trained manpower and its generous budgetary allocation from the government. It is also establishing international linkages with regional and international research centers to come up with nutrient-dense crop varieties. However, the national agricultural research system's linkages with the extension system and the health system are weak at present. Opportunities exist for collaborative research through the involvement of the newly established RARIs and Agricultural Universities in applied and basic research. The threats faced include the departure of its trained manpower due to lack of proper incentives to retain staff at the various agricultural research centers.

4.2 Analysis of National Nutrition Strategy and Program

In addition to SWOT analysis, the review used following nutrition governance assessment criteria of the WHO:

- Existence of a national health policy, strategy, program and plans;
- Content of the policy (clear nutrition goals and targets with timelines and associated actions);
- Existence and effectiveness of a multi-sectoral coordination system;
- Availability of essential and adequate budget for implementing policies;
- Monitoring and Evaluation system to collect and utilize nutrition data.

National Nutrition Strategy: The NNS (2008) is the first nutrition policy document approved by the government of Ethiopia. The NNS states the nutrition objectives but it has no clear targets with timelines. The strategy identifies nutrition interventions and principles guiding the implementation. It recognizes the importance of establishing a multi-sectoral coordination mechanism and a comprehensive monitoring and evaluation system. It also states that government's large programs will include nutrition objectives and apply the "nutrition lens" in implementation and monitoring. However, it doesn't outline specifically the role of each sector for nutrition. It doesn't specify the financial need to implement the strategy. However, as stated above, the mandate for follow up and implementation of the NNS was given to the FMoH through Proclamation No. 691/2010.

National Nutrition Program: In order to implement the NNS, the NNP was the first nutrition plan of action prepared and approved by the Government of Ethiopia. It sets clear nutrition objectives and targets and organizes the components into two: the first component is service delivery, which mainly focuses on cost effective direct nutrition interventions; the second component focuses on strengthening the nutrition implementation system. It puts in place a multi-sectoral coordination mechanism and stresses the importance of other sectors to address nutrition. It has a budget of USD 365 million. The main weakness of the NNP is that it doesn't clearly articulate the sector-specific nutrition objectives and activities intended for incorporation into many of the other sectors relevant for nutrition.

Health Sector Development Program (HSDP): It recognizes nutrition as one strategic objective and sets specific nutritional targets mainly focused on direct nutrition- specific interventions and/or health-related interventions. It calls for the implementation of the interventions described in the National Nutrition Program. It promotes HMIS, which has very limited nutrition indicators. It doesn't indicate the multi-sectorality of nutrition.

Health Extension Program (HEP): It is the largest program in the health system in Ethiopia with over 33,000 health extension workers deployed nation-wide and providing health services in about 15,000 health posts and about 3,500 health centers in addition to home-to-home visits. The HEP implements 16 health packages (including nutrition) at the community level, using the HEWs and community volunteers. The HEP has created the opportunity for community structure to implement nutrition-specific interventions at the community level.

The Ethiopian Health and Nutrition Research Institute (EHNRI): This was established following the merger of the former National Research Institute of Health (NRIH), the Ethiopian Nutrition Institute (ENI) and the Department of Traditional Medicine under the Ministry of Health.

The primary objective of the EHNRI is to coordinate and conduct research on priority areas of health and nutrition and contribute to the prevention and control of malnutrition and disease. Its main activities are focused on collaborative research on bio-fortification, identifying and disseminating nutritious food crops to end users and provision of laboratory services for food industries.

Major challenges of the Institute are high attrition rate of trained manpower, delay in implementation of operational research, and lack of proper means to disseminate some of the research outputs to end users.

4.3 The Role of the Private Sector in Promoting Improved Nutrition

The role of the private sector in the field of agriculture is wide-ranging and numerous, starting from direct involvement in small-scale agricultural production for the market to large-scale commercial agricultural entrepreneurship or management. The private sector can also be engaged in the delivery of wide-ranging agricultural input and output service delivery, in storage, transport and agro-processing of agricultural products, in the sale of agricultural commodities to local consumers as well as for export.

Depending on the type of food commodities and the location of production, the post-harvest losses are estimated to be in the range of 20 percent to 40 percent. These losses include those that occur in storage, transporting, handling, and processing. The markets for food commodities in Ethiopia are traditional with market transactions being carried out at small primary markets with products transported on human or animal packs. Exchange takes place on the basis of individual transaction/negotiation between buyers (traders) and sellers (small-scale farmers), and the products move to secondary and final (major towns) terminal markets on truck loads. Most markets are faced with high transaction costs (due to lack of market information), no standardization for quality and grading and little legal enforcement for delivery in agreed quantity and quality.

The private sector could bring about significant changes if the market infrastructure is improved and effective regulatory and enforcement systems are put in place through proper organization of the marketing channels. The establishment of the Commodity Exchange System (EXECs) is a great move forward in modernizing the market channels despite its focus on very limited cash crops. The Oromia Wholesale and Retail Grain Trade Center is another innovative market structure that is worthy of emulation. The active involvements of farmers' marketing cooperatives in central trading schemes are the main driving forces in modernizing the market channels and in creating consumer and producer benefits.

