



WORKING PAPER

The Policy Environment for Linking Agriculture and Nutrition in Ethiopia

AgriDiet Working Paper 2

Tassew Woldehanna

*Associate Professor of Economics, Addis Ababa University and Senior
Research Fellow of Ethiopian Development Research Institute*

July 2014



The Policy Environment for Linking Agriculture and Nutrition in Ethiopia

Acronyms

ARV drugs	Antiretroviral drugs
CBN	Community Based Nutrition
CBPWDP	Community Based Participatory Watershed Planning
CCI	Complementary Community Investment Programme
CSA	Central Statistical Agency
DHS	Demographic and Health Survey
EDHS	Ethiopian Demographic and Health Survey
EOS/TSF	The Enhanced Outreach Strategy/Targeted Supplementary Feeding
FDRE	Federal Democratic Republic of Ethiopia
FMOH	Federal Ministry of Health
GDP	Gross Domestic Product
GTP	Growth and Transformation Plan
HABP	Household Asset Building Programme
HEP	Health Extension Program
HICE	Household Income and Consumption Expenditure Survey
HSDP	Health Sector Programme
IFHP	Integrated Family Health Programme (IFHP)
MARP	Mostly At Risk Population
MoARD	Ministry of Agriculture and Rural Development
MoFED	Ministry of Finance and Economic Development
NNP	National Nutrition Programme
NNS	National Nutrition Strategy
OI	Opportunistic Infection
PASDEP	Program for Accelerated and Sustainable Development to End Poverty
PIF	Policy and Investment Framework
PLHIV	People Living with HIV
PSNP	Productive Safety Net Program
PW	Public Work
SPM	Strategic Plan and Management
WHO	World Health Organisation
WMS	Welfare Monitoring Survey

Table of Contents

Acronyms	ii
1. Introduction.....	1
2. Agricultural Growth Trends.....	2
3. Food Security Trends	5
3.1 Trends in national level consumption and calorie intake.....	5
3.2 Trends in food poverty	8
3.3 The food gap	9
4. Nutritional Outcome Trends	9
5. Current Policies and Programs.....	12
5.1 Agriculture Sector Policy and Investment Framework (PIF) 2010-2020	12
5.2 Growth and Transformation Plan.....	13
5.3 Food Security Programme	14
5.4 HIV/AIDS National Policy	15
5.6 Health Sector Development Programme	17
5.7 National Health Extension Programme	18
5.8 Nutrition policy and strategy	19
6. Discussion and conclusion.....	24
References	26

1. Introduction

Ethiopia is a Sub-Saharan country, located in the horn of Africa. The total area of the country is around 1.1 million square kilometres, with great geographical diversity and topographical variation, ranging in altitude from as high as 4,550 meters above sea level to as low as 110 meters below sea level. According to the Central Statistical Agency of Ethiopia (CSA, 2013, p.28) the total population of Ethiopia in 2013 was approximately 88 million and this is expected to rise to 137 million by 2037 under the medium-variant projection. Eight-three per cent of the total population of the country is found in rural areas.

Ethiopia is predominantly an agrarian society, and agriculture plays an important role as the primary source of food and essential nutrients as well as an important source of income, especially for the poorer sections of the population. Agriculture contributed about 44 per cent of the total GDP in 2010/11 (MoFED, 2013b), and is the dominant source of employment in the rural areas and in the country. However, the limitation of production-focused agricultural programs and interventions in feeding the country's population and delivering improved nutrition impacts has been observed for decades.

As in many other developing countries, there is a pressing need to address the problem of nutrition in Ethiopia, particularly amongst women and children. The Ethiopian government has recently put in place integrated health, agriculture, education and poverty reduction policies and strategies in order to improve nutritional status, which in turn is an essential requirement for health, production and reproductive population in the country.

Malnutrition, including micronutrient deficiency, has long been recognized as the main public health problem in Ethiopia. Poor diets are a basic cause of malnutrition that can lead to permanent limitations in mental and physical development of children. Women suffering from malnutrition have a higher chance of delivering low birth-weight babies, who in their turn have a higher chance to grow up into a malnourished individual, leading to an intergenerational transfer of poverty.

The aim of this paper is to critically assess the extent to which agricultural and related policies and strategies in Ethiopia address nutritional goals. The paper discusses the current food security and nutritional status in the country, relevant national-level policies and strategies, and the extent to which policies and institutional arrangements support an integrated approach to linking agriculture and nutrition. The paper draws conclusions on the extent of such linkages and makes recommendations on how they may be strengthened.

2. Agricultural Growth Trends

The overall economy of the country registered an impressive growth rate of over 11 per cent per annum over the years 2004-2012. While agriculture was the major source of growth in this period (growing by 9.6% per annum on average), it was complemented by the growth of the industrial sector (11.1%) and strong performance in the service sector (12.7%); trade and tourism, banking and insurance, real estate, education and health account for most of the service sector. Small and medium enterprise development was also enhanced during this period (MOFED, 2012). As a result the per capita GDP (in nominal USD) grew from \$129 in 2000 to \$387 in 2010 and to \$513 in 2011/12. When the per capita GDP is measured in real local currency, the real GDP grew from Birr 1,009 in 2000 to Birr 5,718 in 2011.

With 83 per cent of the population living in rural areas and depending mainly on agriculture for livelihoods, there is no doubting the importance of the agricultural sector for better nutritional outcomes, sustainable development and poverty reduction. Agriculture contributed about 44 per cent of overall GDP in 2010/11. Growth in the agricultural sector has provided underlying growth to the overall economy, improved food security and reduced poverty in recent years. .

The recent growth in the agriculture sector is a response to the government of Ethiopia's Agriculture Development Led Industrialization (ADLI) strategy that has been implemented since 1994, notably through the Sustainable Development and Poverty Reduction Program-SDPRP (2002/03-2004/05), the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), which ran from 2005/06 to 2009/10, and the Growth and Transformation Plan (GTP) due to run from 2010/11 to 2014/15 (MOFED, 2011).

Since 2003, Ethiopian agriculture has witnessed the most rapid growth in its history, with the overall agriculture value-added increasing at the rate of 11 per cent per annum over the ten year period ending in 2010 (MoFED, 2010). Within the sector, progress has been registered on crop production and productivity; diversification of agricultural production; the establishment of agricultural marketing systems, research and extension services; supply of agricultural inputs such as fertilizer and improved seed utilization; expansion of small and medium scale irrigation schemes and management and utilization of natural resources.

Crop production in 2011/12 and trends

The volume of crop production is central to food availability, and production data is provided by the CSA every year. The Crop Production Survey indicates that in 2011/12 a total land area of about 12.3 million hectares was planted with grain crops (i.e. cereals, pulses and oilseeds), from which a total volume of about 22.9 million tonnes of grains (just under 200 million quintals) were produced. Table 1 shows total cultivated cropland area and estimated output for 2011/12. Of the 12.7 million hectares of land, just over 9.8 million hectares (80% of the total) are accounted for by cereals, chiefly teff (2.8 million hectares), maize (2.2 million), sorghum (1.7 million), wheat (1.6 million) and barley (1.1 million hectares).

Pulses, which are protein rich, during the same period occupied about 1.7 million hectares of land (13% of the total cultivated area), from which about 22.8 million quintals is estimated to have been produced in the 2011/12 main harvest.

Oilseeds (rich in plant-fats) were grown on a land area estimated at 852,000 hectares (7% of the total cultivated area) from which about 7.4 million quintals of total production were produced in the 2011/12 *Meher* harvest season.

Table 1: Area under Crop and Estimated Production of Grains Crops for Private Holdings, 2011/12, in the main harvest Season

Crop Type	Area under crop in hectares	%	Production in quintals	%
Cereals	9,808,958	80	198,953,002	87
Pulses	1,609,053	13	22,747,021	10
Oilseeds	852,460	7	7,370,529	3
Total Grains	12, 270,472	100	229,070,554	100

Source: CSA (2012)

The contribution of root crops for human consumption is summarized in table 2. The majority of the population in South and South-western Ethiopia depends on root crops for its daily food consumption during surplus or poor harvest years.

According to the 2011/12 survey results, root crops (i.e. potatoes, sweet potatoes, taro and enset) grown in 2012/13 covered a total of 462,065 hectares of land, from which a total volume of about 20.1 million quintals was produced from private peasant holdings. Out of this total cultivated cropland area, 317,000 hectares of land and 7.5 million quintals production in the main season is accounted for by the enset crop (69% of the total area under root crops and 37% of the total production). The second largest root crop is potato, in both area coverage and volume of production.

Table 2: Area and Production of Root Crops for Private Holdings, in 2011/12 main season

Crop Type	In Hectares	%	In Quintals.	%
Enset	316,873	69	7,459,120	37
Potatoes	73,684	16	6,230,355	31
Sweet Potatoes	35,606	8	3,340,631	17
Taro (Godere)	35,902	8	3,071,561	15
Total Root Crops	462,065	100	20,101,667	100

Source: CSA (2012)

All main crop categories have shown significant and sustained growth over time. Both the land area and volume of production of grain crops in 2011/12 have shown significant increments over the previous four consecutive years' post-harvest estimates (table 3). Year-on-year increases in the estimated grain crop area ranged from 1.5% to 9.4% over the period, while post-harvest estimates of production ranged between 27% and 53%, indicating substantial rises in productivity. For instance, the 2012/13 average yield of teff showed increments of 11%, 10.4%, 7.4% and 5.8% over the 2008/09, 2009/10, 2010/11 and 2011/12 yield estimates, respectively. The growth in productivity of maize over the four years ranged from 0.73% to 35% per annum, while sorghum showed gains ranging from 2.4% to 23% year-on-year.

