

# **REPORT ON THE ETHIOPIAN ECONOMY**

**2015**

***Prospects and Challenges of  
Structural Transformation in Ethiopia***

**Ethiopian Economics Association  
(EEA)**

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## Foreword

The Ethiopian Economic Association is pleased to present the 2015 report on the Ethiopian Economy, which has been written on the theme of “**Prospects and Challenges of Structural Transformation in Ethiopia**”. It is now well over 15 years since the Ethiopian Economics Association started producing annual reports on the Ethiopian economy critically analyzing the economic performance both at the macro and sectoral levels using the available official data.

Following the formats of the previous years this report has also got two parts. Part one focuses on a broader review of the macroeconomic situation and the performance of the economy at the sectoral levels for the period 2013/14 and attempted to provide professional assessment of the existing policies and strategies and recommends new policy directions wherever appropriate. Part two of the Report discusses some of the issues related to the selected thematic focus area of the year titled “*Prospects and Challenges of Structural transformation in Ethiopia*” which will have significant implications to the efforts of bringing the country into the club of middle income countries by 2025. As before, the publication of this report comes at timely moment and provides a valuable contribution to the understanding of Ethiopia’s recent transformation efforts.

Economic transformation can be defined as a dynamic process through which a country’s economy, society and institutions modernize and move to more developed levels. Although no single theory fully describes the transformation process, it can generally be described by several *stylized facts* that almost universally characterize the outcome of this process. First, economic structure changes significantly during the transformation period, when industrialization triggers a rapid increase in the share of manufacturing in the economy, and a concomitant decline in agriculture’s share. Second, the share of the total labor force employed in the agricultural sector falls, while that in other economic sectors rises. However, that does not imply an absolute decline in the number

of laborers employed in the agricultural sector, as the share of agricultural employment in the total labor force can decline relatively slowly compared with declines in the agricultural sector's GDP share in the economy. Third, within this process, the center of the country's economy shifts from rural areas to cities, and the degree of urbanization significantly increases.

Economic transformation involves moving labour from low to higher productive activities. This includes between sectors to higher value activities (for example, from agriculture to manufacturing) and within sectors (for example, from subsistence farming to high-value crops). The impressive economic growth witnessed over the last one decade provides a solid foundation for transforming the economy for better jobs and shared prosperity. An essential part of economic transformation is acquiring the capability to produce a widening array of goods and services and then choosing which ones to specialize in based on international relative prices. It is widely accepted that poverty reduction and economic growth cannot be sustained without economic transformation and productivity change.

Over the last several years, the economy grew by nearly 10 per cent per annum according to official government data putting it as one of the fastest growing economies in the world. The recent economic growth in Ethiopia has been the consequence of political and macroeconomic stability, improved domestic policies, and favorable terms of trade for a number of export commodities. The global environment has also been conducive for growth, and the emergence of several large developing countries (e.g. China and India) has significantly changed the international landscape. Globalization has begun to link growth in these and other developing countries with further development in Ethiopia, with the result that Ethiopia is now experiencing both new opportunities and new challenges. The Ethiopian government has been engaged in a major effort to transform the economy as reflected in the Growth and Transformation Plan (GTP) and place the country on a trajectory to become a middle income economy by the year 2025.

However, moving from a low- to a middle-income status requires more than an increase in per capita income; it involves transformation as an important part of development process. Thus, transformation involves the *modernization* of a country's economy, society and institutions. While the modernization of society and its institutions often occurs concurrent with successful economic transformation, it remains difficult to integrate these changes into a single, consistent analytic framework. Understanding how to accelerate and support the transformation efforts in Ethiopia poses an important challenge to policy makers and economists. In view of this, the Association has embarked on the timely issue of transforming the Ethiopian economy in this year's Report with the aim of providing lessons that can be tailored to the country's endowments, constrains and opportunities and promote the future success of the transformation. To better understand alternative paths of economic transformation for the Ethiopian economy, the Report examines the experience of some developing countries that have already reached or are on track to reach middle income status.

I hope that the Report would be useful to all readers including policy makers, private business people, civil society organizations, the academia, the media, the international communities and the general public.

Finally, I would like to express my appreciation to all those people whose contribution has made this Report possible.



Alemayehu Seyoum Taffesse (DPhil)  
President  
Ethiopian Economics Association



## Acknowledgement

The production of this report is the result of a genuinely collaborative effort of many people. The Ethiopian Economics Association wishes to gratefully acknowledge the valuable contributions made by everyone who was involved in this team effort. The overall work has been led by Dr. Assefa Admassie, who is the Principal Research Fellow at the Ethiopian Economic Policy Research Institute. The chapter on the Macroeconomic Developments and the chapters on the thematic issue “*Prospects and Challenges of Structural transformation in Ethiopia*” were written by a team of researchers led by Dr. Seid Nuru Senior Research Fellow and consisting of Mr. Amin Abdella and Mr. Gashaw Desalegn. They deserve great appreciation and special recognition for their immense intellectual contribution and hard work.

The chapters on the Ethiopian Agriculture over the GTP period: Assessment of Performance, Progress, Challenges and Opportunities has been written by Dr. Samuel Gebre-Selassie. Amin Abdella prepared the chapter on the Manufacturing Industry: Recent Developments and Trends in the Structural Change within the Sector. Finally the Chapter on the Social Protection of Older Persons in Ethiopia is written by Dr. Degnet Abebaw and Fitsum Zewdu. Their dedication and hard work made this report possible and their contribution is highly appreciated and recognized.

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# Chapter I

## Macroeconomic Performance

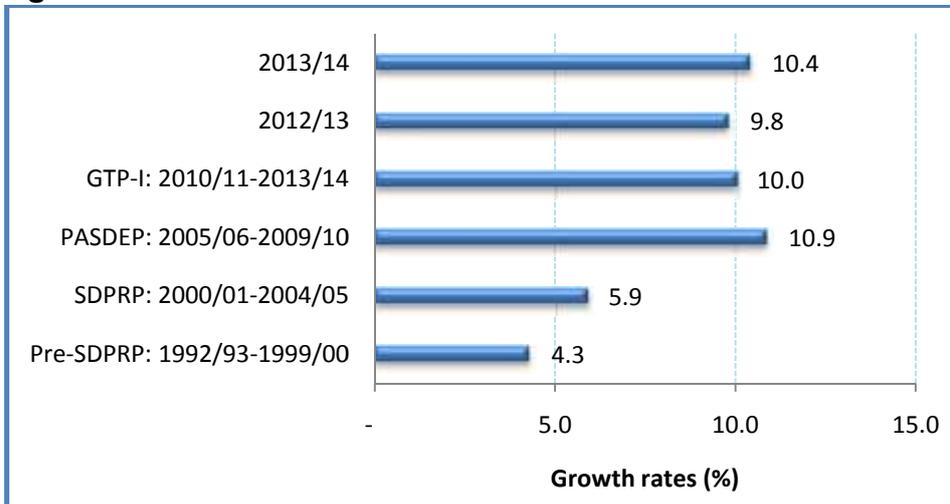
### I.1 Growth

*According to the official figures from the Ministry of Finance and Economic Development (MOFED), Ethiopia's GDP stood at 1.047 trillion Birr in the fiscal year 2013/14. This is equivalent to a per capita GDP of 12,039 Birr in nominal terms or about US\$ 634 at current official rates. The high growth momentum of the Ethiopian economy continued in the fiscal year 2013/14. Real GDP grew at a rate of 10.4 percent in the fiscal year, slightly lower than the target of GTP. The service sector has still dominated the spur in growth despite the upsurge in the growth momentum of the industrial sector for the first four years of GTP. While the contribution of agriculture to growth tended to decline in favor of the industrial sector, the main driver of the industrial sector (and the leading contributor to GDP growth) was the construction subsector accounting for 2.8 percentage points (or 27 percent) of the 10.4 percent growth in GDP in the fiscal year 2013/14. Overall, four major subsectors of the economy, namely construction, wholesale and retail trade, crop production, and hotels and restaurants were the major drivers of the economy accounting for 8.3 percentage points (about 80 percent of) the 10.4 percent growth in GDP in the fiscal year 2013/14. A viable start of the journey by the Ethiopian economy towards structural transformation has yet to see the robust contribution of the manufacturing sector to growth.*