It is through the value chain processes that these service providers, including the private sector participants, can be linked to agro-processing industries, the supermarkets and final consumers. These horizontal and vertical integrations in the market channels result in the reduction of the post-harvest losses and the period of shortages created in one area while extending the surpluses in another area. The value chain process could be extended to include dairy and honey products, development and processing of food fortification, and increase in production of nutritious child complementary and weaning foods.

The private sector can also be engaged in providing laboratory services for food analysis; this could motivate the few existing private laboratories to expand their services to neighboring countries.

4.4 Nutrition as a Basis for Multi-Sectoral Coordination in the Health System

Integration of Nutrition into the Health system was reviewed using the critical health system functions, which include governance, financing, planning, service delivery, M&E, and demand generation.

Governance: the MOH has put in place a conducive policy framework for nutrition. The HSDP IV and NNS/NNP recognize nutrition as one of the main health intervention domains and set clear nutrition targets with timelines and identified costs of planned interventions (HSDP IV and NNP). Nutrition is one of the main packages of the HEP. The FMoH tried to coordinate and revitalize the National Nutrition Coordination (NNC) body. However, the NNC has done limited tasks as compared to its terms of reference. It met a few times on an *ad hoc* basis, but made limited efforts to mainstream nutrition into sectoral programs and mobilize resources. There have been no initiatives to create incentives for the sectors to integrate nutrition and advocate improved nutrition at forums of higher decision-making bodies such as the House of Representatives, MoFED and Office of the PM.

Planning: Nutrition is taken as part of the primary activities of the HSDP IV and it is also an important component of Woreda-based plan of the MoH. However, the plan focuses on limited nutritional interventions and is more biased to reportable interventions such as Vitamin A, deworming and its treatment. Maternal nutrition interventions are not planned unless there are active partners with the zonal or Woreda partners (districts).The national planning department of FMoH has not shown serious interest in integrating nutrition into its planning and M&E activities.

Financing: It is a first step to have a budgeted plan of action. It was commendable that the government allocated a budget for the NNP in 2008, which has increased the interest of donors to fund nutrition. The funding has increased from USD 65 million to over 150 million (informal communication from MoH and donors). Domestic resources are being used by the government for the health system, including the HEWs, which are the main structure for implementing the NNP and other direct nutrition interventions. The main weakness identified is the lack of direct budget allocation by the government for nutrition as most of the nutrition funding for implementing the intervention programs comes mainly from donors. This raises questions about the commitment of the government and thus affects the sustainability of nutrition

interventions. In addition, most of the nutrition resources are not part of the pool funding of FMoH, which affects the Ministry's incentive to prioritize nutrition and make it part of the planning and M&E.

Service Delivery: Nutrition has been integrated into the health delivery system mainly through HEP and health facilities. This has been demonstrated, firstly, by the rapid scale up of the coverage of the community-based direct nutrition interventions to about 15,000 Kebeles and more than 500 Woredas during the last decade, and secondly, by the shift from emergency-focused nutrition interventions to those that address chronic malnutrition.

Human Resource: There is relatively good capacity to implement nutrition at the community level because of the HEWs whereas the capacity at the national, regional and district level is limited. Nutrition is integrated into the in-service training, called Integrated Refresher Training for HEWs, which has contributed to improved capacity at the community level.

Monitoring and Evaluation: The NNS states the need for a comprehensive nutrition information system. Only two nutrition indicators are included in the HMIS and reported at the regional and national levels. Key nutrition indicators in the NNP are not part of HMIS and collected regularly. There is an effort by partners and EHNRI to establish a nutrition information system that is aligned with the government information system. More nutrition indicators are identified and being discussed for integration into HMIS.

4.5 Nutrition Policy Governance

The existence of the NNC, through the adoption of NNS, has created awareness and recognition that nutrition needs a multi-sectoral response in Ethiopia. It has also opened an opportunity for a policy and programatic dialogue to integrate nutrition into different sectors, including agriculture.

Despite the aforementioned strengths, the NNC has been ineffective in coordinating the sectoral responses for nutrition. It has limited power to establish nutrition as a priority development program and to influence the sectors to integrate nutrition into their sectoral programs. This is mainly due to the fact that it is an *ad hoc* committee with no budgetary allocation, no defined annual target and work plan, and no clear accountability to higher institutions above the sectors such as the Office of the Prime Minister. In addition, it couldn't provide incentives for the coordination through resource allocation or measurable nutrition outcomes to which the sectors are committed. The NNC body lacks legal power and legitimacy for its existence through the issuance of a proclamation or regulation by a higher authority and the demand of a budget-line to generate resources for implementation of nutrition activities.

Currently, there are good opportunities to make the NNC an effective multi-sectoral coordination mechanism. There has been an increasing interest of development partners to fund the country's efforts for establishing a viable multi-sectoral coordination for nutrition. There are also global and regional initiatives such as CAADP, SUN and REACH that promote and facilitate multi-sectoral coordination and integration of nutrition into food security and poverty reduction policies and programs at the national level.

5. Options for Integration of Nutrition into Agriculture and Health

The underlying factors could be taken as a starting point for examining the options for the future integration of nutrition into the key sectors. Thus, Food Security, Health Services, Care Practices, and Sanitation and Hygiene represent the tasks assigned to the development sectors, each of them guided by the mandates given to them under national proclamations. But each of them have overlapping mandates with nutrition as an area of commonality for integration and linkages.