Table 3: Trends in productivity in crop production

Crop Types	estimated crop productivity (quintal/hectare)					change in productivity (%)			
	2008/09	2009/10	2010/11	2011/12	2012/13	2008/09	2009/10	2010/11	2011/12
Teff	12.20	12.28	12.62	12.81	13.55	11.08	10.36	7.39	5.79
Barley	15.54	15.50	16.28	16.72	17.06	9.78	10.07	4.79	2.04
Wheat	17.46	18.27	18.39	20.29	20.76	18.87	13.60	12.86	2.29
Maize	22.24	21.99	25.40	29.54	29.76	33.80	35.32	17.15	0.73
Sorghum	17.36	18.36	20.87	20.54	21.37	23.12	16.41	2.41	4.05
Faba Beans	12.92	11.93	15.20	15.62	16.09	24.55	34.89	5.87	3.02
Field Peas	11.58	10.41	12.60	12.37	12.54	8.33	20.50	-0.44	1.41
Haricot Beans	12.35	14.87	14.34	11.69	11.49	-6.97	-22.74	-19.88	-1.72
Neug	6.09	6.15	5.85	6.03	6.41	5.30	4.27	9.62	6.35
Linseed	8.63	10.70	8.88	9.68	10.09	16.96	-5.67	13.67	4.27
Groundnut	11.23	11.17	14.44	16.05	13.53	20.45	21.09	-6.33	-15.73
Sesame	7.80	8.25	8.52	7.25	7.30	-6.46	-11.56	-14.37	0.63

Source: CSA (2012)

The overall area of land under cultivation increased marginally, while production increased substantially. For example, grain production in 2010/11 increased by 11% while area of land under cultivation increased by 3%. This implies that the overall yield of all crops combined per hectare increased.

Table 4: Trends in area of land cultivated and volume of production for all crops combined

	Area in hectare	% change in area	Production in quintal	% change in production
1995/96	7,948,530		92,791,190	
1996/97	8,072,330	1.5	96,452,390	3.8
1997/98	6,849,500	-	73,626,710	-
1998/99	8,016,310	14.6	85,838,420	14.2
1999/00	8,216,700	2.4	88,909,960	3.5
2000/01	9,445,480	13.0	106,159,850	16.2
2001/02	7,813,021	-	99,361,781	-
2003/04	8,669,295	9.9	103,564,132	4.1
2004/05	9,823,960	11.8	119,239,169	13.1
2005/06	10,170,911	3.4	133,821,275	10.9
2006/07	10,582,054	3.9	149,432,014	10.4
2007/08	10,954,722	3.4	161,166,574	7.3
2009/10	11,503,249	4.8	180,758,896	10.8
2010/11	11,822,786	2.7	203,485,288	11.2
2011/12	12,270,472	3.7	229,070,554	11.2

Source: extracted from CSA annual agricultural sample survey results

3. Food Security Trends

Food insecurity can be addressed by some combination of (a) giving food directly to the poor (food transfers), and/or (b) raising incomes and reducing the cost of food purchased through the market by raising productivity throughout the "food system" and (c) increasing production and productivity and direct consumption of own-produced food. Transitory problems of food access, while triggered by drought and other temporary crises, have a number of chronic and structural causes that require structural solutions. Chronic poverty is the major reason why large numbers of households in Ethiopia are especially vulnerable to temporary crises. The solution to chronic poverty and food insecurity is productivity growth. Without productivity growth, incomes and employment cannot rise much over the long run, and redistribution cannot be effective if there is not much to redistribute.

Food security can be measured in terms of total consumption, food expenditure or calorie intake. Indicators of absolute poverty (computed based on cost of need approach or cost subsistence calories requirement and essential non-food items) and food poverty can also be used as indicators of food security. Trends in food security using these measures are discussed in this section.

3.1 Trends in national level consumption and calorie intake

Information on consumption expenditure, food and calorie intake, and absolute food poverty can be obtained from the Ethiopian Household Income and Consumption Expenditure (HICE) surveys conducted every 5 years since 1996 by the Central Statistical Agency (CSA) and the Welfare Monitoring Unit of the Ministry of Finance and Economic Development. .

Table 5 (below) shows the current level of per capita consumption and related data; table 6 provides information on the trends in calorie availability in urban and rural areas since 1995/96; while table 7 shows trends in per adult equivalent consumption expenditure from 1995/96 to 2010/11, all measured in 2010/11 constant prices.

Real per capita consumption averaged 4,626 birr (US\$264¹) in 2010/11 (at 2010/11 constant prices). Food consumption accounted for just 2,151 birr (46.5%), with the remainder, non -food expenditures, averaging 2,475 birr. The average total calories consumed in kilocalories (kcal) per day by an adult person was 2,928, with 2,973 for rural people and 2,706 for urban people, which are all well above the 2,200 kcal per day target required to perform light work.

Between 2004/05 and 2010/11, real per adult equivalent consumption increased by 20 per cent which is higher than the 11 per cent increase recorded in the previous period (1999/00 to 2004/05). In the context of a growing economy like Ethiopia, one should expect food and non-food consumption to grow, with non-food consumption growing more rapidly than food consumption. There is some evidence that this has occurred. Nationally, food consumption, as a

¹ We used an exchange rate of a USD=17.5 Birr.

share of total consumption, has fallen from 60 to 56% between 1995/96 and 2004/05 and to 52% in 2010/11. Consequently, between 2004/05 and 2010/11, non-food expenditure has grown rapidly, by 31% nationally, by 24% in rural areas and by 38% in urban areas. Further, there has been a reported increase in caloric availability over the same period, by 6 per cent in rural areas and 13 per cent in urban areas. The increase in food consumption expenditure (11% between 2004/05 and 2010/11) reverses the negative trend in the previous survey period (between 1999/00 and 2004/05). With regard to non-food expenditure, the result indicates that the increment in real non-food consumption between 1999/2000 and 2004/05 - at 48% - was much higher than in the subsequent period (2004/05-2010/11), which was 31%.

Table 5: Real consumption expenditure and calorie availability (KCAL) in 2010/11 in Birr

	Rural	Urban	Total
Real per capita food consumption expenditure	2,031	2,758	2,151
Real per capita non-food consumption expenditure	2,305	3,327	2,475
Real per capita total consumption expenditure	4,336	6,085	4,626
Share of food in total expenditure	0.531	0.471	0.521
Household size	5.1	3.7	4.8
Adult equivalent household size	4.1	3.1	3.9
Per capita total net calorie consumed	2,400	2,283	2,381
Per adult total net calorie consumed	2,973	2,706	2,928
% change in per adult net calorie between 2004/05 and 2010/11	6.0	13.4	6.6

Source: HICE survey 2010/11; Number of observation=27830

Table 6: Calories consumed in 1995/96, 1999/2000 and 2004/05

	1995/1996			1999/2000			2004/2005		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Kcal consumed/day per adult	1,938	2,050	1,954	2,723	1,861	2,606	2,806	2,387	2,746
Share of food in total.expend.	0.60	0.56	0.60	0.67	0.53	0.65	0.57	0.50	0.56
Household size	5.1	4.7	5.0	4.9	4.6	4.9	4.9	4.3	4.8
Adult equivalent household size	4.2	3.9	4.2	3.9	3.8	3.9	4.0	3.6	3.9

Source: MoFED (2008)

Table 7: Trends in per adult consumption expenditure from 1995/96 to 2010/11 (measured at 2010/11 constant prices)

Year	Rural			Urban			Total		
	Food	Non food	Total	Food	Non food	Total	Food	Non food	Total
1995/96	2,462	1,494	3,956	3,348	1,995	5,343	2,586	1,564	4,150
1999/00	2,740	1,329	4,069	2,695	2,631	5,326	2,734	1,505	4,239
20004/5	2,455	1,946	4,402	2,765	3,895	6,661	2,499	2,223	4,722
2010/11	2,564	2,412	4,976	3,808	5,368	9,176	2,770	2,902	5,672
% change (04/05 to 10/11)	4.43	23.92	13.04	37.71	37.81	37.77	10.84	30.54	20.11
% change (99/00 to 04/05)	-10.38	46.45	8.18	2.60	48.06	25.05	-8.58	47.68	11.40

Source: HICE survey 1995/95, 1999/00, 2004/05 and 2010/11

The contribution of different food groups to the daily calorie intake of persons in urban and rural areas is similar. Cereals make up the majority of calories for both urban and rural populations, but it is smaller in urban than rural areas (48% in urban, compared to 60% in rural). Potatoes, tubers and stems also have a more significant role in rural diets making up 15% compared to 4% in urban areas. The greater proportion of foods such as potatoes and cereals is expected to be higher in rural areas where the vast majority of the population is engaged in agriculture. We know from table 7 that rural households source about 44% of their food expenditure through consumption of their own production, which likely includes foods like potatoes and cereals. Food groups like injera and other breads, oils and fats, and foods consumed outside of the home,

make up a greater share of gross calories in urban areas with 7.7% (0.9% rural), 10.4% (3.2 % rural) and 6.6% (1.6% rural), respectively. In urban areas, only 10% of household heads have agricultural occupations, thus they do not have the self-production of cereals and potatoes at their disposal.