The fiscal year 2013/14 marks the fourth implementation year of the Growth and Transformation Plan (GTP) of Ethiopia. According to the national income accounts of the Ministry of Finance and Economic Development, nominal GDP stood at 1.047 trillion Birr. This translates in to a per capita GDP of 12,039 Birr which is equivalent to about US\$ 634 at the current official exchange rate. Calculated at 2010/11 constant market prices, per capita GDP of Ethiopia stood at 7,813 Birr, about US\$ 411. This is about twice the level of per capita GDP Ethiopia had in 2005.

According to the Human Development Reports of the United Nations Development Program (UNDP), Ethiopia's national income in 2013 measured by 2011 PPP \$ was 1,303. With this level of income, the nation was placed at the rank of 176 out of 187 countries. In the same year, Ethiopia was ranked 173rd out of 187 countries in human development index (HDI). Though Ethiopia has one of the lowest indices in terms of human development, the rate of improvement is encouraging. The rate of growth in Ethiopia's HDI is the highest among the 187 countries with an average annual rate of improvement of 3.35 percent. The high rate of growth in HDI is shared by Rwanda with a similar 3.35 percent. Angola and Mozambique follow with rates of growth of HDI of 2.6 percent and 2.49 percent, respectively.

Real GDP grew by 10.4 percent in the fiscal year 2013/14. Even though this rate is slightly lower than the 11.2 percent target of the GTP, it is still robust and one of the fastest rates in the global economy. The average rate of growth of GDP for the first four years of GTP was 10 percent, only a 1.2 percentage points lower than the GTP target.

**Figure I.1: Growth Rates in GDP**

Source: EEA computations using data from MOFED.

During the fiscal year, all the three major sectors, namely agriculture, industry, and services performed well. Value-added in the agriculture sector grew by 5.4 percent. This is lower than the GTP target by 3.2 percentage points. Given the fact that agricultural activities are less diversified, the 5.4 percent growth is a fair rate for a crop dominated sector. The average rate of growth of the value-added in the agricultural sector for the period 2010/11-2013/14 was 6.6 percent. This contrasts with the GTP target of 8.6 percent for the period.

The industrial sector grew at a rate of 21.2 percent in the year 2013/14. Even though this rate is lower than the 23 percent rate of growth targeted by the GTP, the average rate of growth of the value-added in the industrial sector for the first four years of the GTP is greater than what was planned by the GTP. Value-added in the industrial sector expanded at an average rate of 20.5 percent against the GTP target rate of 19.1 percent. Nevertheless, to conclude whether this is a sign of achievement towards structural transformation

depends on the performance of the subsectors, particularly the manufacturing subsector.

**Table I.1: Growth Performance of the GTP**

	Base	GTP Target		Actual	
	2009/10	2010/11-13/14	2013/14	2010/11-13/14	2013/14
Agriculture	7.6	8.6	8.6	6.6	5.4
Industry	12.7	19.1	23	20.5	21.2
Service	12.4	9.5	11	10.6	11.9
GDP	10.2	11.2	11.2	10.0	10.4

*Source: Ministry of Finance and Economic Development*

The service sector kept on growing in 2013/14. Value-added in what is traditionally called the service sector grew at 11.9 percent during the fiscal year. This rate is higher than the GTP target by 1.4 percentage points.

The agriculture sector has been overtaken its lead in the economy by the service sector. Its static contribution to the GDP was about 40 percent in the fiscal year 2013/14. The service sector, however, accounted for about 46 percent of the GDP in the same year. The industrial sector showed a 4.4 percentage point increase in its contribution to the GDP over the first four years of the GTP period to reach 14.2 percent in the fiscal year 2013/14.

The transformation in the structure of the economy, particularly from agriculture to industry, was not as fast as it was envisaged by the GTP. The static contribution of agriculture to the GDP is still 2.1 percentage points higher than the target of GTP in 2013/14. Despite the fast growth in the construction sector, the relatively slower growth and small base in the other subsectors limited the share of the industry sector in the GDP to lag behind the GTP target by 2.7 percentage points.

**Table 1.2: Structure of the Ethiopian Economy**

	2009/10	2013/14	
	Base	GTP target	Actual
Agriculture	45.2	37.8	39.9
Industry	9.8	16.9	14.2
Service	45	45.3	45.9

Source: Ministry of Finance and Economic Development

Looking at the patterns of the sectors in their contribution to GDP growth, the service sector still dominated the spur in GDP growth in 2013/14 in which 5.3 percentage points (or 51.3 percent) of the 10.4 percent growth in GDP were the contribution of the service sector. During the first four years of the GTP period, the industrial sector gained momentum in its dynamic contribution to GDP. It accounted for a quarter of the growth in GDP; that is, 2.6 percentage points out of the 10.4 percent growth. It should however be noted that the major driver of the growth in the industrial sector has been the construction subsector.

**Table 1.3: Dynamics of the Structure of the Economy**

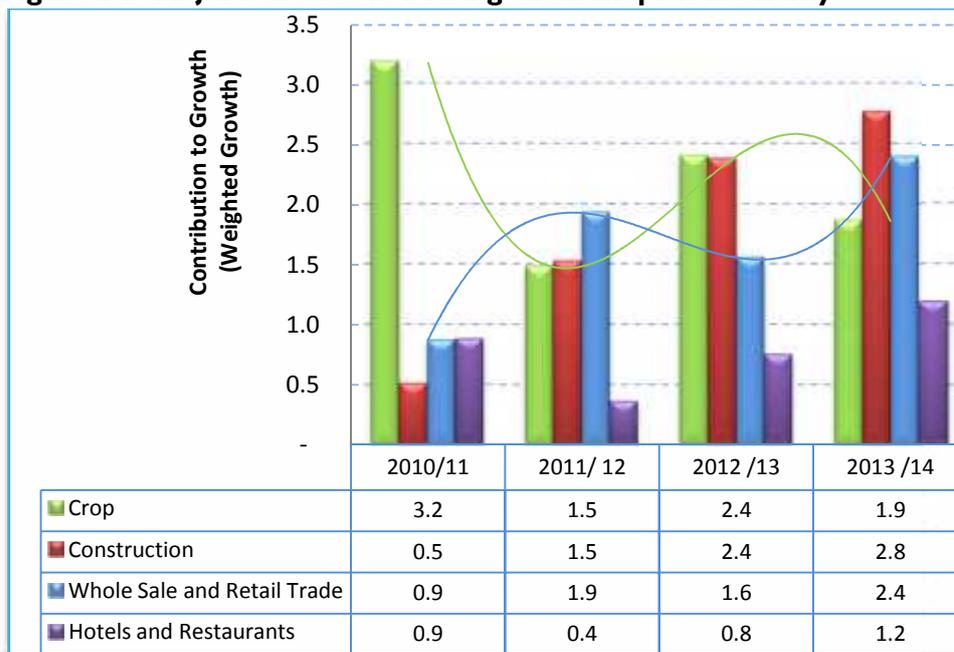
	Agriculture			Industry			Service			
	Share in GDP	Growth Rate								
<b>1992/93-1999/00</b>	57.8	2.4	31.6	8.6	6.3	12.2	33.6	7.5	56.2	
<b>2000/01-2004/05</b>	51.0	5.6	48.2	10.0	7.9	13.2	39.0	5.9	38.6	
<b>2005/06-2009/10</b>	47.9	8.3	36.4	9.7	10.1	9.0	42.4	14.1	54.6	
<b>2010/11-2013/14</b>	42.2	6.6	27.6	12.2	20.6	25.0	45.5	10.9	47.5	
<b>2012/13</b>	41.8	7.1	29.3	12.9	24.1	30.8	45.3	8.9	40.0	
<b>2013/14</b>	39.9	5.4	20.4	14.2	21.2	28.3	45.9	11.9	51.3	

Source: EEA calculations using data from MOFED.