For the purpose of this study, we may define integration as a process under which a formal contract is established among interested parties with specific rights and obligations stated in the contractual document, which is time-bound, location-specific and committed resource indicated.

On the other hand, linkage refers to the process of collaboration in the common interest; it is more informal and optional in the participation in the activities that are collectively envisaged.

5.1 Integration of Nutrition into Agriculture and Food Security

In the policy and strategy documents of the GoE, particularly PASDEP and the GTP, increasing production and productivity has been the overarching objective of the agricultural sector. Thus, in a country where high prevalence of malnutrition is also associated with high incidence of poverty, agriculture is probably the only viable sector to deal with the twin challenges of malnutrition and poverty.

Nutrition should be integrated into agriculture using the potential entry points in the existing agriculture mandated policies, programs, researches, and pre-service (training) institutions taking into consideration their strengths and opportunities. The review has identified the following potential nutrition entry points. Actions that need to be taken to integrate nutrition during the entry processes are also suggested.

Agricultural Policies/Strategies: All of the guide notes make the point that nutrition objectives are needed to drive agricultural programs in a manner that would better address nutrition. It should be accompanied by appropriate indicators and M&E systems to track desired impact (Herforth2012). This will ensure that the agriculture sector has the incentive to work on nutrition or integrate nutrition into its mandated production or market-focused programs and activities. Globally, there is no consensus on what kind of nutrition objectives and indicators need to be included in agricultural policies and programs. Some studies recommend impact-level indicators such as stunting while others recommend outcome-level indicators such as dietary diversification scores. In Ethiopia, the major agricultural and food security programs have indirect reference to nutrition in the process of attaining their objectives. As stated above (Section 5), all of these programs are already under implementation. It is expected that there would be opportunities during the revision of the policies and strategies to incorporate indirect (measurable) nutrition-sensitive objectives and outcomes. At present, policymakers are more open to listening and taking action when the approach is tied to key policy agendas, such as poverty reduction. Thus, the GTP objectives of reducing stunting should be reflected in the agricultural policies and strategies during the process of revision. This objective also needs to be reflected in the result framework of the agriculture sector as part of the contribution to the nutrition target set in the GTP. In addition, the multi-sectoral coordination body has to make sure that new programs or projects in the agriculture sector incorporate appropriate nutrition objectives and indicators.

Advocacy efforts are critical to bring attention to cross-sectoral problems such as nutrition. For this, there is a need to have 'champions' for nutrition within the sectors or at a higher level. It is high time to identify influential 'champions' either from high level decision-makers of Agriculture or parliamentary standing committees to advocate for nutrition within the MoA.

The MoA has no institutional arrangement to address nutrition especially in the extension program. This will be a barrier for the ministry to take the leadership in integrating nutrition into its programs. The FMoA and partners should work together to create a senior position for nutrition and/or use the existing Women Affairs Directorate, which is under the direct supervision of the Minister of Agriculture, to lead the 'nutritionalization'[2] of agriculture and work closely with FMoH on the multi-sectoral linkages. It is not sufficient to have a leadership

[2] The term 'nutritionalization' is adopted here from a document produced by the Ugandan National Academy of Sciences entitled "Mainstreaming Nutrition with Agriculture in Uganda: Workshop Report" (August 2010). The term was developed "to capture the concept of incorporating nutrition outcomes into the design and planning of agricultural policies, programs and systems… and to look at bidirectional linkages between agriculture and health". Similar ideas are envisaged in our use of the term here.

capacity at the federal level; there should be a systematic capacity building at the regional and district levels regarding nutrition to have critical human resource to manage nutrition-related programs and address malnutrition at all levels within the sector.

The FMoA has no resource to take the additional responsibility of addressing malnutrition. There is a fear (perception) that all nutrition resources are going to the MoH. At the initial stage, donors should allocate resources for nutrition-sensitive activities of the agricultural sector. In the long run, the FMoA should include nutrition in its sectoral plan, focusing on its mandated task of improving food quality and the 'utilization pillar' of the Food Security Program, and request for government budgetary allocation.

The Report on Food Insecurity (FOA, WFP, IFAD 2012) has underlined the three essential steps in linking agricultural growth (increase in production and productivity) to a reduction in malnutrition as follows:

i. The agricultural/economic growth coverage must be within reach of the very poor, where growth would generate assets controlled by the poor. These assets must include the labour, land, and livestock resources under the command of the household.

ii. The increased income of the household must be used to increase their dietary energy and other nutrients intake.

iii. A large share of the additional public revenue generated by the economic growth must be used towards public sector investments in social protection, nutrition, health, education, human and infrastructural capacity to promote further growth in the agricultural sector.

The effectiveness of the above steps is ensured along with the promotion of good governance, gender equality, and equitable distribution of resources. It is often said that the GoE has comprehensive and well-articulated policies, strategies and interventions, but its great limitations are in the areas of implementation. This situation would require a re-thinking of the approach to be undertaken. The most viable solution appears to be to promote the bottom-up approach where the planning process should start at the local grassroots level, with relevant capacity building to be integrated at a higher regional level and then further extended to the national level. This process may require more effort, patience, time and resources, but it is worthwhile to be effective in the implementation of designed policies and strategies. However, the importance of national leadership, guidance and provision of capacity building from federal level to Woreda and local levels should not be underestimated.