The contribution of oil and fats and vegetables and fruits in people's diet in Ethiopia is very small. While oil and fat (including oil seeds) contribute 4.5% of the total calorie intake, fruit and vegetables contribute just 2.2%. Animal source foods such as meat, fish, milk, cheese and egg all combined contribute only 1.7% of the total calorie intake, indicating that micronutrient consumption in Ethiopia is likely to be extremely small.

Table 8: Daily calorie intake by food group in 2010/11

Food Group						
	Urban		Rural		Total	
	Calorie	%	Calorie	%	Calorie	%
Cereals	1,334.8	48.7	1,823.2	59.7	1,739.6	57.9
Pulses	186.1	6.7	205.0	6.7	201.8	6.7
Oilseeds	3.7	0.1	5.3	0.2	5.0	0.2
Pasta product	44.4	1.6	5.5	0.2	12.2	0.4
Injera (Bread & Others)	212.4	7.7	26.2	0.9	58.0	1.9
Meat	33.2	1.2	11.8	0.4	15.4	0.5
Fish	1.0	0.0	0.9	0.0	0.9	0.0
Milk, Cheese & Egg	27.3	1.0	37.4	1.2	35.7	1.2
Oils & Fat	287.8	10.4	97.5	3.2	130.0	4.3
Vegetables and Fruits	89.8	3.2	57.9	1.9	63.4	2.2
Spices	57.7	2.1	39.6	1.3	42.7	1.4
Potato, Tubers & Stems	108.1	3.9	468.1	15.3	406.5	13.5
Coffee, tea & Hops	31.0	1.1	67.0	2.2	60.9	2.0
Other Food items	114.9	4.1	56.6	1.9	66.6	2.2
Foods Out of Home	182.2	6.6	49.6	1.6	72.3	2.4
Non- Alcoholic Beverages	9.0	0.3	4.7	0.2	5.4	0.2
Alcoholic Beverage	48.4	1.7	96.4	3.2	88.2	2.9
Total	2,772	100	3,053	100	3,005	100

Source: MoFED, 2013a.

As a summary, comparing the daily calorie intake per adult equivalent by food group we can see that cereals comprise a significant proportion of daily calorie intake per adult equivalent. Potatoes, tubers and stems also make a strong contribution particularly for rural households. The contribution of animal source food, and oil and fat in people's diet is extremely small.

3.2 Trends in food poverty

The CSA through its Consumption Expenditure Survey collected consumption expenditure disaggregated by consumption items. Using this data set, the national food poverty indices - food poverty index (incidence), gap and severity - for Ethiopia were computed by the MoFED (2013). Food poverty incidence is the percentage of the population who consume less than 2200 kilo calorie per day per adult. The food poverty gap is computed as the average shortfall of poor people's consumption (against a target of 2,200 kilocalories) while food poverty severity is the squared food poverty gap. The national food poverty index declined from 42% in 1999/2000 to 38% in 2004/05 (a 9% decline) and to 34% in 2010/11 (a 12% decline: all changes are statistically significant (table 9). These trends indicate a better achievement in food security during the PASDEP period than hitherto. Both the food poverty gap and the poverty severity increased between 1999/00 and 2004/05, but subsequently declined between 2004/05 and 2010/11; however, the decline in the food poverty severity index between 2004/05 and 2010/11 is not statistically significant.

When food poverty is decomposed into rural and urban areas, we see a greater decline of the food poverty index in urban areas (by 21%) than in rural areas (by 10%) between 2004/05 and 2010/11. Despite the considerable decline in rural food poverty incidence between 2004/05 and 2010/11, no statistically significant change was observed in the food poverty gap and severity of food poverty (squared poverty gap) during the same period in rural areas. In urban areas the food poverty gap and severity indices declined substantially (by 38% and 40%, respectively) and were statistically significant. Despite the occurrences of persistent food inflation and frequent drought since 2004/05, we observed a reduction in food poverty incidence in rural areas, and in poverty incidence, gap and severity indices in urban areas of Ethiopia. This resilience of people can be attributed to the broad based economic growth, and to the ability of the Ethiopian government to manage crises and protect the vulnerable people from economic shocks.

Table 9: Trends of national and rural/urban food poverty

	Food Poverty indices over time				Change in %	
	1995/96	1999/00	2004/05	2010/11	2004/05 over 1999/00	2010/11 over 2004/05
National						
Head count index	0.495	0.419	0.38	0.336	-9.2***	-11.6***
Poverty gap index	0.146	0.107	0.12	0.105	12.8***	-12.5***
Poverty severity index	0.06	0.039	0.049	0.046	24.5***	-6.1 ^{NS}
Rural						
Head count index	0.516	0.411	0.385	0.347	-6.5***	-9.9***
Poverty gap index	0.152	0.103	0.121	0.111	16.8***	-8.3 ^{NS}
Poverty severity index	0.062	0.038	0.049	0.05	29.0***	2.0 ^{NS}
Urban						
Head count index	0.365	0.467	0.353	0.279	-24.5***	-21.0***
Poverty gap index	0.107	0.127	0.117	0.073	-8.0*	-37.6***
Poverty severity index	0.044	0.047	0.048	0.029	1.5 ^{NS}	-39.6***

Source: HICE survey of 1995/96, 1999/00, 2004/05 and 2010/11;

* =statistically significant at 10%, ** =statistically significant at 5%, *** =statistically significant at 1%,

3.3 The food gap

Looking at the food gap reported by households can provide another indication of food security and nutrition intake, measured as the percentage of households who face food shortage in at least one month per year. The Welfare Monitoring Survey conducted in 2010/11 by CSA shows that, 21.5 per cent of Ethiopian households reported experiencing a food shortage, with the average duration of shortage at just over three months of the year. This represents a significant drop compared with 2004 WMS results, when a third of households reported experiencing a food shortage. Of those affected by food insecurity, the average number of months of food shortage experienced in 2011 was just over three months of the year. Again this shows a fall compared to five years ago, but it still represents a serious policy challenge, however, and should remain a priority.

Table 10: Proportion of households experiencing food shortages and average months of food shortage

Region	2004	2011	Average no. months food shortage 2011
Tigray	36.4%	13.0%	2.9
Afar	37.3%	7.4%	5.7
Amahara	29.8%	23.1%	3.0
Oromiya	36.7%	16.1%	3.1
Somali	42.8%	30.7%	4.5
Benshangul-Gumuz	30.2%	5.7%	2.4
SNNP	27.5%	35.0%	3.4
Gambella	-	32.3%	2.6
Harari	23.7%	8.2%	3.3
Addis Ababa	11.6%	7.8%	3.9
Dire Dawa	45.2%	12.6%	2.1
National	32.5%	21.5%	3.2

Source: MoFED (2013).

4. Nutritional Outcome Trends

Adequate nutrition is a basic human right, and a pre-requisite for good health. Malnutrition has several life threatening effects, increasing the risk of serious infections, severe electrolyte disturbances and mortality. Severe and repeated attacks of malnutrition during childhood can negatively impact the long-term physical and mental development of children. There is a growing body of evidence that indicates malnutrition in preschool children is causally linked to reduced stature, poorer cognitive functioning, and diminished economic productivity in adulthood (Behrman, Alderman and Hoddinott, 2004; Masset, et al. 2012).

Many studies have demonstrated that malnutrition in Ethiopia is serious. Factors contributing to under nutrition include widespread poverty, limited employment opportunities, poor infrastructure, high population pressure, low educational levels, inadequate access to clean water and sanitation, high rates of migration and poor access to health services (Bhutta 2008). It is estimated that malnutrition contributes to an estimated 270,000 deaths of under-five children

each year. In other words, malnutrition is the underlying cause of 57% of child deaths in Ethiopia (SCUK, 2009).

Economic growth, combined with investments in rural infrastructure and establishment of the national safety net programme, led to a reduction in the prevalence of malnutrition over the last decade. However, according to the findings of the Demographic and Health Survey conducted in 2010, 44 per cent of children nationwide were stunted (too short for their age), a condition reflecting the cumulative effect of chronic malnutrition. Chronic malnutrition is more pronounced in rural areas, where 46 per cent of children are stunted compared to 31 per cent in urban areas. Rates above 40 per cent are considered to be critical by the World Health Organization.

In 2010, close to 10 per cent of children were wasted (too thin for their height), a condition reflecting acute or recent malnutrition. Children in rural settings are twice as likely to be wasted as children in urban settings. In the same period, the underweight (weight for age) prevalence was 29 per cent nationally and is again more pronounced in rural areas of the country than urban areas.