In contrast, the dynamic contribution of the agriculture sector to GDP fell to 27.6 percent in the first four years of GTP. And in 2013/14 it decreased to 20.4 percent from its share of 36.4 percent during the period of the Plan for Accelerated and Sustained Development to End Poverty (PASDEP).

In general, four major subsectors of the economy, namely construction, wholesale and retail trade, crop production, and hotels and restaurants dominated the growth momentum in the economy accounting for 8.3 percentage points (about 80 percent of) the 10.4 percent growth in GDP in the fiscal year 2013/14. The construction subsector has become the leading sector in its contribution to growth. It accounted for 27 percent of the growth in GDP in 2013/14 in contrast to the 18 percent share of the crop subsector.

**Figure 1.2: Major Subsectors Driving the Ethiopian Economy**

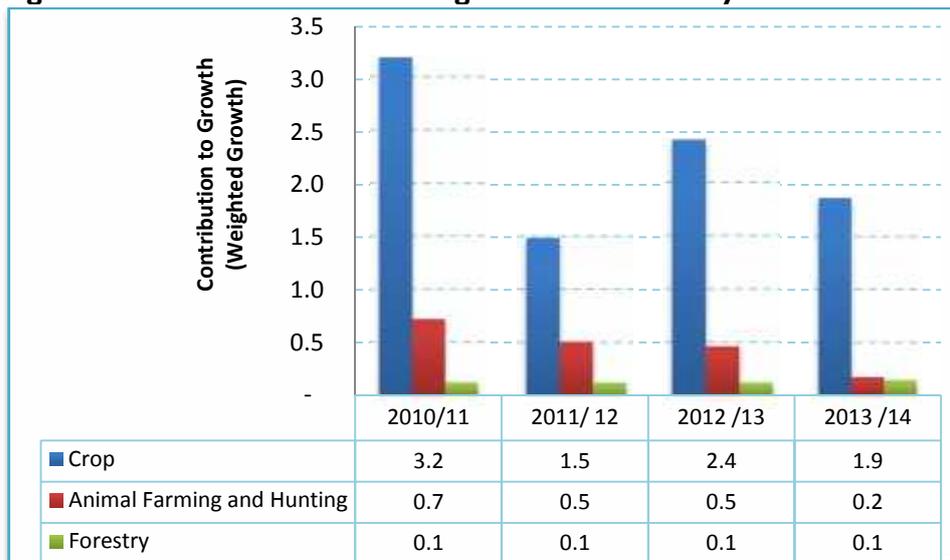


Source: EEA staff computations using data from MOFED.

### 1.1.1 Agriculture

The Growth and Transformation Plan has stipulated that agriculture would "continue" to be the major source of growth in Ethiopia over the plan period. It is undeniable that agriculture is still the mainstay of over 80 percent of the population, and the decent growth in agricultural produce over the last decade has helped many to be lifted out of poverty. Value-added in the sector grew at an average rate of 6.6 percent in the period 2010/11-2013/14. There is a deceleration in its pace as growth in the sector during the PASDEP period was as high as 8.3 percent. The year 2013/14 also marks even a further deceleration in the performance of the sector as value-added grew at a rate of 5.4 percent. Even this rate can be considered robust for a sector dominated by small holders operating for subsistence.

**Figure 1.3: Performance of the Agricultural Sector by Subsector**



Source: EEA staff computations using data from MOFED.

While the rate of growth in the agricultural sector has been considered to be significantly high so far, its role in the transformation process can be fast challenged unless activities in the sector are diversified. Crop production still dominated the growth in the agricultural sector. The subsector accounted for 86.4 percent of the growth in the total value-added in the sector in the fiscal year 2013/14. Crop production has biological and geographic limits to its growth so that surplus production in the sector in the face of a large rural population would eventually be difficult. An important avenue to make the Ethiopian agriculture contribute to growth is diversification of rural activities to commercial crop production, modern livestock production, fishery, and agriculture-based sideline activities such as rural enterprises.

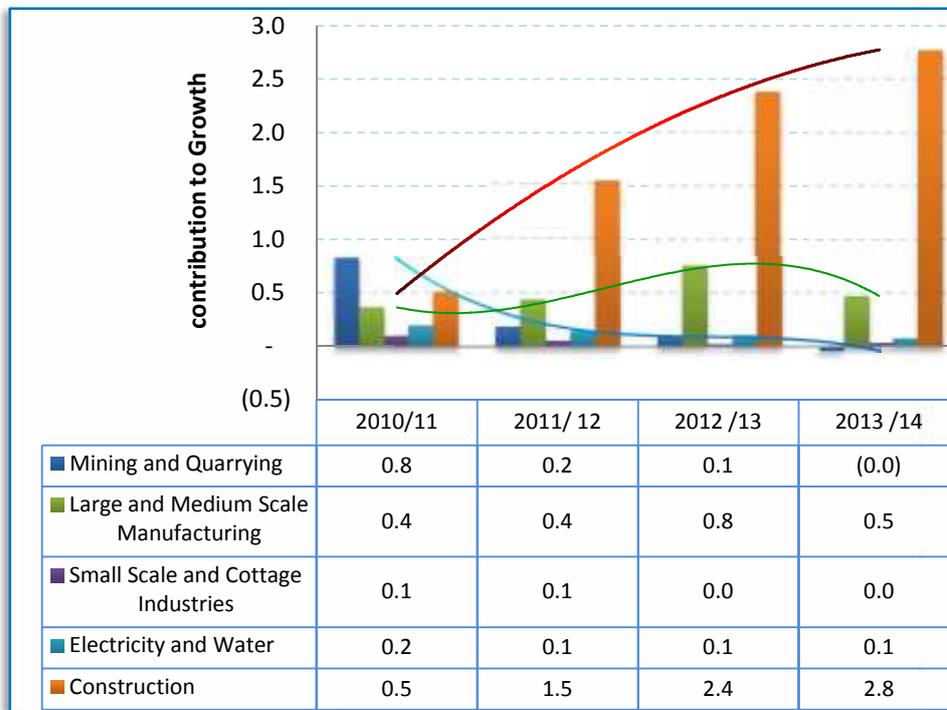
### **1.1.2 Industry**

The industrial sector made a major change in value-added expanding at a rate of 20.6 percent in the first four years of GTP. This contrasts with the 10.1 percent growth in the value-added of the sector during the period of PASDEP. The high growth performance of the sector also continued to the fiscal year 2013/14 as value-added in the sector expanded at a rate of 20.1 percent.

The contribution of such expansion in the industrial sector in the process of structural transformation needs to be evaluated against subsector dominated growth. During the period 2010/11-13/14, the construction subsector dominated the momentum in the expansion of the industrial sector. In 2013/14, the subsector became the leading contributor of the growth in value-added in the industrial sector as well as GDP, replacing crop production in the latter case. During the fiscal year, the construction subsector accounted for 82.4 percent of the growth in the total value-added in the industrial sector and a quarter of the growth in GDP.