Thus, the linkage of nutrition and agriculture should be started at the Woreda and Kebele levels, with technical support given to professionals from the research institutes (RARIs) and higher learning institutions (HLIs). The following areas could be the starting points for integration of nutrition into agriculture:

i. Nutrition education and training should be part of the agricultural education program. The Agricultural Technical and Vocational Education and Training Colleges (25 ATVETs currently operating all over the country) could be the centers for developing and implementing the nutrition curriculum based on food habit surveys and research results from higher learning institutions. Training and practical application should focus on dietary diversification.

ii. It should be stressed to the agricultural extension experts and workers that the final goal of increased production and productivity is to build the capacity of producers to meet the dietary intake of all members of the household. Thus, the professional extension advisors should be equipped with the 'nutrition lenses' in implementing all their extension programs.

iii. The extension staff at Kebele and Woreda levels should ensure the development of homestead gardening and production of small livestock for home consumption. This could be done especially by motivating the youth to develop their own gardens as a side-line business and for household consumption.

iv. Agricultural colleges and universities should integrate nutrition education and research, and promote the curricula in their pre-service educational programs.

v. The NARS (at federal and regional levels) should pay special attention to the development of nutritionally enhanced agricultural technologies particularly in dealing with staple food crops such as cereals, pulses, oil seeds, root crops, fruits and vegetables. The NARS should adopt the concept of enhanced nutritional value for food commodities in the objectives of their research on technology generation and dissemination of results, focusing on increased density of the dietary supply and utilization.

Additional interventions to be pursued in the 'nutritionalization' of agriculture may include:

- Promote nutrition-sensitive homestead gardening and livestock production,

- promote the crop diversification interventions of food security to include horticulture,
- Reduce post-harvest loss,
- Incorporate nutritional outcomes in agricultural policies and programs,
- Involve private sector agribusinesses in processing of perishable and seasonal foods,
- Build capacity of staff for nutrition-sensitive interventions of the agricultural sectorat all levels.

5.2 Integration of Nutrition into Health Services

It is encouraging that most of the direct nutrition interventions are integrated into the health framework as stipulated in the HSDP IV and in service delivery at different levels. There is also room to improve the full integration of nutrition as well as ensure ownership of nutrition within the Ministry of Health.

After the MoH undertook business process re-engineering (BPR), the directorate responsible for overseeing nutrition has been shifting from the urban to the agrarian directorate and vice versa. This shows that there is no responsible unit or directorate to take the full leadership to oversee and coordinate nutrition at FMoH. Thus, we suggest creating a unit or directorate that takes the leadership in coordination of the nutrition program within the health system as well as act as a secretariat to the National Nutrition Coordination body to foster linkages with other sectors. The experience of Malawi is a good lesson (Malawi National Nutrition Policy and Strategic Plan (NNPSP) (2007-2012). This will also ensure the full integration of nutrition in Woreda-based planning, service delivery, monitoring and evaluation, and logistic in which there are caveats of integration.

The MoH has been proactive to develop both NNS and NNP, integrate nutrition into HSDP IV, and scale up community-based nutrition interventions. It should continue to show its commitment to nutrition by allocating resources and a budget for nutrition. It needs to include key nutrition indicators into the existing HMIS. Development partners need to encourage the full integration into the planning, financing, and monitoring and evaluation of the health system by allocating part of their funding for nutrition into MoHMDGs pool fund.

5.3 Multi-sectoral Coordination

It has been shown by several reviews that for a multi-sectoral coordination mechanism or response for nutrition to work, it should have a legitimate institutional arrangement with an authority mandated by country-level policy/decision-makers. It should be placed in a government institution above

the sectors. It should also have action plans with concrete targets and sufficient resource to carry out its function (Benson 2008).

The NNC needs a revised institutional arrangement, the necessary authority, accountability and resources to execute its mandated task of coordinating the sectors. We are proposing the following actions to strengthen the NNC.

Institutional arrangement*:* The NNC has been ineffective partly because it has no decision-making power to influence the operations of the participating sectors. This can be improved in various ways. The following three options are proposed; it is up to the government to decide on the most feasible one.

Option One: A National Nutrition Coordination Council (NNCC) should be established under the chairmanship of the Prime Minister, and the vice chairmanship of the Minister of Health. Sectors represented in the Council could include Ministries of: Finance and Economic Development; Agriculture; Industry; Trade; Science and Technology; Water and Energy; Education; Women, Children and Youth Affairs; and representatives from the private sector, professional organizations and others. This proposal would avoid sectoral bias in exercising the authority vested on the NNCC. Sectoral members of the NNCC will be held accountable, both institutionally and collectively, for the achievement of the nutrition goals and targets set by the government. Under the Council, a Technical Committee will be created under the auspices of an existing institution such as the EHNRI, which is composed of technically qualified persons from sectors represented in the NNC Council. The structure at the federal level could be cascaded down to the regional and Woreda levels. The legal status of the NNCC should be legislated for it to function effectively. The main features of Option One are shown in Figure 7.