Table 11: Prevalence of Malnutrition in 2010

Nutritional Status of Children	Urban	Rural	Total
Stunting	31.5	46.2	44.4
Wasting	5.7	10.2	9.7
Underweight	16.3	30.4	28.7

Source: Ethiopian Demographic and Health Survey Report, 2011

Data from the three most recent Ethiopia Demographic and Health Surveys (EDHS) (EDHS 2000, 2005, 2010) are shown in Table 12. Stunting and underweight decreased by more than 10 percentage points between 2000 and 2010; wasting fell slightly from 12.9 per cent to 9.7 per cent.

Table 12: Nutrition trends from 2005-2010 (converted to WHO Standards)

Nutritional Status of Children	2000	2005	2010
Stunting	58	52	44.4
Wasting	13	12	9.7
Underweight	42	35	28.7

Source: DHS survey

Table 13 below presents a breakdown of child nutrition indicators by gender and rural/urban differences. Overall, 44 per cent of children under-five years are stunted. There are slight differences between boys and girls, with girls less likely to be stunted. The larger differences are between urban (31.5%) and rural areas (46.2%), with a larger proportion of stunted children in rural areas. The proportion of children underweight has fallen from 42% in 2000 and 37% in 2005, to 29% in 2010, which may indicate further decreases in the proportion of stunted children in the future, as stunting tends to reflect longer term nutrition.

The EDHS compiles information on household wealth, and calculates an asset-based wealth index that is common to DHS surveys around the world. It found that child nutritional outcomes (measured by stunting, wasting and underweight) improve with increasing wealth of the household (table 14). Stunting decreases quite rapidly as wealth increases, from almost half of all children in the bottom wealth quintile to 30 per cent of children in the top quintile. There is a similar pattern for the other indicators of nutrition, namely wasting and underweight.

Table 13: Indicators of child nutrition in Ethiopia in 2010, by gender and location (rural/urban)

Proportion:	Stunted	Wasted	Underweight
Male	46.2	11.1	30.5
Female	42.2	8.2	26.8
Urban	31.5	5.7	16.3
Rural	46.2	10.2	30.4
All	44.4	9.7	28.7

Source: EDHS 2011

Table 14: Indicators of child nutrition in Ethiopia in 2010 by wealth quintile

Proportion:	Stunted	Wasted	Underweight
Wealth Quintile			
1	49.2	12.1	35.6
2	47.7	12.3	33.2
3	45.6	9.4	28.8
4	45.0	7.7	25.8
5	29.7	5.1	15.1

Source: EDHS

Table 15 shows the regional incidence of malnutrition, which mirrors the consumption poverty profiles for the regions fairly consistently. The highest incidence of chronic malnutrition (stunting) are in Afar, Amhara and Tigray, whilst it is lowest in Addis Ababa.

Table 15: Indicators of child nutrition in Ethiopia, by region

Region	Stunted	Wasted	Underweight
Tigray	51.4	10.3	35.1
Afar	50.2	19.5	40.2
Amhara	52	9.9	33.4
Oromiya	41.4	9.7	26
Somali	33	22.2	33.5
B.G.	48.6	9.9	31.9
SNNP	44.1	7.6	28.3
Gambella	27.3	12.5	20.7
Harari	29.8	9.1	21.5
Addis Ababa	22.0	4.6	6.4
Dire Dawa	36.3	12.3	27.6

Source: EDHS

In addition to macronutrient malnutrition, micronutrient deficiencies are a major contributor to childhood morbidity and mortality. Children can receive micronutrients from foods, food fortification or direct supplementation. Micronutrient deficiencies, particularly of iron, iodine and Vitamin A, are significant public health problems in Ethiopia. The prevalence of anaemia among children under five has dropped from 54 per cent in 2005 to 44 per cent in 2011. Iodine is vital for healthy growth and mental development (WHO, 1993). According to the World Health Organization, salt iodization needs to reach 90 per cent if Ethiopia is to be on track to eliminate iodine deficiency (WHO, 1993). The Ministry of Health and relevant National Nutrition Programme Program implementing agencies have taken important strides to ensure progress towards universal salt iodization, including calling for mandatory use and sale of iodized salt.

A 2005 survey on iodine deficiency conducted by the Ethiopian Health and Nutrition Research Institute (EHNRI) shows that goitre prevalence among children was 40 per cent (28 per cent for palpable and 12 per cent for visible goitre) and was 36 per cent among mothers aged 15-49 years (EHNRI, 2010). Vitamin A is an essential micronutrient for the immune system that plays an important role in maintaining the epithelial tissue in the body: nationwide supplementation is undertaken twice a year, covering 92 per cent of children under five (MOH, 2011/12).

The practice of appropriate breastfeeding and complementary feeding are vital to child survival. It is recommended that a child be exclusively breastfed for the first six months with continued breastfeeding up to 24 months of age. The EDHS 2011 reported that 98 per cent of children had been breastfed at some time. Fifty-two per cent of infants started breastfeeding within one hour of birth, and 80 per cent within 24 hours: this falls short of the HSDP IV target of 92 per cent of children breastfed within 24 hours of birth. Only 49 per cent of children less than six months of age were found to be exclusively breastfed. Equally important is the timing of complementary food introduction: the EDHS 2011 identified a majority of infants had been introduced to such foods either too early or too late.

5. Current Policies and Programs

This section discusses and assesses the relevant policies currently under implementation in agriculture, health and nutrition, and potential links between them.

5.1 Agriculture Sector Policy and Investment Framework (PIF) 2010-2020

The Agriculture Sector Policy and Investment Framework (PIF) provides a strategic frame for the prioritization and planning of investments that will drive Ethiopia's agricultural growth and development. It is designed to operationalize the CAADP Compact signed by the government and its development partners. The PIF is a 10-year road map for development which aspires to promote fast, broad-based development and increase productivity within the agricultural sector so that surplus production enhances economic growth. It is anchored to, and aligned with, the national vision of Ethiopia becoming a middle-income country by 2020 and with a number of other key policies and strategies, including the Growth and Transportation Plan (GTP).

The Development Objective of the PIF is to "sustainably increase rural incomes and national food security". This objective embodies the concepts of producing more, selling more, nurturing the environment, eliminating hunger and protecting the vulnerable against shocks. The policy recognizes the importance of the smallholder sub-sector, the high prevalence of rural poverty and the large productivity gap, and makes increasing productivity in smallholder agriculture its top priority.

The policy aims to help farmers transform from purely subsistence farming to semi-subsistence/semi-commercial status, practicing farming as a business and to adopt more sustainable natural resource management practices in order to arrest and reverse environmental degradation. It also focuses on enhancing investments for production support, rural commercialization and natural resource management.

However, the strategy does not mention specifically nutrition and the production of micro-nutrient-rich food. Aiming at increasing rural incomes and national food security may positively

contribute towards the consumption of more calories, but does not necessarily guarantee an increased availability of micronutrient-rich food such as animal source foods. Hence it is crucial to revise the “Agriculture Sector Policy and Investment Framework” and include micronutrient-focused interventions so as to encourage small scale and commercial farmers to produce more micro-nutrient-rich foods in order to achieve greater nutrition impact.

5.2 Growth and Transformation Plan

Following the implementation of Ethiopia's first Poverty Reduction Strategy Programme (PRSP) and the Development and Poverty Reduction Programme (SDPRP), the government implemented the Plan for Accelerated and Sustained Development to End Poverty (PASDEP) conceived as the medium-term-plan to attain the MDGs.

The GTP continues the PASDEP strategy of reducing poverty through economic growth in all areas of the economy. It is a very ambitious five-year growth plan, with projected GDP growth of 11-15% per year from 2010 through 2015 with a total cost estimated at US\$ 75-79 billion over five years. GTP aims to enable the nation to double agricultural production and to achieve general economic growth by 15 per cent per annum on average. The plan is also designed to enable the industrial sector to take the lead in overall development activities in the country. GTP also aims at expanding and ensuring high quality health and education services towards meeting MDG targets. It aims to ensure that the benefits go to youth and women by enhancing capacity and good governance. The plan also aims to ensure food security at household and national levels.

Under the GTP, opportunities for commercial agriculture have been planned by allocating over 3.2 million hectares of land to commercial farming investors and introducing advanced farming technology such as high value crops, progressive irrigation techniques, improved seeds, increased fertilizer use, and strategies to yield multiple harvests each year. Investors interested in producing high-value horticulture products such as flowers, fruits, vegetables, and herbs will be given special consideration.

To promote large-scale industrial and infrastructure projects, the government has planned to develop four industrial cluster zones, establish government-promoted industrial sectors eligible for tax holidays and duty-free import of capital goods in sectors such as textiles and garments, leather, sugar, cement, metals and engineering, chemicals, pharmaceuticals, and agro-processing. Moreover, GTP focused on extractive industries such as gold, oil, gas, potash, and gemstones as a means to promoting industrialization. As part of expanding transport infrastructure, the GTP plans to increase the road network by 16,000 km throughout the country, and build a 2,400 km-long standard-gauge rail network with opportunities to supply locomotive engines and railway signalling systems. Increasing electrical power generation capacity from two thousand to eight thousand megawatts and seeking investment in renewable energy projects involving hydro, wind, geothermal and biofuels, were the major plans to improve the energy supply. To improve the flow of information, mobile telephone subscribers were projected to jump from seven to forty million and internet service subscribers were planned to increase from less than 200,000 to 3.7 million during the GTP period.