In contrast to the high growth performance in the construction subsector, the manufacturing sector which is critical for structural transformation remained relatively less vibrant. In the first four years of GTP, large and medium scale manufacturing accounted for only 5.1 percent of the growth in GDP. That is, it has a contribution of 18.6 percent to the growth in the industrial sector. The performance of the small scale and cottage industries was not in particular significant as a result of which the overall contribution of the manufacturing sector to the growth in GDP during the period remained to be 5.4 percent.

**Figure 1.4: The Contribution of Subsectors in the Growth of Real Industrial GDP**



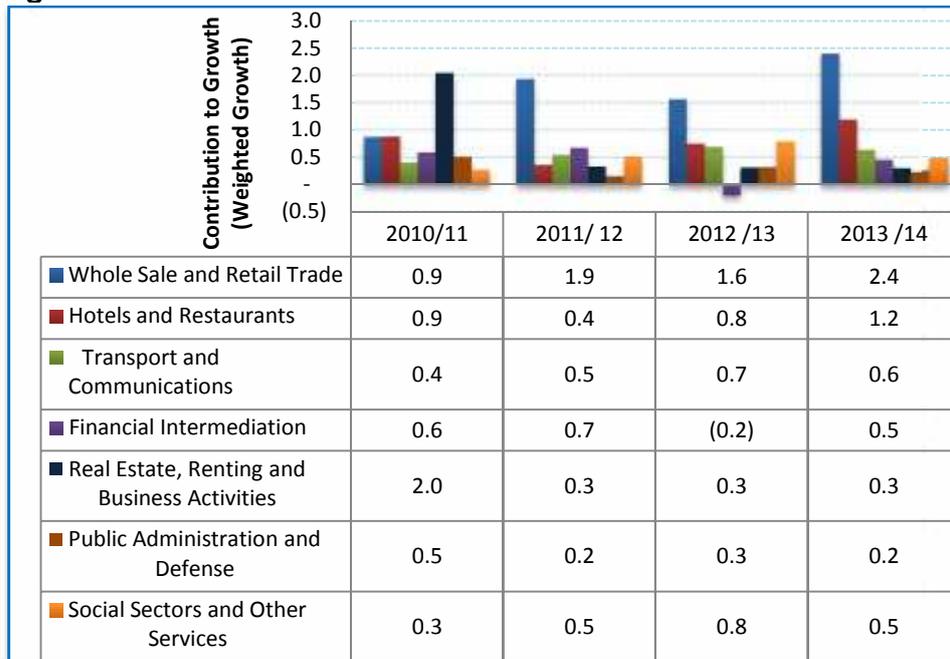
Source: Ministry of Finance and Economic Development

The mining and quarrying subsector had a relatively better performance during 2009/10 and 2010/11 probably due to the favorable international prices for gold. Its contribution to growth has been declining since then. This is a typical sign of the mineral industry and a good reason not to put much hope on it for transformation.

### 1.1.3 Services

Wholesale and retail trade has been the second major driver of growth after the construction subsector in recent years accounting for about 17 percent of the growth in GDP during the period. The hotels and restaurant subsector follows as the second contributor to growth in the service sector and the fourth contributor to GDP growth after the crop subsector.

**Figure 1.5: Growth Performance of the Service Sector**



Source: EEA staff computations using data from MOFED.

On the other hand, the financial, and transport and telecommunication subsectors which are believed to have an important role in facilitating growth in the manufacturing sector through technological transfer and availing critical inputs tend to perform at less vibrant rates.

## 1.2 Saving and Investment

*Domestic resource mobilization has been one of the major targets of GTP. Ethiopia has made significant achievements in terms of savings mobilization and capital accumulation. Gross domestic saving and gross fixed investment rates reached 22.5 percent, and 40 percent of GDP, respectively, in 2013/14. Nevertheless, the country needs to resort to policies towards efficient utilization of capital as sustaining growth by expanding public investments beyond this already high rate is challenging.*

One important area of achievement in the transformation efforts of the nation is capital accumulation. Rate of gross domestic saving increased to 22.5 percent of GDP in 2013/14 from its meager rate of 6 percent during the period of PASDEP. The high rate in savings was paralleled by even higher rate of expansion of gross fixed investment to reach at 40 percent of GDP in 2013/14. As a result of the high rate of expansion of gross fixed investment, the resource gap was not significantly reduced despite the high rate of gross domestic saving. The resource gap stood at 17.8 percent of GDP in the 2013/14 fiscal year. The GTP had envisaged a reduced rate of resource gap of 14.5 percent of GDP for the fiscal year.

The high rate of resource gap is the mirror image of the current account balance where exports fell far behind the nation's imports. In 2013/14, exports of goods and non-factor services stood at 11.7 percent of GDP, a little more than half of the GTP target of 20.8 percent. Value of imports of goods and non-

factor services on the contrary reached 29.5 percent of GDP in fiscal year. In fact, this rate is less than the GTP target of 35.5 percent.

**Table I.4: Expenditure on GDP (as percent of GDP)**

Period	Absorption			Current Account Balance					
	Total	Private Consumption	Government Expenditure	Gross Fixed Investment	Gross Domestic Savings	Resource Gap	Exports	Imports	
2005/06-09/10	120.9	83.0	11.2	26.7	5.9	-20.9	13.8	34.0	
2010/11-13/14	116.7	71.7	8.7	36.3	19.6	-16.8	13.7	30.4	
2010/11	114.9	72.4	10.3	32.1	17.3	-14.9	16.7	31.6	
2011/12	117.9	72.5	8.3	37.1	19.2	-17.9	13.8	31.6	
2012/13	116.6	72.5	8.3	35.8	19.2	-16.6	12.5	29.1	
2013/14	117.7	69.5	8.0	40.3	22.5	-17.8	11.7	29.5	

Source: Ministry of Finance and Economic Development and EEA Computations

Tax mobilization efforts and other social mobilization schemes such as the Great Ethiopian Renaissance Dam Bond, and the "save-for-housing" campaign of the government are believed to have contributed to the high rate of savings. While such efforts are desirable, continuity of voluntary savings require fundamental economic instruments that affect the behavioral fundamentals of economic agents. The high rate of capital accumulation also requires a critical assessment. Such high rate of investment needs to have been accompanied by a high degree of transformation and high level of per capita income. The importance of accumulation in long-term growth before an economy gets into what is called steady-state level is that each incremental change in rates of investment brings about additional level of income. Raising rates of investment from 40 to 50 percent is more difficult than raising it from 20 to 30 percent. Thus, the country may require redirecting its policies towards efficiency in

which capital can be redirected to sectors where it can be exploited to its best capacity. This may include a sectoral shift as well as a shift from public investment- led growth to private investment-led growth.