Option Two: The second option (see Figure 8) is to maintain the current NNC set-up. It is proposed that NNC as a body should be directly accountable to the PM's Office. Currently, the secretariat is housed within the FMoH under the directorate of Family Services, while the NNC is chaired by the Minister of State of Health while other members of the NNC are represented by Ministers of States of the relevant ministries and heads of Agencies, with clearly defined duties and responsibilities and nutritional targets to be accomplished within the assigned period of time. The NNC can form technical working groups with a focal person for each participating sector to ensure that nutrition is mainstreamed into the program and projects of the sector. The major challenge under this option will be the independence and impartiality of the secretariat to serve all stakeholders on an equal basis. Problems might be encountered in program design and budgetary resource allocation to expedite the work and to provide incentives for the most innovative and resourceful sector.

Figure 7: Option 1 - NNCC Housed under Office of the PM

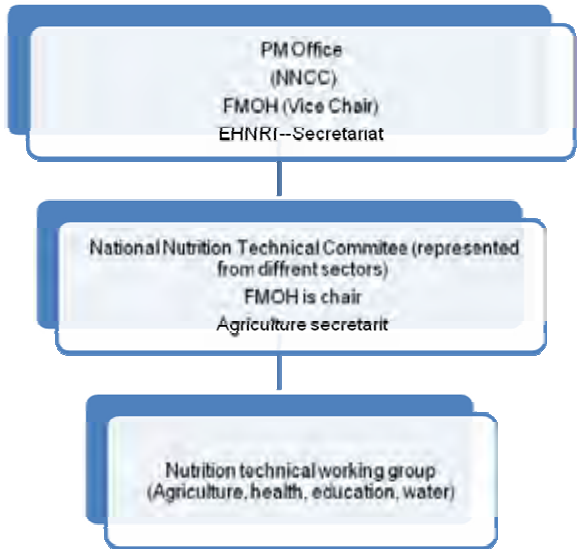
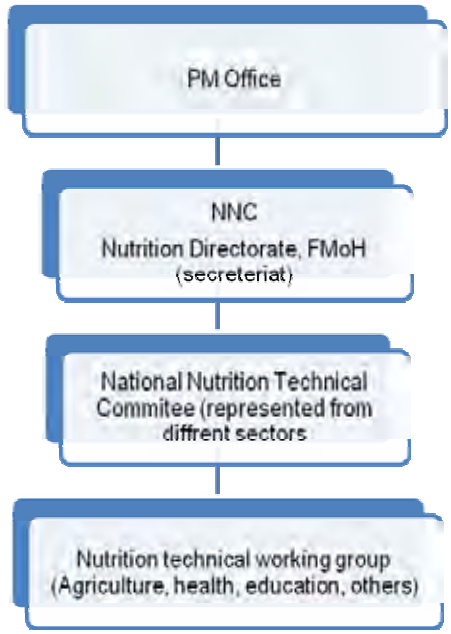


Figure 8: Option 2 - NNC Accountable to MOFED or the PM's Office



6. Conclusion

This study investigated synergetic linkage between nutrition, health and agriculture. Policies, strategies and programs along with institutional arrangements and capacities in Ethiopia were reviewed in relation to nutrition. A summary of the conclusions drawn from the review is presented hereunder:

i. What this study has shown is that nutrition, health and agriculture are mutually interdependent. Hence, there is a fertile ground in Ethiopia that facilitates synergetic linkage of nutrition with health and agriculture.

ii. The review team has witnessed that there is a favorable policy environment, commitment on the part of the leadership, professional enthusiasm at all levels, and willingness to support from development partners. However, the multi-sectoral nutrition programs and interventions lack a strong coordinating body that brings on board all the relevant stakeholders.

iii. The country has a well-organized system for information dissemination at the community level, both in the agriculture (DAs) and health (HEWs) sectors. It seems, the two systems could benefit from greater collaboration, using 'nutrition' as a bridge. The DAs and HEWs play a role in delivering information supportive of several programs in agriculture, health and nutrition at grassroots levels.

iv. International experience concerning integration of nutrition into health and agriculture has shown that implementation is a complex and lengthy process that requires thorough and careful preparations for the negotiations with stakeholders and sectors. The concerted efforts of the professionals, donor agencies and NGOs are crucial for the success of the integration.

7. Recommendations

The report presents the following points of recommendation to relevant stakeholders and development partners for discussion and the necessary action.

i. The adoption of the National Nutrition Strategy in 2008 and the implementation of the Five-Year National Nutrition Program (2010 – 2014) are highly commendable and significant steps taken by the government of FDRE in the cause of fighting the scourge of malnutrition in Ethiopia and achieving the MDGs. In order to realize food and nutrition security at national and household levels, institutionalized coordination through a multi-sectoral approach is the key for integration

of nutrition into health, agriculture and other sectors. Therefore, the government should strengthen the existing coordination mechanism by upgrading the National Nutrition Coordination (NNC) body to a Council status operating under the Office of the Prime Minister and vested with the appropriate executive power and accountability.

ii. The fight against hunger and malnutrition require a high level political commitment and high level 'champions' to work towards positive nutrition outcomes. The serious engagement and perseverance of major actors such as parliamentarians, ministers and civil society leaders in the fight against hunger and malnutrition are essential. There should be standardized and persistent advocacy tools and activities to be made available to these 'champions'.