5.3 Food Security Programme

The Food Security Programme has been designed to address the underlying sources of chronic and transitory food insecurity in the country. The core objectives of this programme are to enable 8.29 million chronically food insecure people to attain food security over the five year period 2010-2014. The other objective is to significantly improve the food security situation of the remaining 6.71 million people facing transitory food insecurity. The Food Security Programme consists of the Productive Safety Net Programme (PSNP), Household Asset Building Programme (HABP), the Voluntary Resettlement Programme and the Complementary Community Investment Programme (CCI).

The Intra-Regional Voluntary Resettlement Programme has been intended to create access to land for food insecure households who live in highly degraded and over-populated parts of the region so as to enable chronically food insecure households to attain food security through migration and settlement with access to enough land to become food secure through farming. The program started in 2002/03, and considerable progress has been made since then. For instance, in 2006/07, it was planned to internally resettle 57,250 households in the major regions of the country-Amhara, Oromiya and SNNP Regional states. Intensive efforts were made to attain the target, and by the end of the year, 28,794 (50.3 % of the planned) households were resettled. According to the government report so far out of 224,021 households who were voluntarily re-settled during the period 2003/04 -2010/2011, 220,801 households (98 per cent) have now become food self-sufficient (MOFED/MoA 2011).

The Productive Safety Net Programme (PSNP) is one of the key interventions designed by the Government to serve the dual purpose of bridging the income gap for chronically food insecure households, and engaging such households in community asset-building efforts to earn income, especially during the lean season and times of drought. The PSNP was started in 2005 with 4.8 million chronically food insecure people in Amhara, Oromiya, Tigray, SNNP and Harari regional states and Dire Dawa Administrative Council, covering a total of 192 Woredas. The programme has had two components – labour intensive public works and direct support for labour-poor households. The able-bodied are engaged in public works for which they are paid a minimum amount, while those households unable to engage in work are provided the same amount free.

In 2006 the number of programme beneficiaries increased to 7.2 million and the same number of beneficiaries was maintained for 2007 and increased to 8 million after 2007. In 2007, 5.8 million beneficiaries (over 80%) participated in the Public Works, while 1.3 million received direct support. The objective of the overall Safety Net Programme is to protect asset depletion at the household level and create communal assets at the community level. Hence, the labour intensive public works activities aim to create communal assets. The major activities of the public works include: soil and water conservation, water harvesting, small scale irrigation, afforestation, rural road constructions and social infrastructure development activities. The Public Works activities are based on the Community Based Participatory Watershed Planning (CBPWDP) approach.

Linked to PSNP is the Complementary Community Investment Programme, which focuses on capital intensive community infrastructure development with the objective of benefiting groups of food insecure people living in chronically food insecure woredas of pastoral, semi pastoral and moisture-stressed highland areas.

Asset depletion has been considered as one of the principal causes of food insecurity in the country. Accordingly, sustainable asset building has been considered as a way to address the food security problem. To this effect, packages of supports have been developed and credit facilities have been arranged. During 2006/07, it was planned to provide credit service for 320,974 households, and ultimately 377,713 households (118 % of target) obtained access to credit to purchase different types of technology packages. The source of credit has been largely the Government's annual Food Security Budget. The other funding sources to provide a revolving fund that can be used for credit are the World Bank, CIDA and the Italian Government Food Security project.

According to a government report (MoARD, 2009), achievements by regions in this regard met planned targets except for Amhara Region, where the plan was not fully implemented. The details of implementation by region are presented as follows:

- In Amhara Region, the plan was to provide credit to 104,875 household heads and 96,377 household heads got credit to purchase different types of technology packages. The achievement against the planned target was 92%;
- In Oromiya Region, the plan was to provide credit to 52,969 household heads, and 95,536 household heads got access to credit support to purchase agricultural inputs and to participate in different income generating activities. The achievement against the planned target was 180%;
- In Tigray Region, 127,130 household heads were planned to obtain credit support, and credit was provided to 145,580 household heads. The achievement against the planned target was 115%;
- In SNNP Region, 36,000 household heads were planned to get credit to procure agricultural inputs as well as to participate in income generating activities. About 40,214 household heads got credit for the same purpose. The achievement against the planned target was 112%.

A recent report shows the PSNP has created a significant impact on participants' food security status in 2011 (Berhane, 2011). For example, the PSNP has improved the annual period of food security by 1.05 months and increased the number of children's meals consumed during the lean season by 0.15 between 2006 and 2010. These improvements in food security have been in all regions. A report by FAO and WFP (2012) also shows that the number of people in need of food assistance during the first half of 2012 was projected at 3.24 million, a 29 per cent decrease compared to the second half of 2011. Exceptions include Afar, Dire Dawa, Harari, Gambella and Benishangul-Gumuz regions where the number of people in need of relief assistance has slightly increased compared to the previous semester.

5.4 HIV/AIDS National Policy

The government of Ethiopia approved a comprehensive HIV/AIDS policy in 1998 with the overall objectives of guiding the implementation of programmes to prevent the spread of the disease, decreasing the vulnerability of individuals and communities, caring for those living with the disease, and reducing the adverse socio-economic consequences of the epidemic.

The comprehensive national policy aims to support the AIDS control programme through capacity building and training of people from all sectors, including the youth and community groups. This includes strengthening the secretariat offices at the regional, zonal and woreda

levels to be able to provide appropriate treatment for STDs and extend support to people living with HIV/AIDS and their relatives.

The major objective of the policy was to reduce the prevalence of the epidemic. The instruments (measures) devised to achieve this objective were (1) establishment of a functional institutional framework at federal, regional, and woreda levels; (2) Define work programmes to facilitate the functioning of woreda (district) councils; and (3) increase the number of clinics providing voluntary counselling and testing by 10%.

Under the HIV/AIDS policy a strategy was developed to intensify a multi-sectoral HIV Response, the Strategic Plan and Management SPM II (2009-2014). After some analysis of the epidemic and the current policy response, two major strategic challenges were identified, namely creating an enabling environment for the response and priority programmatic thematic areas. Strategic issues included in the enabling environment thematic area are capacity building, community mobilization and empowerment, leadership and governance, mainstreaming, coordination, and partnership and networking. Strategic issues in the programmatic thematic areas include: intensifying HIV prevention, increasing access and quality of chronic care and treatment, strengthen care and support, and enhance generation and use of strategic information.

Programmatic Strategic Issues

Intensifying Prevention. HIV/AIDS policy holds that further spread of the epidemic has to be reversed and ultimately halted, which requires among others bringing social transformation to reduce social, cultural and economic factors that make people individually or collectively vulnerable to HIV infection, and creating comprehensive knowledge and behavioural change on a mass basis among the population at large with a particular focus on most at-risk population groups. The policy also proposes to provide prevention services and promote and availed so as to reduce and halt sexual as well as vertical transmission of HIV. Prevention of new HIV infection among young people & adult population is also planned to be intensified using a combination of prevention approaches to address structural, behavioural, and bio-medical issues in HIV prevention. Package of HIV prevention services for mostly at risk population (MARPs) and people living with HIV (PLHIV) are planned to be developed, implemented and scaled up towards universal access.

Strengthening chronic care & treatment. The HIV/AIDS policy proposed to make efforts to improve quality of life for HIV patients during SPM I has been planned to be further strengthened by creating universal access to and increasing utilization of HIV chronic care & treatment services.

Chronic care and treatment services are also envisaged to be further decentralized through expansion of services, task shifting & improving service integration, linkages and referral systems. The policy will also address the barriers to service delivery by increasing the number and quality of human resources, and availing of opportunistic infection (OI) and Antiretroviral (ARV) drugs, as well as improving logistic, laboratory and strengthening Health Management Information Systems HMIS .

5.6 Health Sector Development Programme

The government of Ethiopia issued its health policy in 1993, which emphasizes the importance of achieving access to a basic package of quality primary health care services by all segments of the population, using the decentralized state of governance. The health policy stipulates that the health services should include preventive, promotive and curative components.

The Ethiopian government's goal is to have a health care system that gives a comprehensive and integrated primary health care at the community level. The Health Sector Development Programme aims to build a wide-reaching system that focuses on communicative diseases, such as HIV, tuberculosis, and Malaria; and maternal and childcare health issues such as immunization and reproductive health. Dissemination of Information on health, hygiene and nutrition are part of the envisioned health system.

In order to achieve the goals of the health policy, a twenty-year health sector development strategy was formulated, which is being implemented through a series of five-year plans. Implementation of the first Health Sector Development Program (HSDP) was begun in 1997, and now the second HSDP is under way. The main thrust of the HSDP implementation is based on a sector-wide approach, encompassing the following eight components:

- Service delivery and quality of care
- Health facility rehabilitation and expansion
- Human resource development
- Pharmaceutical services
- Information, education and communication
- Health sector management and management of information systems
- Monitoring and evaluation
- Health care financing.