### 1.3 Price Developments

*Official figures show inflation remained at single digit level in 2013/14 despite the continued expansion of broad money in particular domestic credit claimed by the government. A month-to-month annualized general inflation was 8.5. Food inflation and non food inflation during the period were 6.2 percent and 11 percent respectively. With high level of prices accumulated over the last decade, the adverse impact of the 8.5 percent of rate of inflation is still felt by consumers.*

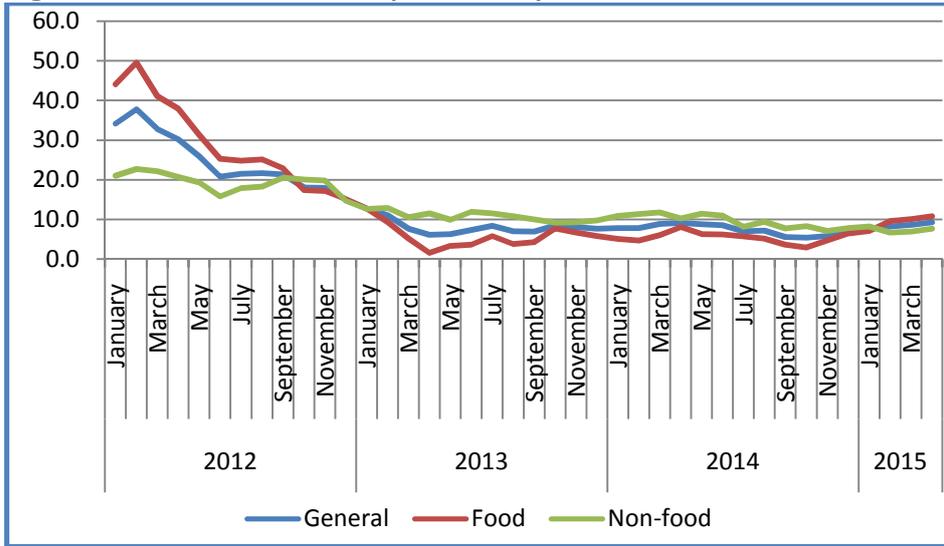
If long run growth is to be achieved macroeconomic stability is a prime precondition. Price stability is one of the main indicators of the healthy operation of an economy. Often macroeconomic stability is gauged by price stability. High inflation has the power to distort an economy. For instance it affects saving negatively, erodes international competitiveness, transfers wealth from the poor to the rich thereby pushing many to poverty.

Over the last ten years inflation has been a major problem in the Ethiopian economy. Causes of inflation have been subjects of contention among policy makers, the general public and the academia. A tacit consensus seems to be held on the fact that expansionary monetary policy takes the major share in driving inflation in Ethiopia. The persistent nature of the inflation that had been observed in Ethiopia tends to rule out supply-side variables as major drivers.

GTP was announced with the promise of arresting inflation to a single digit. However, the first year of the implementation of GTP saw another round of

high inflation. A moderate deceleration of the rate of expansion of money supply partly helped reduce the high rate of inflation in the following year.

**Figure 1.6: Annual Inflation (2012-2014)**



General price level as measured by the consumers price index rose by 8.5 percent in 2013/14. Similarly food inflation and non food inflation rose by 6.2 percent and 11 percent respectively. This rate indicates a reversal of the momentum of galloping inflation in the country that was observed during 2008/09 and recurred in 2012/13. Nevertheless, this inflation though generally dubbed as single digit has still the power to compromise consumers’ welfare due to the fact that price levels have already been high.

Even though some claim that prudence in monetary and fiscal policies helped arrest inflation, the trends in money supply and fiscal discipline may not seem to confirm it if one considers the broad definition of money. Money supply (broad money) has expanded by 26.53 percent which was higher than the preceding

year (2012/13). Nevertheless, the quasi money rather than the narrow money has explained much of the expansion in the money supply thus probably putting less pressure on the price levels.

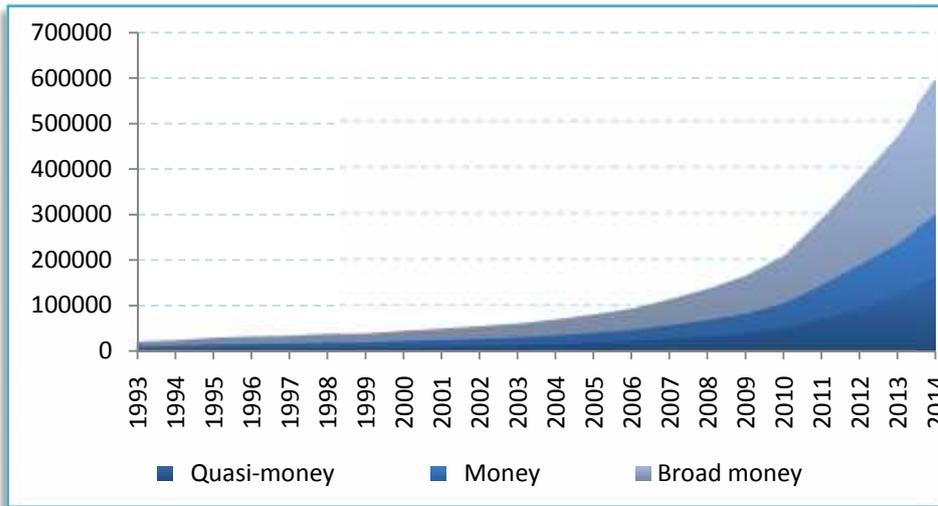
#### **I.4 Monetary Developments**

*During the fiscal year of 2013/014, broad money expanded at a rate of 26.5 percent. Quasi money from the liability and domestic credit from the asset sides of the money supply contributed to the expansion in broad money. Quasi money and domestic credit have expanded by a rate of 35.8, and 28.4 percent, respectively, in the year under review. However, narrow money, which is the sum of currency in circulation and demand deposit, has shown a deceleration from previous aggressive rate of expansion that was believed to have fueled the inflationary pressures observed during the period of PASDEP and the second year of GTP. The high rate of expansion of quasi money in particular seems to be consistent with the nation's effort to mobilize domestic resources. The seemingly paradoxical situation of lower rate of inflation in the face of even higher rate of expansion in the money supply could partly be explained by the fact that the expansion in broad money was more explained by quasi money than expansion in narrow money.*

Broad money continued to expand growing at a rate of 26.53 percent in the fiscal year 2013/14, a rate higher than what was observed in the preceding year by 2.28 percentage points. Narrow money and quasi money which account for 18.32 and 8.20 percent of broad money grew by 16.82 and 35.76 percent respectively. The expansion in quasi money is consistent with the country's effort to mobilize domestic resource, through various schemes [See details on the fiscal developments section of this report]. Narrow money which is normally associated with inflationary trends in the past decelerated significantly expanding at 16.8 percent during the fiscal year. This is particularly in sharp contrast to the

45 percent rate of upsurge of narrow money observed in 2010/11. That was probably part of the explanation for the relatively lower rate of inflation recorded in the year despite the continued expansion in broad money.

**Figure 1.7: Trends in the Value of Money and Narrow Money (Millions of Birr)**



On the asset side of the money supply, net foreign asset in the review period (2013/14) increased only marginally by (1 %) and its contribution to the growth of broad money is thus insignificant. Though its volatility is incessant the National Bank of Ethiopia maintained accumulating approximately the same level of net foreign asset in the review period with that of the previous year. This might be in line with the objective of the National Bank of Ethiopia to holding back the recent inflationary pressures and ensuring a single digit rate of inflation.

Domestic credit had consistent and significant growth over the past years. In the fiscal year 2013/14, it increased by 28.42 percent- 2 percentage points lower than the average rate of expansion for the last four years. Claims on

government has in general a declining trend over the past four years while that of other sectors have expanded significantly. However, it showed a 21 percent increase in the period under review.