iii. Malnutrition and food insecurity are still major problems of the country that need multi-sectoral responses wherein the role and contributions of agriculture are critical. Thus, more attention and support should be given to the agricultural sector to enable it to contribute to the enhancement of the nutritional status of vulnerable groups.

iv. Efforts must be exerted to exploit the potentials of the Agricultural Development Agents (DAs) and the Health Extension Workers (HEWs) for the production and utilization of high nutrient products in order to promote dietary diversification among rural households and the youth. Integrated and collaborative activities among these frontline workers are essential for promoting appropriate nutritious diet for households, especially for children, women and other vulnerable groups.

v. The message of alarm about the serious consequences of malnutrition should spread far and wide through the media, advocacy activities, and other appropriate means to agricultural policy makers, program managers, EARS, cooperatives, and DAs. In addition, the MoH and MoA should use their communication departments to devise appropriate messages and push hard for BCC (behavioral changes through communication).

vi. MoA offices at all levels should promote the use of Farmer Training Centers (FTCs) and schools to transfer the skills for production of nutritious fruits and vegetables, poultry and dairy products and encourage increased consumption of these foods by households.

vii. The Ethiopian Agricultural Research Systems (EARS) should continue to work on the generation and dissemination of bio-fortified food crops or technologies in order to enrich the micronutrient content of the staple crops.

viii. FMoA should establish a Unit to streamline nutrition within the major activities and programs at the federal and regional levels. The MoH should create a nutrition directorate to handle its nutrition program, coordinate the relevant sectors, and act as a temporary home of the secretariat for the NNC body.

ix. FMoE, in collaboration with FMoH and FMoA, should design nutrition curricula and/or incorporate nutrition sciences into the course content of universities with agricultural and health Faculties or Colleges and TVETs, and other HEIs established at the regional centers in order to promote nutrition science education and research, and produce qualified manpower for expanded nutrition interventions in the country.

x. Existing policies and strategies should be revised to confirm to the nutritional goals and targets set by the government. Nutritional targets and indicators must be incorporated in the design and plan of the programs of the sectors and the necessary M&E must be put in place for follow up. Also, capacity building should receive priority in all of the key sectors, particularly in agriculture, health, education, water, to bring about significant reduction in the malnutrition of children and women.

xi. Continuous source of funding is essential for achieving desired nutrition outcomes in health and agriculture. The government should create a budget line for nutrition instead of depending on partners' financial support to strengthen nutrition in a sustainable manner. The government (together with development partners) should also allocate some of the nutrition funding to the MDG pool to strengthen the MoH's nutrition interventions. The nutrition resource allocation should consider agriculture and other sectors at federal and regional levels in order to promote their nutrition-sensitive programs and outcomes.

References

Benson, T. 2005.A study on the major causes of malnutrition. Addis Ababa: IFPRI.

_____. 2008. Improving nutrition as a development priority: Addressing under nutrition in national policy processes in Sub-Saharan Africa. Research Report 156.Washington, D.C.:IFPRI.

CSA. 1992. *National nutrition survey*. Addis Ababa: Central Statistical Authority.

CSA. 2012. *Agricultural sample surveys*. Reports on area and production of major crops Meher season. Vol. 1 (2005/06 to 2011/12). Addis Ababa:CSA.

Demese Chanyalew and Mefa E. Chipeta. 2012. First annual review of agricultural Policy Investment Framework (PIF) implementation. Final Report, MoARD, Addis Ababa.

DRMFS. 2009. Review of Food Security Programme (FSP). Unpublished.

FAO/WFP. 2002. Crop and food supply assessment, 1996/97 to 2001/02.

FAO, WFP, IFAD. 2012. The state of food insecurity in the world: Growth is a necessary but not sufficient to accelerate reduction of hunger and malnutrition. FAO, Rome.

FMoH. 2003. National Nutrition Policy – Ethiopia. Draft proposal for discussion, November 14-15.

Herforth, Anna. 2012. Synthesis of guiding principles on agriculture programming for nutrition. Draft consultancy report. FAO, Rome.

Malawi. National Nutrition Policy and Strategic Plan (NNPSP), 2007-2012.

MeDAC. 2002. *The food security strategy*. Addis Ababa: Ministry of Economic Development and Cooperation.

_____. 2003. *Food security programme*. Addis Ababa: Ministry of Economic Development and Cooperation.

MoA. 2003. *Rural development policy and strategy*. Addis Ababa: Ministry of Agriculture.

MoARD. 2009. *Food security programme* (2010–2014). Addis Ababa: Ministry of Agriculture and Rural Development.

MoFED. 2010. *Growth and transformation plan* (2010/11–2014/15). Addis Ababa: Ministry of Finance and Economic Development.

_____. 2008. Dynamics of growth and poverty in Ethiopia (1995/96 – 2004/05). Addis Ababa: Development Planning and Research Department, MoFED.

ONCCP. 1989. Towards food and nutrition strategy for Ethiopia. In *Proceeding of the national workshop on food strategy for Ethiopia*. Alemaya: Alemaya University of Agriculture.