The HSDP has introduced a four-tier health service system which comprises a primary health care unit (a network of a health center and five health posts), the hospital, regional hospital and specialized referral hospital. Health posts are staffed by two health extension workers. These new cadres are trained for one year and their training emphasizes disease prevention measures. A health center is at the highest level of a primary health care unit. It provides in-patient and out-patient services, including surgery, and laboratory services.

A health station used to give services that a health center does, but at a smaller scale, but this is now being phased out. According to the new health sector development program (HSDP IV), a primary health care unit comprises of 5 health posts and a health center serving as a referral point. Therefore, when the HSDP is fully implemented, a health center will serve 25,000 people.

The aspect of health management and support within the health system is operated in accordance with the decentralized administrative structures. At present, the decentralization process has expanded to district level and has devolved primary responsibility for service delivery and management from regional health bureaus to district health offices, enabling them to manage and coordinate primary health care delivery in their respective areas.

Though the HSDP is explicitly planned to reduce malnutrition, there is no discussion in the policy related to micronutrients as a means of reducing malnutrition.

5.7 National Health Extension Programme

In 2003, the Ethiopian Federal Ministry of Health (FMOH) launched a new health care plan, the Accelerated Expansion of Primary Health Care Coverage, through a comprehensive Health Extension Programme (HEP). Recognizing the huge gap between need and health care services available, the FMOH promised to focus on “providing quality promotive, preventive, and selected curative health care services in an accessible and equitable manner to reach all segments of the population, with special attention to mothers and children”. The policy places particular emphasis on establishing an effective and responsive health delivery system for those who live in rural areas.

The government promised to develop health care delivery capacity, “designed to improve the health status of families, with their full participation, using local technologies and the community’s skill and wisdom”. The HEP draws on the same principles as of primary health care as the HSDP, but focuses on the improvement of prevention skills and behaviours within the household, and involves fewer facility-based services. Most of the activities listed in the National Health Sector Programme (HSDP) Strategies are to be implemented through the HEP.

The HEP has a focus on community-based interventions, including the promotion of family planning. As a preventive health programme, the HEP promotes four areas of care: Disease Prevention and Control, Family Health, Hygiene and Environmental Sanitation, and Health Education and Communication.

Components of Health Extension Package

Disease Prevention and Control	HIV/AIDS & other STIs and TB prevention & control
Hygiene and Environmental Sanitation	Malaria prevention & control
Excreta disposal	First aid emergency measures
Solid and liquid waste disposal	Family Health
Water supply and safety measures	Maternal and child health
Food hygiene and safety measures	Family planning
Healthy home environment	Immunization
Personal Hygiene	Health Education & Communication
Nutrition	Adolescent reproductive health

To provide coverage for the whole country, the government decided to accelerate the implementation of the HEP by training and deploying 30,000 Health Extension Workers (HEWs) by 2009, which has been achieved.

The overall goal of HEP is that, if the right knowledge and skill is transferred to households they can take responsibility for producing and maintaining their own health; thereby enabling to create a healthy society and reduce rates of maternal and child morbidity and mortality.

The objectives of the HEP include:

- Improve access and equity to preventive essential health interventions at the village and household levels in line with the decentralization process to ensure health care coverage at kebele and household levels with a focus on sustained preventive health actions.

- Ensure ownership and participation by increasing health awareness, knowledge, and skills among community members.
- Promote gender equality in accessing health services.
- Improve the utilization of peripheral health services by bridging the gap between the communities and health facilities through HEWs.
- Reduce maternal and child mortality.
- Promote healthy life style.

The HEP is the main vehicle for bringing key maternal, neonatal and child health interventions to the community. As expected, almost all of the activities listed in the National Child Survival Strategies have been implemented through the HEP.

5.8 Nutrition policy and strategy

Until recently, multi-sectoral factors contributing to malnutrition had been insufficiently emphasized, with the focus placed on addressing food security as the primary means to achieve nutritional security. Traditionally, there has been a food-biased approach towards combating malnutrition in Ethiopia, but there has recently been a growing understanding of the multidimensional and multi-sectoral characteristics of the causes of malnutrition among policy makers. Based on an analysis of the situation, the draft National Nutrition Strategy (NNS) was formulated during 2005/2006. The situation analysis report highlighted the importance of a multi-sectoral approach in addressing food as well as non-food factors including those related to health and nutrition.

The Government of Ethiopia developed the 2005-2010 Plan for Accelerated and Sustained Development to End Poverty (PASDEP), which explicitly called for the development and implementation of the NNS and an Action Plan to achieve the first Millennium Development Goal of halving poverty and hunger by 2015. This was the basis for the development of the National Nutrition Strategy.

National Nutrition Strategy (NNS)

The Government of Ethiopia launched its first ever National Nutrition Strategy (NNS) in 2008, thereby achieving a major step forward in its efforts to tackle persistent malnutrition in the country. Chronic malnutrition among children in Ethiopia remains very high at 47 per cent and at periods during the year, prevalence of acute malnutrition reached at its highest level. Micronutrient deficiencies are rife; nearly one-third of women are undernourished and approximately 35 million people in the country are undernourished. Progress has been made in Ethiopia to reduce child malnutrition; underweight prevalence has decreased by approximately 0.5 percentage points between 2000 and 2005 and by 6 percentage points by 2011. However, the proportion of underweight children in the country would need to reduce by more than 2 percentage points per year to achieve MDG 1 by 2015. Malnutrition in Ethiopia is the underlying cause of 57 per cent of child deaths and thus failing to address this problem will also hold back progress towards reaching MDG 4, to reduce child mortality.

The overall goal of the NNS was to ensure that all Ethiopians are able to achieve an adequate nutritional status in a sustainable manner. The strategy focused on reducing malnutrition among

the most vulnerable groups, particularly young children, pregnant/lactating women, individuals with HIV and households affected by food insecurity. It also includes components to help promote healthy diets and lifestyles. Crucially, a specific objective of the NNS is to improve coordination of nutrition-related activities implemented by other government ministries and relevant partner organizations and to create links across sectors.

National Nutrition Programme (NNP)

The National Nutrition Programme Program (NNP) was developed by the Federal Ministry of Health in collaboration with relevant government sectors and partner organizations with the goal of reducing the incidence of malnutrition in the country, particularly amongst women and children under the age of five. It is a long-term program that was to be implemented in two phases of 10 years starting 2008, with each phase lasting five years. The NNP I, for the first five years (2008/2009-2012/2013) was finalized and approved by the National Nutrition Coordination Committee in 2008.

The last five years have seen promising achievements in Ethiopia. For one, the policy landscape for nutrition has increased. The Growth and Transformation Plan has set stunting reduction as one of its goals for 2015. The Government of Ethiopia, in collaboration with nutrition development partners, has committed to reducing stunting at a faster rate, and signed the commitment for food and nutrition security at the G8 meeting in 2012.

The National Nutrition Programme was revised in 2013 to strategically address the nutrition problem in the country by taking into account the multisectoral and multidimensional nature of nutrition and by focusing on the lifecycle approach to map key actions needed to improve the nutritional status of strategic target groups (women and children). The revision was also done in order to strengthen initiatives that were not adequately addressed in the 2008 NNP and to include initiatives that have emerged since that NNP was devised, including the accelerated Stunting Reduction Initiative, National Food Fortification Programme, and multisectoral linkages among key NNP implementing sectors. The revision also aligned the end of the first phase of the NNP with the GTP and MDGs so as to extend the first phase by 2 years to 2015.

The programme has primary impact, outcome and intermediate objectives. The primary impact objectives are (1) to reduce the prevalence of stunting from 44.4% to 30% by 2015, (2) to reduce the prevalence of wasting from 9.7% to 3% by 2015, and (3) to reduce the prevalence of chronic under nutrition in women of reproductive age from 27% to 19% (see table 16 for details). The revised strategy has five strategic objectives with target outcomes in 2015 for each objective (see Box 1).

In general the new strategy outlines how nutrition can be mainstreamed in the agricultural, education, water, trade and industrial sectors. It also envisages that the programme must address equity by dealing with gender sensitive nutritional programmes.

Table 16: Impact objectives on improved nutritional status of women and children

	2010/11 (Baseline)	2012/13	2014/15
Proportion of under 5 children with height-for age Z-score below -2 SD (prevalence of stunting)	44.4%	25.0%	30.0%
Proportion of under 5 children with weight-for age Z-score below -2 SD (prevalence of under-weight)	28.7%	25.0%	21.0%
Proportion of under 5 children with weight-for-height age Z-score below -2 SD (prevalence of wasting)	9.7%	7.0%	3.0%
Proportion of women of reproductive age (15-49 years) with BMI<18.5	27.0%	24.0%	19.0%
Proportion of new-born who weigh less than 2.5 kg at birth	10.8%	11.0%	9.0%

Source: NNP June 2013-June15

Box 1: Strategic objectives of National Nutrition Programme

The Strategic Objective One: Improve the nutritional status of women (15-19 years) and adolescents (10-19 years)

Outcome objective:

- Reducing the proportion of adolescent girls age 15-19 with a BDM<18.5 from 36 per cent to 25 per cent.
- Reducing the prevalence of anemia among pregnant women from 22 per cent to 12 per cent.