**Table 1.5: Growth Rates of Monetary aggregates**

Year	2000/01- 04/05	2005/06- 2009/10	2011	2012	2013	2014	2010/11- 13/14
<b>Foreign assets (net)</b>	<b>25.83</b>	<b>18.06</b>	<b>104.25</b>	<b>-28.36</b>	<b>14.73</b>	<b>0.94</b>	<b>22.89</b>
National Bank	44.93	17.79	113.58	-35.31	15.96	8.83	25.76
Commercial Banks	9.73	26.09	92.09	-18.28	13.32	-8.31	19.71
<b>Domestic credit</b>	<b>9.42</b>	<b>21.13</b>	<b>29.82</b>	<b>39.49</b>	<b>23.44</b>	<b>28.42</b>	<b>30.29</b>
Claims on Government	8.02	9.11	-13.21	-24.76	1.89	21.24	-3.71
National Bank	15.90	16.23	15.21	0.04	22.13	15.95	13.33
Commercial Banks	36.49	35.75	163.50	42.67	40.46	12.48	64.78
Claims on other sectors	12.19	31.14	49.72	56.71	26.21	29.16	40.45
<b>Broad money</b>	<b>12.67</b>	<b>21.08</b>	<b>39.21</b>	<b>30.28</b>	<b>24.24</b>	<b>26.53</b>	<b>30.06</b>
<b>Money</b>	<b>10.34</b>	<b>19.84</b>	<b>45.27</b>	<b>24.52</b>	<b>20.98</b>	<b>16.82</b>	<b>26.90</b>
Currency outside banks	11.31	19.45	34.57	18.30	18.51	16.40	21.95
Demand deposits	9.66	20.44	54.44	29.17	22.66	17.10	30.84
<b>Quasi-money</b>	<b>15.75</b>	<b>22.45</b>	<b>33.09</b>	<b>36.62</b>	<b>27.52</b>	<b>35.76</b>	<b>33.25</b>
Savings deposits	15.79	22.75	34.34	27.81	28.84	37.20	32.05
Time deposits	15.58	21.66	17.95	158.47	18.49	25.05	54.99
Other items (net)	11.14	14.57	68.24	-13.65	10.82	9.91	18.83

Source: EEA computation using NBE data

High inflation was persistent before the GTP period, during PASDEP. However the move of the government during the early years of GTP shows that it was against curbing the raging inflation where money supply was believed to have been responsible for it. The 30 percent rate of expansion of broad money observed during the past four years of GTP exceeds the average rate of

expansion that was believed to have fueled the inflation during the period of PASDEP. Nevertheless the fact that quasi money drove the expansion on broad money partly resolves the seemingly paradox of low rate of inflation in the face of aggressive monetary expansion.

## **I.5 External Sector Developments**

*The fiscal year 2013/14 showed a robust positive balance in the services account but deterioration in the trade balance. The weak performance in export of goods and the expansion in imports of goods resulted in a deterioration of the trade balance by 24.8 percent compared to the preceding fiscal year. The surpluses in the service and capital accounts could not offset the deficit in the trade balance resulting in a deficit in the overall balance of payment.*

*The last three years were not in particular favorable for coffee export as its value further shrank by 4.3 percent. The total value of exports of oilseeds and pulses surpassed the share of coffee in the total export during 2013/14, probably for the first time compensating for the drop in coffee export. The most noticeable feature of the Ethiopian trade in the past decade in general is the absence of change in the structure of export despite the high growth in GDP.*

*Consistent with the tenets of GTP, capital goods have continued to dominate the value of imports accounting for a third of the total imports and expanding at a rate of 26 percent in the fiscal year under review.*

### **Balance of Payments**

In the review period (2013/14) balance of payments deficit deteriorated by 14 times of the previous fiscal year. The balance was USD 91.4 million, higher than USD 6.5 million deficits registered in the preceding year. Due to high growth in merchandise imports (19.7 percent) and low performance in exports (5.6 percent), trade deficit increased by 10.5 billion USD which is a 24.8 percentage growth relative to the preceding year.

Table I.6: Balance of Payments in (Millions of USD)

Particulars	2010/11	2011/12	2012/13	2013/14	Percentage Change		
	(1)	(2)	(3)	(4)	(2/1)	(3/2)	(4/3)
<b>Trade Balance</b>	<b>-5,506.2</b>	<b>-7,908.5</b>	<b>-8,386.1</b>	<b>-10,467.2</b>	<b>-43.6</b>	<b>-6.0</b>	<b>-24.8</b>
<b>Exports, f.o.b.</b>	<b>2,747.1</b>	<b>3,152.7</b>	<b>3,081.2</b>	<b>3,254.8</b>	<b>14.8</b>	<b>-2.3</b>	<b>5.6</b>
Coffee	841.8	833.0	746.6	714.4	-1.0	-10.4	-4.3
Other	1,905.3	2,319.7	2,334.6	2,540.4	21.7	0.6	8.8
<b>Imports</b>	<b>8,253.3</b>	<b>11,061.2</b>	<b>11,467.3</b>	<b>13,721.9</b>	<b>34.0</b>	<b>3.7</b>	<b>19.7</b>
Fuel	1,659.3	2,124.7	2,163.8	2,543.2	28.0	1.8	17.5
Cereals	196.0	652.5	560.8	351.7	232.9	-14.1	-37.3
Aircraft	24.7	42.1	7.7	35.4	70.4	-81.7	359.7
Other Imports	6,373.3	8,241.8	8,735.1	10,791.6	29.3	6.0	23.5
<b>Current account balance including official transfers</b>	<b>-210.6</b>	<b>-2,799.8</b>	<b>-2,819.5</b>	<b>-4,703.7</b>	<b>-1229.4</b>	<b>-0.7</b>	<b>-66.8</b>
<b>Current account balance excluding official transfers</b>	<b>-2,071.4</b>	<b>-4,587.8</b>	<b>-4,349.4</b>	<b>-5,865.2</b>	<b>-121.5</b>	<b>5.2</b>	<b>-34.9</b>
<b>Services, net</b>	<b>688.1</b>	<b>74.9</b>	<b>459.1</b>	<b>559.5</b>	<b>-89.1</b>	<b>513.0</b>	<b>21.9</b>
Non-Factor services, net	757.6	171.1	571.7	712.2	-77.4	234.1	24.6

REPORT ON THE ETHIOPIAN ECONOMY

Particulars	2010/11	2011/12	2012/13	2013/14	Percentage Change		
	(1)	(2)	(3)	(4)	(2/1)	(3/2)	(4/3)
Exports of non-factor services	2,585.5	2,810.5	2,852.9	3,174.2	8.7	1.5	11.3
Imports of non-factor services	1,827.9	2,639.4	2,281.2	2,461.9	44.4	-13.6	7.9
Income, net	-69.5	-96.2	-112.6	-152.8	-38.4	-17.1	-35.6
Dividend	-28.1	-15.5	-1.7	-17.9	44.8	89.0	952.9
<b>Private transfers</b>	<b>2,746.7</b>	<b>3,245.8</b>	<b>3,577.5</b>	<b>4,042.5</b>	18.2	10.2	13.0
<b>Official transfers, net</b>	<b>1,860.7</b>	<b>1,787.9</b>	<b>1,529.9</b>	<b>1,161.6</b>	-3.9	-14.4	-24.1
<b>Capital account</b>	<b>2,535.5</b>	<b>2,119.8</b>	<b>3,226.4</b>	<b>3,901.6</b>	-16.4	52.2	20.9
Off. Long-term Cap., net	1,019.3	937.8	1,687.5	1,287.4	-8.0	79.9	-23.7
Disbursements	1,054.5	1,007.0	1,743.3	1,374.1	-4.5	73.1	-21.2
Amortization	35.2	69.2	55.8	86.7	96.6	-19.4	55.4
Other pub. Long-term cap.	430.3	230.8	398.9	1,082.9	-46.4	72.8	171.5
Foreign Direct Investment(net)	1,242.5	1,072.1	1,231.6	1,467.0	-13.7	14.9	19.1
Short-term Capital	-156.6	-120.9	-91.6	64.3	-22.8	-24.2	-170.2
<b>Errors and omissions</b>	<b>-1,114.8</b>	<b>-292.7</b>	<b>-413.4</b>	<b>710.7</b>	73.7	-41.2	271.9