Pelletier, D.L., and Ed A. Frongillo. 2002. Changes in child survival are strongly associated with changes in malnutrition in developing countries. Washington, D.C.: FANTA Academy for Educational Development.

UNICEF. 1990. *Policy review: Strategy for improved nutrition of children*. New York: UNICEF.

UNSCN. 2009. *SCN News*. No. 37.

WHO. 1979. *The health aspect of food and nutrition: Manual for developing countries*. 3rd Ed. Geneva:WHO.

World Bank. 2011. Appraisal of the agricultural growth programme. Washington, D.C.

ANNEXES

Table 1. Nutrition-related policies, strategies and programs

Nutrition Specific Strategies		
Policy	***Body***	***Date***
National Nutrition Strategy	Federal Ministry of Health	2008
National Nutrition Program	Federal Ministry of Health	2008 (being updated)
National Strategy for IYCF	Federal Ministry of Health	2007
Management of SAM	Federal Ministry of Health	2007
Management of MAM	Federal Ministry of Health	2011
Micronutrient Guideline	Federal Ministry of Health	2006
Nutritional support for PLWHA	Federal Ministry of Health	2011
Nutrition Sensitive Strategies		
Agriculture and Food Security		
Agriculture Growth Program	Federal Ministry of Agriculture	2010
Pastoral Area Development	Ministry of Federal Affairs	
Food Security Strategy	Federal Ministry of Agriculture	2007
Poverty Reduction and Development Programs		
Agricultural Development Led Industrialization (ADLI)	Federal Government/ MoFED	1995
Growth and Transformation Plan	Federal Government/ MoFED	2010
Plan for Accelerated and Sustained Development to End Poverty (PASDEP)	Federal Government/ MoFED	2007
Growth and Transformation Plan	Federal Government/ MoFED	2010-2014
UN Development Assistance Framework for Ethiopia (UNDAF)	United Nations System in Ethiopia	2012-2015
Public Health Programs		
WASH Strategy	Federal Ministry of Water	2011-2016

	and Energy	
Health Sector Development Plan	Federal Ministry of Health	2010
Health Extension Program	Federal Ministry of Health	2005
Reproductive Health Strategy	Federal Ministry of Health	2011
National Strategy for Child Survival	Federal Ministry of Health	2005
Education		
School Health Nutrition Strategy	Federal Ministry of Education	2012
Social Protection Programs		
National Social Protection Policy (tabled)	Ministry of Labour and Social Affairs	2012

Nutrition Relevant Laws	
Law	***Date***
Maternity Protection Law (90 days)	
Implementation Code of the Marketing of BMS: final decision level	2012
Salt Iodization Regulation	2011
Status of flour fortification in wheat: planning	
Status of oil fortification planning	

Table 2. Ethiopia: Cereals and pulses production, 1996/97 to 2011/12 Meher (Main) Season

Meher Season	Cereals		Pulses		Cereals and Pulses	
Year	Area	Production	Area	Production	Area	Production
	000 Ha	000 Tons	000 Ha	000 Tons	000 Ha	000 Tons
1996/97	9,442.5	10,842.5	1,477.0	996.9	10,919.4	11,839.1
1997/98	9,484.4	8,104.5	1,525.7	705.8	11,010.1	8,806.3
1998/99	9,807.0	10,398.6	1,488.4	995.5	11,295.3	11,394.1
1999/00	9,290.0	10,706.1	1,504.9	1,039.0	10,794.9	11,745.1
2000/01	9,813.9	11,780.6	1,504.7	1,018.6	11,318.6	12,799.2
2001/02	9,796.0	11,306.4	1,525.7	1,027.7	11,321.7	12,334.0
2005/06	8,081.4	11,624.3	1,292.2	1,271.2	9,373.6	12,895.5
2007/08	8,730.0	13,717.0	1,517.7	1,782.7	10,247.7	15,499.7
2008/09	8,770.1	14,496.4	1,585.2	1,964.6	10,355.3	16,461.0
2010/11	9,690.7	17,761.3	1,357.5	1,953.2	11,048.2	19,714.5
2011/12	9,588.9	18,810.0	1,616.8	2,316.2	11,205.7	21,126.2

SOURCE: CSA, Agricultural Sample Surveys: Reports on Area and Production of Major Crops, Meher season. Vol. 1 (from 2005/06 to 2011/12); FAO/WFP Crop and food supply assessment (from 1996/97 to 2001/02) Feb. 2002.

Table 3. SWOT Analytical framework considered in the study

No.	Strength	Weakness	Opportunity	Threats
1	Budget allocated for nutrition	Absence of budget line for nutrition	Existence of nutrition policies or strategies or programs	Absence of nutrition policies or programs
2	Monitoring and evaluation framework • Existence of M&E indicators	Absence of monitoring system	Institutional arrangements; HEW, DA's, women army,	Absence of nutrition unit or department
3	Explained role and responsibilities of sectors	Role and responsibilities of sectors not indicated	Private sector involvement	Limited or lack of private sector involvement
4	Existence of multi-sectoral nutrition coordination mechanism	Non-functional or absence of nutrition coordination body	Ownership of the nutrition program	Lack of ownership of nutrition program
5	Nutrition objective with activities or content	Absence of nutrition objectives and content		
6	Adequate human resource for nutrition	Lack of or inadequate human resource		

SWOT Analysis of the Ethiopian Health and Nutrition Institute (EHNRI)

The Ethiopian Health and Nutrition Research Institute (EHNRI) was established following the merger of the former National Research Institute of Health (NRIH), the Ethiopian Nutrition Institute (ENI) and the Department of Traditional Medicine under the Ministry of Health.