Strategic Objective Two: Improve the nutrition status of infants, young children and children under five

Outcome objective:

- Increase the proportion of infants 0-6 months old who are exclusively breastfed from 52 per cent to 70 per cent.
- Increase the proportion of breastfed children age 6-23 months with the minimum acceptable dietary score from 4 per cent to 20 per cent.
- Reduce the prevalence of Bitot's spots in children age 6-59 month from 1.7 per cent to less than 0.5 per cent.
- Reduce the proportion of children 6-12 years old with median urinary iodine concentration of less than 100µg/l to below 50 per cent.
- Increase the proportion of household using iodized salt from 15.4 per cent to 95 per cent.
- Reduce the prevalence of anemia in children 6-59 month from 44 per cent to 25 per cent.
- Increase zinc supplementation in the treatment of diarrhea from 5 per cent to 50 per cent.
- Maintain coverage of Vitamin A supplementation /de-worming at over 90 per cent.

Strategic Objective Three: Improve the delivery of nutrition services for communicable and non – communicable/lifestyle related diseases at all age groups.

Strategic Objective Four: Strengthen implementation of nutrition sensitive interventions across sectors.

Outcome objective:

- Increase the proportion of households consuming fruit and vegetables by 30 per cent.
- Increase fruit and vegetable production from 894,000(2011) to 5,905,000 tons by 2015 to improve food diversification at community level.
- Increase potable water coverage from 60 per cent to 76 per cent.
- Increase the proportion of schools that provide biannual de-worming to 60 per cent.

Strategic objective Five: Improve multisectoral coordination and capacity to ensure NNP implementation.

Outcome objective:

- Increase the proportion of the health development army trained in the preparation of complementary food to 60 per cent.
- 100 per cent of nutrition sensitive sectors will integrate nutrition in their annual work plan in line with NNP.
- 100 per cent of nutrition sensitive sector ministries will assign nutrition focal persons for the sector
- All regions will establish a Regional Nutrition coordination body and technical committee.
- Strategic objective Three: Improve the delivery of nutrition services for communicable and non-communicable/lifestyle related diseases at all age group.

It is important to note how the new strategy tries to link agriculture to nutrition. The main objective of the agricultural sector in the GTP focuses on increasing the production and productivity of food to make the country food secure, but no specific programmes existed to increase the nutritional quality of food. As a result, the link between agriculture and nutrition was weak and unclear. In the new strategy, however, the agricultural sector is given an additional mandate of increasing the quality of food produced and mainstreaming nutrition within agriculture, for example by increasing the consumption of a diversified diet at household level, by improving access to and utilization of animal source foods such as dairy, poultry, meat and eggs, and by increasing the production and consumption of fish. This shows that there is now a better understanding and willingness of policy makers in Ethiopia to increase the linkage between agriculture and nutrition. However, given the past practice of the Ministry of Health, which has tended to dominate nutrition-related policy activities, there is no guarantee that the Ministry of Agriculture and Ministry of Health will coordinate their activities in an efficient and effective manner as long as the coordinating ministry is the Federal Ministry of Health.

Nutrition Relevant Programmes

Enhanced Outreach Strategy/Targeted Supplementary Feeding Programme (EOS/TFS)

The Enhanced Outreach Strategy/Targeted Supplementary Feeding (EOS/TSF) is the first national programme in Ethiopia to link community-based preventive health services with a ration of supplementary food for women and children who are identified as malnourished. It is one of the leading approaches to address child survival and malnutrition and its establishment in 2004 was triggered as a response to the famine that affected many parts of the country in 2003. It was also introduced as a transition strategy towards the establishment of the Ministry of Health's Health Extension Programme (HEP), which aims to extend primary health care services to meet the population's long term health and nutrition needs at community level.

The EOS/TSF programme is intended to deliver a combination of key child and maternal health interventions including Vitamin A supplementation (VAS), measles vaccination, provision of insecticide treated bed nets, de-worming on a six-monthly basis, and screening of pregnant women, women with infants under six months of age and children under five years of age.

The primary objective of EOS is to increase twice-yearly VAS coverage that has been extremely low. The opportunity was also taken to include deworming to promote normal growth and prevent malnutrition among children under the age of five.

The overall aim of the combined components of the EOS/TSF is to "reduce morbidity and mortality in children under five". The TSF objectives are:

- To prevent the nutritional deterioration of children under five and pregnant and lactating women.
- To prevent those moderately malnourished becoming severely malnourished.
- To rehabilitate moderately malnourished children and pregnant and lactating women through the provision of fortified supplementary food.
- To promote key nutrition messages.

Community Based Nutrition (CBN) Programme is a preventive community-based nutrition programme employing growth monitoring promotion, individual and group counselling on child

care and feeding, and screening for and managing malnutrition. This programme is implemented by the Health Extension Workers, with funding from UNICEF and the World Bank; it is being scaled up at the district level, with the goal of complete rural district coverage by 2013.

Supporting CBN is the Integrated Family Health Programme (IFHP), a \$50 million, USAID-funded, five year (2009-2013) project to improve maternal and child health across 300 districts. Nutrition activities include promoting maternal and child nutrition using the Essential Nutrition Action approach of behaviour change communication around seven key evidence-based nutrition interventions. The programme also seeks to build capacity of the overall health system, which is responsible to coordinate the programme. IFHP is jointly implemented by John Snow, Inc and Pathfinder International.

Alive and Thrive is a \$70 million, Gates Foundation-funded, five-year (2009-2013) initiative to improve infant and young child feeding practices by increasing rates of exclusive breastfeeding and improving complementary feeding practices in Ethiopia, Bangladesh, and Vietnam. Working with IFHP, A&T is utilizing the existing health extension programme as the main platform for delivering its community-based interventions, making use of frontline health workers and volunteers.

The aforementioned programmes are specifically designed to deal with the issues of nutrition. There are also other programmes which are not nutrition specific but they can be considered as ‘nutrition sensitive’ programmes. ‘Nutrition sensitivity’ is a concept that helps describe how an indirect intervention positively affects nutrition outcomes. Indirect (or “longer route”) interventions include actions within sectors such as agriculture, social protection, water and sanitation, education that do not necessarily have nutrition reflected in their core objectives (despite their potential impact on nutrition). Such programmes include the Productive Safety Net Programme, the Government’s Food Security Programme, the externally supported Food Security Project and the Protecting Basic Services Project.

Household food security, nutrition and health actions independently implemented and uncoordinated will not be able to reduce malnutrition. Experience elsewhere shows that these programmes must be accompanied by specific nutrition actions targeting the nutritionally vulnerable groups such as children under two, pregnant and lactating mothers, individuals affected by HIV/AIDS, and those with extreme food security risk. Hence there is a need to strengthen linkages among the various programmes affecting nutrition and food security.

The NNP provides structures for the harmonization and scaling up of current nutrition interventions with a greater focus on community-based and high impact interventions. In order to comprehensively address the nutrition problem, the NNP promised to harmonize government strategies, donor and NGO programmes and assistance that impact on nutrition. The NNP will also seek to orient the government’s large programmes towards achieving nutrition objectives and applying the “nutrition lens” in implementation and monitoring. This will be achieved through careful targeting, nutritional surveillance of direct actions to the vulnerable, and early warning systems for acute cases of malnutrition

The NNP is also expected to contribute to a significant reduction in the proportion of Ethiopians suffering from malnutrition, and poverty, in line with MDG 1. It is expected, in turn, to contribute

to the achievement of national health, education and development objectives presented in the Plan for Accelerated and Sustained Development to End Poverty (PASDEP).

6. Discussion and conclusion

This review indicates that there are several programmes related to food security and nutrition in Ethiopia, including rural and health sector development programmes. The rural sector development programme includes food security programmes designed to improve households' access to food. This programme substantially affects agricultural production and productivity, resulting in improved household access to food, which in turn has a profound effect on the nutritional status of children over time. The health sector development programme has been designed to improve the health status of the population and thereby improve the nutritional status of children. Though these two development programmes have an impacts on nutrition, their role was not clearly articulated until 2008 when the first national nutrition strategy was developed. According to the 2008 National Nutrition Strategy, the Federal Ministry of Health has been assigned as the coordinating ministry regarding nutrition. However, coordination between the agriculture and health ministries has not been very effective to date, especially at regional level. Until 2012, the coordination among all the various sectors was very limited, and it can be concluded that nutrition was not mainstreamed across sectors. When we look at the rural development strategy and food security programmes, both are aimed at making increased food available to the population and improved food security. The rural development strategy focused on productivity of crops and general food and calorie availability, rather than on specific micronutrient-rich crop and food types. The absence of a link between crop choices and nutrition implies that the link between agriculture-nutrition was very weak in Ethiopian policies.

The Agriculture Sector Policy and Investment Framework, the 10-year road map for development, aspires to promote fast, broad-based development and increase productivity within the agricultural sector so that surplus production enhances economic growth, but it does not explicitly mention increased production of, and access to, micronutrient-rich products. Hence it is crucial to revise the Agriculture Sector Policy and Investment Framework in order to include micronutrient-focussed interventions, so as to encourage small scale and commercial farmers to produce more micro-nutrient-rich foods in order to have better nutrition impact.