MACROECONOMIC PERFORMANCE

Particulars	2010/11	2011/12	2012/13	2013/14	Percentage Change		
	(1)	(2)	(3)	(4)	(2/1)	(3/2)	(4/3)
<b>Overall balance</b>	1,210.0	-972.8	-6.5	-91.4	-180.4	99.3	-
<b>Financing</b>	-1,210.0	972.8	6.5	91.4			
<b>Reserves [Increase (-), Decrease (+)]</b>	-1,201.6	980.8	15.5	94.9	181.6	-98.4	512.3
<b>Central Bank (NFA)</b>	-932.2	846.5	-57.2	-48.0	190.8	-106.8	16.1
Asset	-675.2	810.0	-127.2	-95.2	220.0	-115.7	25.2
Liabilities	-25.8	36.6	70.0	47.2	241.9	91.3	-32.6
<b>Commercial banks (NFA)</b>	-269.4	134.3	72.7	142.9	149.9	-45.9	96.6
<b>Debt Relief</b>	-8.4	-8.0	-9.0	-3.5	4.8	-12.5	61.1
Principal	7.8	6.7	7.1	2.9	-14.1	6.0	-59.2
Interest	0.6	1.3	2.0	0.6	116.7	53.8	-70.0

Source: NBE

Among the components of the current account balance, net services showed a strong surplus. Despite a 13 percent increase in net private transfers and 21.9 net services in the same period, the current account deficit (including official transfers) widened to USD 4.7 billion from USD 2.8 billion in the previous year. This was mainly due to the fact of widening of trade deficit coupled with the decline in public transfers.

The balance in capital account showed a surplus of USD 3.9 billion, about 20.9 percent higher than the previous year owing to the surge in other public long term net capital inflows (171.4 percent). This might be due to the high disbursement for the mega projects under GTP and the growth of foreign direct investment by (19.1 percent). Net official long term capital flow, however, declined by 23.7 percent.

### **Exports**

Export under the review period shows a modest increase of 5.6 percent and stood at 3.3 billion USD. Major contributors to the growth in export earnings were oilseeds (47 percent), live animal (12.2), *chat* (9.6), pulses (7.5), and leather products (7.2). Nevertheless, such increases in the primary commodities were not strong enough to more than compensate the decline in the value of the export of coffee.

Earnings from coffee export declined by 4.3 percent and reached USD 714.4 million. This poor export performance was attributed to a 4.7 percent drop in export volume in contrast with a marginal (2.7 percent) improvement in the international price. Hence, the share of coffee in total export revenue in the review period dropped from 24.2 percent in the previous year to 21.9 percent in 2013/14. Similarly, earnings from export of gold contracted by 21.2 percent annually to reach USD 456.2 million, driven by 16.6 percent and 5.4 percent decline in international price and export volume, respectively. Gold accounted

for 14.0 percent of total export proceeds, 4.8 percentage points lower than that of the preceding year.

**Table 1.7: Value of Export by Major Commodities (In Million of USD)<sup>1</sup>**

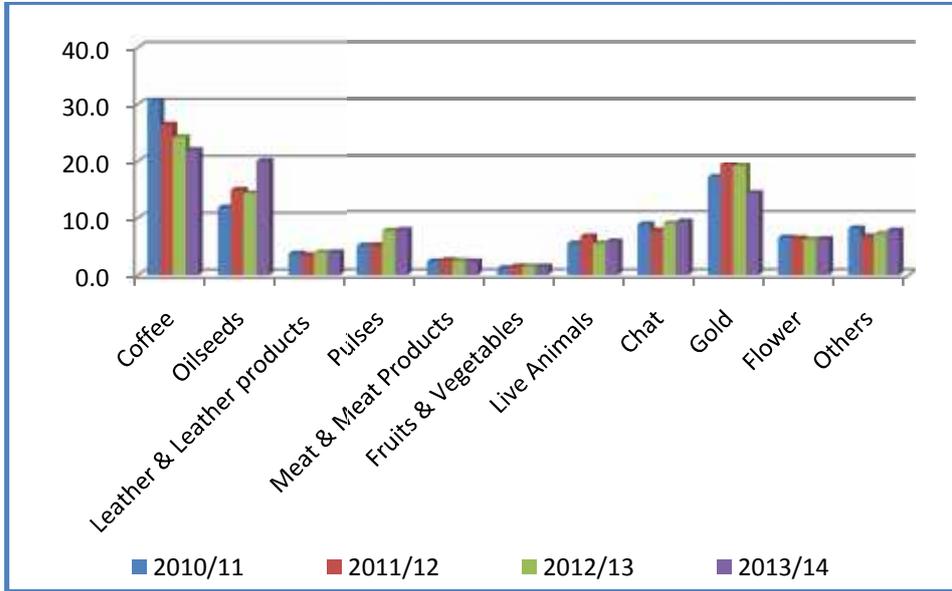
Particulars	2010/11	2011/12	2012/13	2013/14	Percentage change		
	A	B	C	D	B/A	C/B	D/C
Coffee	841.8	833.1	746.6	714.4	-1.0	-10.4	-4.3
Oilseeds	326.6	472.3	443.5	651.9	44.6	-6.1	47.0
Leather & Leather products	103.8	109.9	121.1	129.8	5.9	10.2	7.2
Pulses	137.9	159.7	233.3	250.7	15.8	46.1	7.5
Meat & Meat Products	63.3	78.8	74.3	74.6	24.5	-5.7	0.4
Fruits & Vegetables	31.5	44.9	43.9	45.9	42.5	-2.2	4.6
Live Animals	147.9	207.1	166.4	186.7	40.0	-19.7	12.2
Chat	238.3	240.3	271.3	297.3	0.8	12.9	9.6
Gold	461.7	602.4	578.8	456.2	30.5	-3.9	-21.2
Flower	175.3	197	186.7	199.7	12.4	-5.2	7.0
Others	219.1	207.1	215.4	247.4	-5.5	4.0	14.9
<b>Total</b>	<b>2747.2</b>	<b>3,152.7</b>	<b>3,081.2</b>	<b>3,254.8</b>	<b>14.8</b>	<b>-2.3</b>	<b>5.6</b>

Source: NBE

This phenomenon is typical in economies exporting primary commodities. Ethiopia's exports are mainly primary commodities and are vulnerable to external price fluctuations. Seven major export commodities of Ethiopia accounted for 85 percent from total export earnings. Structural transformation calls for export diversification from primary commodities to manufactured goods.

<sup>1</sup> Past years values are revised by ERCA

**Figure 1.8: The Share of Export Items from the Total Export**



Source: NBE

The significance of coffee from total export share continued to decline and it is overtaken by oilseeds and pulses. Values of exports of oilseeds have been significantly increasing during the last four years and its share in the total export is about to take over the share of coffee given the mere 2 percentage points lead of the latter in 2013/14. Among agricultural exports, pulses export has been increasing. Gold is still a dominant export item despite its relapse in the fiscal year.

**Imports**

Total merchandise imports grew by 19.7 percent in the fiscal year 2013/14 resulting in the total import bill of 13.7 billion USD. Accordingly, import to GDP ratio stood at 25 percent, a one percentage point increase from the preceding year.

Capital goods and consumer goods had the lion's share from total export of the country with a respective share of 33 and 28 percent. Fuel imports accounted for 18.5 percent and semi-finished goods had the share of 15.3 percent in the year under review.