Before this unification, ENI was a semi-autonomous institute, shouldering most of the nutrition-related activities such as food and nutrition research, nutrition interventions and food product development in the country. As a result of this merger, it was squeezed to the level of directorate or department and mandated to conduct only research related to food and nutrition. This has created a gap in translating nutrition research findings into nutrition programs or interventions.

The primary objective of the EHNRI is to coordinate and conduct research on priority areas of health and nutrition problems and contribute to the national effort to prevent and control malnutrition and disease.

The five-year strategic plan of EHNRI has four strategic themes, referred to as pillars. One of these pillars is food science and nutrition research. As clearly indicated in the strategic plan, EHNRI is conducting operational research that is meant to generate evidence or nutrition policy briefs for the effective implementation of the national nutrition program. Although not adequate, a budget for operations research is allocated by the Ethiopian government. Besides, local and international donors are willing to collaborate and provide funds for conducting operational research. In addition to funding, the Institute engages in soliciting funds through bilateral agreement for health and nutrition research.

Most of the research is conducted in collaboration with local and international organizations. Locally, it collaborates with the Ministry of Agriculture in the field of bio-fortification, orange flesh sweet potato and QPM research. This collaboration also includes universities in nutrition research, the private sector in food product development, and NGOs in relief food quality control. However, most of these are not planned, but need-based collaborations.

EHNRI has also established M&E system for nutrition research programs with defined indicators and targets in its five-year strategic plan.

As the technical arm of the FMoH, EHNRI is a member of NNP coordination committee. The coordination committee is expected to have regular meetings and give guidance. But in reality, not more than three meeting have taken place since the commencement of NNP. The operations research done by EHNRI is

also likely to be guided by and linked to NNP, for program modifications and decision. However, the contribution of NNP coordination body in linking the output of research to NNP activities is not significant.

SWOT Analysis of EHNRI

Items/ (Strength)	Weakness	Opportunity	Threat
Budget allocation for research	Government budget is not adequate for research	NNP and strategic plan in place	High staff attrition rate
Nutrition projects monitoring and evaluation system is in place	Most of the research collaboration are not planned	Donors interested in supporting operations research	Non-sustainability of sources of funding
Nutrition and food science trained and skilled manpower available	High attrition rate	Mushrooming of universities in the country with opportunity for hiring	
Research collaboration with other organizations		Regional agricultural research systems and universities could collaborate	

SWOT Analysis of Ethiopian Agricultural Research System (EARS)

Agricultural Technology Generation

The main objective of agricultural research is generating technologies to ensure food security, enhance income generation, and promote foreign exchange earnings through sustainable natural resources management. In previous years, plant breeders tend to develop cereals which maximize calories to address food security, not essential nutrients. A sustainable solution for micronutrient deficiencies lies in food-based approaches for which agriculture play a key role.

Strength

The agricultural research system has adequate budget allocated for technology generation and a manpower development scheme. The system has strong linkages with the international and regional research centers. The monitoring and evaluation framework for agricultural technology generation operates through research coordination, periodic reporting and variety evaluation and release mechanisms. The attempt made in generating a few nutrient-rich commodities is commendable.

Weakness

As a member of the research team the food science research division evaluates the utilization aspects of crop varieties before release. However, there is no adequate laboratory facility and budget line for nutritional assessment of crop varieties. The poor linkages with agricultural extension may contribute to low efficiency of technology dissemination to users. The absence of linkages between nutrition and health sectors is also a major drawback. As a result, there is no coordinated research agenda with EHNRI except the collaborative research on quality protein maize (QPM) supported by CIMMIT Ethiopia.

Seed Multiplication

Several technologies are developed by the agricultural research system. However, the Ethiopian Seed Multiplication Enterprise (ESE) gives priority to cereals (maize, wheat, teff and barley), legumes (haricot bean, faba bean, field pea and lentils), and vegetables (onion and pepper) based on yield and market demand without considering nutrition.

Persons Contacted for the Study

No.	Name	Institution	Position	Date
1.	Ato Dilnesaw Zerfu	FHNRI	Team Leader	15 Oct. 2012
2.	Dr Frew Lemma	FMoH	Senior Nutrition Advisor to State Minister and REACH Coordinator	10 Oct. 2012
3.	Ato Samuel Abiyu	FMoA	Director, Plan and Program Directorate	16 Nov. 2012
4.	Dr Dawit Alemu	EIAR	Director, Agricultural Research and Extension Linkage Coordination Office	18 Oct. 2012
5.	Ato Temesgen Walelign	MoFED	Director, Development Planning and Research Directorate	25 Sept. 2012
6.	Ato Beyene Haile	FMoA, DRMFS	Senior Advisor, Food Security	23 Sept. 2012
7.	Ato Abraham S.	RED - FS	Program Officer	12 Oct. 2012