In 2012, Ethiopia developed its second national nutritional programme with many sectors becoming part of the strategy; this indicates Government acceptance that addressing nutrition required a more multisectoral approach. Understanding the multisectoral nature of nutrition and the need for mainstreaming, the new strategy outlines how nutrition could be mainstreamed in the agricultural, education, water, trade, and industrial sectors. It also envisaged that the programme must address equity by dealing with gender sensitive nutritional programmes. However, there seems still a need to find a better way of coordinating the nutrition related activities across sectors instead of providing the coordinating responsibility to the Federal Ministry of health.

One potential specific action could be to make the agricultural extension services, currently run under the Ministry of Agriculture and Rural Development, take responsibility for creating awareness among small-scale and commercial farmers so as to encourage production of micro-nutrient rich crops.

Various food security and health policies have been developed and implemented over the last fifteen years in Ethiopia. The main policies of the country are geared towards improving agricultural production and productivity. Little effort has been done so far with regard to improving the quality of food production and access of the poor to quality of food. Malnutrition among children in the country has, however, declined substantially. Is such decline in malnutrition attributed to increased agricultural production or improved health services or improvement in education? There are no explicit studies made so far into the relative contribution of various sectoral developments on nutrition, and specifically the contribution of agriculture to nutritional improvement. Therefore, more research work is required on how various sectors and intensification of agriculture has contributed to the reduction of under-nutrition in Ethiopia, and what kinds of specific intervention in the agricultural sector are required to improve nutritional status of children and the population at large.

Given that farmers are now being advised to grow for the market, interventions aimed at changing the pattern of consumption from staple to high micronutrient rich crops would be beneficial. It might be appropriate to use the health extension system to provide nutrition education. Once people are aware of the importance of micronutrients for better health and nutritional outcomes, the consumption behaviour of people may change in favour of consumption of micronutrient foods, which in turn will have a positive influence on the production of micronutrient rich crops through increased demand for micro-nutrient foods. With respect to the production of micronutrient rich crops, advice from the agricultural extension service would be appropriate so that farmers can increase the production and productivity of these crops to supply the market at reduced prices and increase own consumption. This implies that the market should play a role in the distribution of micronutrient-rich foods to the people. However, care should be taken that poor people have sufficient access to micronutrient rich foods, either by making these food types cheaper through efficient production and distribution so that they are affordable to the poor or by encouraging poor people to grow these foods so that they can have an opportunity to consume from own production.

Further research is important to identify ways to link agriculture and nutrition, so as to propose concrete evidence-based interventions that will have an impact on nutritional status of children and the general population, especially related to micronutrients. To fully understand the impacts of specific agricultural interventions on nutritional achievements, both household and individual level research are necessary.

References

- Berhane, G., J. Hoddinott, N. Kumar, A. Seyoum Taffesse (2011). “The Impact of Ethiopia’s Productive Safety Nets and Household Asset Building Programme: 2006-2010.” International Food Policy Research Institute, Washington, DC.
- Central Statistical Agency, Addis Ababa, Ethiopia and ICF International, Calverton, Maryland, USA (2011) Ethiopia 2011 Demographic and Health Survey : Final Report, March 2012
- CSA (Central Statistical Agency of Ethiopia) (2012). Household Consumption Expenditure (HCE) Survey 2010/11: Analytical Report. October 2012, Addis Ababa, Ethiopia.
- CSA (Central Statistical Agency of Ethiopia) (2012). Report on Area and Crop Production forecast for Major Crops (For Private Peasant Holding, Main Season). December 2012, Addis Ababa, Ethiopia
- CSA (Central Statistical Agency of Ethiopia) (2012). Ethiopia Demographic and Health Survey 2010.Preliminary Report.
- CSA(Central Statistical Agency of Ethiopia) (2012). Ethiopian Welfare Monitoring Survey 2011: Summary report April 27, 2012. Addis Ababa, Ethiopia.
- CSA (Central Statistical Agency of Ethiopia) (2013) Population Projections for Ethiopia: 2007-2037. Central Statistical Agency, Addis Ababa, July, 2013
- CSA (Central Statistical Agency of Ethiopia) (2007). Household Income, Consumption and Expenditure (HICE) survey 2004/05, volume I, Analytical report. Statistical Bulletin 394. Addis Ababa.
- CSA (Central Statistical Authority of Ethiopia) (2007). Welfare Monitoring Survey 2004: Analytical report. Statistical Bulletin 339-A. Addis Ababa.
- Dev, Mahendra (2012). Agriculture-Nutrition Linkages and Policies in India. Working Paper no. 2012-006. Mumbai: Indira Gandhi Institute of Development Research, India.
- EHNRI (Ethiopian Health and Nutrition Research Institute) (2010). Nutrition Baseline Survey Report for the National Nutrition Program of Ethiopia. Addis Ababa, Ethiopia.
- FAO/WFP (2012). Crop and food security assessment mission to Ethiopia 17 April 2012. Special Report.
- Federal Democratic Republic of Ethiopia, FDRE, (2013). National Nutritional Program: June 2013-June 2015.
- Hoddinott, J (2011). Agriculture, Health, and Nutrition. Toward Conceptualizing the Linkages. Leveraging Agriculture for Improving Nutrition and Health, 2020 Conference Paper 2.
- Masset, E., L. Haddad, A. Cornelius and J. Izara-Castro (2012). Effectiveness of agricultural interventions that aim to improve nutritional status of children: systematic review. British Medical Journal. 2012; 344:d8222.
- MoARD (2009) Food Security Programme 2010-2014. Ministry of Agriculture and Rural Development. August 2009 Final.
- MoFED (Welfare Monitoring Unit, Ministry of Finance and Economic Development) (2002). Development and poverty profile of Ethiopia. March 2002, Addis Ababa, Ethiopia.
- MoFED (2013a). Development and Poverty in Ethiopia: 1995/96-2010/11. Ministry of Finance and Economic Development. June 2013, Addis Ababa, Ethiopia
- MoFED (2013b). National Economic Accounts Statistics of Ethiopia: estimates of the 2010/11 base year series (2003 Ethiopian fiscal year). Ministry of Finance and Economic Development, National Economic Accounts Directorate. April 2013, Addis Ababa, Ethiopia.
- MoFED (Development Planning and Research Department, Ministry of Finance and Economic Development) (2008). Dynamics of Growth and Poverty in Ethiopia. Addis Ababa, Ethiopia.

- MoFED (Ministry of Finance and Economic Development) (2007). Ethiopia: Building on Progress: A Plan for Accelerated and Sustained Development to End Poverty (PASDEP). Annual Progress Report 2006/07. Addis Ababa, Ethiopia.
- MoFED (Ministry of Finance and Economic Development) (2009). Ethiopia: Building on Progress: A Plan for Accelerated and Sustained Development to End Poverty (PASDEP). Annual Progress Report 2007/08. Addis Ababa, Ethiopia.
- MoFED (Ministry of Finance and Economic Development) (2010). Growth and Transformation Plan (GTP) 2010/11-2014/15. Addis Ababa, Ethiopia.
- MoFED (Ministry of Finance and Economic Development) (2010). Ethiopia: Country Report on the Implementation of the Brussels Program of Action (BPOA). Addis Ababa, Ethiopia.
- MoFED. (2008). Dynamics of growth and poverty in Ethiopia (1995/96-2004/05). Development Planning and Research Department, Ministry of Finance and Economic Development. April, 2008, Addis Ababa, Ethiopia.
- Save the Children UK (2009) 'Ethiopia National Nutrition Strategy: Review and Analysis of Progress and Gaps, One Year On'. London: Save the Children UK.

This Working Paper has been produced as part of the AgriDiet project, funded and facilitated by Irish Aid and the Higher Education Authority of Ireland under the programme of Strategic cooperation. However, the ideas, opinions and comments therein are entirely the responsibility of the author and do not necessarily represent Irish Aid or HEA Policy.



The Policy Environment for Linking Agriculture and Nutrition in Ethiopia

Tassew Woldehanna

Associate Professor at Addis Ababa University

Senior Research Fellow at Ethiopian Development Research Institute

An AgriDiet Working Paper

This working paper may be reproduced by any method without fee for teaching and non-profit purposes, but not for resale. Formal permission and reference is required for all such uses, but normally will be granted immediately. For copying in any other circumstances, or for reuse in other publications, or for translation or adaptation, prior written must be obtained from the publisher.

AgriDiet documents are available on the AgriDiet website – see link below. Available from

Dr Nick Chisholm,

Department of Food Business and International Development,

University College Cork, College Road, Cork, Ireland.

Telephone +353 21 4903347

e-mail – n.chisholm@ucc.ie

Web – <http://agridiet.ucc.ie/>

AgriDiet is a 3 –year joint research project between University College Cork, University College Dublin, the Ethiopian Development Research Institute, Haramaya and Mekelle Universities in Ethiopia, Sokoine and St Augustine’s Universities in Tanzania and the Institute of Development Studies in the UK, aimed at improving the understanding of linkages between agriculture and nutrition in Ethiopia and Tanzania