**Table 1.8: Value of Imports by End Use (In Millions of USD)**

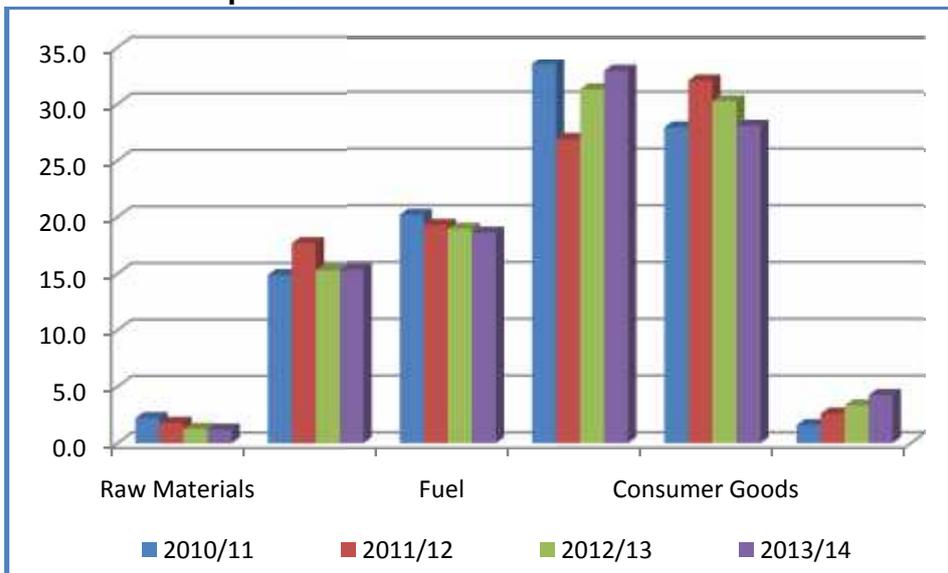
Particulars	201/011	2011/12	2012/13	2013/14	Percentage change		
	A	B	C	D	B/A	C/B	D/C
<b>Raw Materials</b>	<b>183.7</b>	<b>199.7</b>	145.6	<b>165.2</b>	<b>8.7</b>	<b>-27.1</b>	<b>13.5</b>
<b>Semi-finished Goods</b>	<b>1,228.00</b>	<b>1,957.20</b>	1,753.90	<b>2,098.10</b>	<b>59.4</b>	<b>-10.4</b>	<b>19.6</b>
Fertilizers	342.4	604.6	291.8	398.9	76.6	-51.7	36.7
<b>Fuel</b>	<b>1,659.30</b>	<b>2,124.80</b>	2,163.90	<b>2,543.20</b>	<b>28.1</b>	<b>1.8</b>	<b>17.5</b>
Petroleum Products	1,648.80	2,078.30	2,128.20	2,494.90	26.0	2.4	17.2
Others	10.5	46.4	1,236.10	48.4	341.9	2564.0	-96.1
<b>Capital Goods</b>	<b>2,757.00</b>	<b>2,961.70</b>	3,572.60	<b>4,500.30</b>	<b>7.4</b>	<b>20.6</b>	<b>26.0</b>
Transport	688.1	809.7	903.1	1,084.30	17.7	11.5	20.1
Agricultural	63.6	119.5	129.9	166.8	87.9	8.7	28.4
Industrial	2,005.40	2,032.50	2,539.60	3,249.20	1.4	24.9	27.9
<b>Consumer Goods</b>	<b>2,294.80</b>	<b>3,531.70</b>	3,452.40	<b>3,834.10</b>	<b>53.9</b>	<b>-2.2</b>	<b>11.1</b>
Durables	868.5	1,105.30	1,089.80	1,501.10	27.3	-1.4	37.7
Non-durables	1,426.30	2,426.40	2,362.60	2,333.00	70.1	-2.6	-1.3
<b>Miscellaneous</b>	<b>130.5</b>	<b>286.3</b>	378.9	<b>581</b>	<b>119.4</b>	<b>32.3</b>	<b>53.3</b>
<b>Total Imports</b>	<b>8,253.30</b>	<b>11,061.20</b>	<b>11,467.30</b>	<b>13,721.90</b>	<b>34.0</b>	<b>3.7</b>	<b>19.7</b>

Source: NBE

Consistent with the objectives of the Growth and Transformation Plan, imports of capital goods have expanded. Import of capital goods rose considerably by 26 percent and amounted to USD 4.5 billion mainly due to higher import bills of industrial (27.9 percent), transport (20.1 percent) and agricultural goods (28.4 percent). Similarly, import of consumer goods increased by 11.1 percent owing

to a 37.7 percent rise in import of durable goods. The import of non-durable consumption goods declined by 1.3 percent. Hence, the share of consumer goods in total imports decreased to 27.9 percent from 30.1 percent the preceding year. Fuel imports rose by 17.5 percent in 2013/14 and amounted to USD 2.5 billion, as volume of fuel import increased by 18.5 percent though international crude oil prices declined by 3.7 percent. Likewise, semi-finished goods imports stood at USD 2.1 billion, which was 19.6 percent higher than a year earlier as one of its components. Fertilizer imports increased by 36.7 percent and reached USD 398.9 million recovering part of the drop observed in the previous year.

**Figure 1.9: Share of Major Imported Commodities from total Imports**



Source: NBE

## I.6 Fiscal Developments

*The first four years of the GTP witnessed a significant expansion in domestic resource mobilization to which an aggressive increase in taxes was a part. Total revenue had been expanding at an average rate of 28.9 percent during the period pushing its share to 92.5 percent in 2013/14 from the average 77.6 percent share during the period of PASDEP. Tax revenue was dominant with a share of 84.2 percent in the total revenue and external grants and its share of nominal GDP was 12.7 percent. This compares with the GTP target of 15.3 percent share in tax revenue. On the other hand, external grants shrunk by 9.2 percent in 2013/14 over the preceding year and barely increased at a rate of 1 percent over the GTP period. While shifting resources to domestic sources away from foreign grants is commendable, this needs to be accompanied by robust and predictable foreign exchange earnings through exports.*

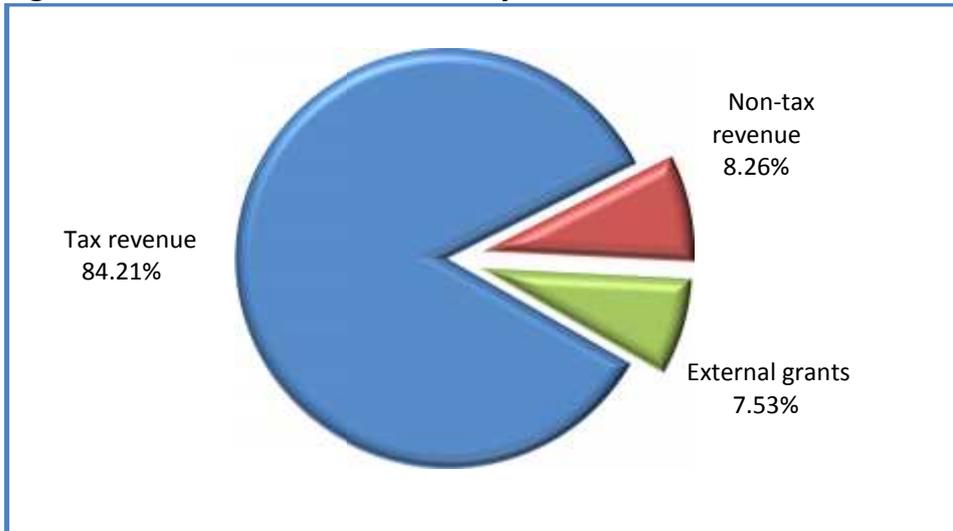
*In the fourth year of the implementation of the GTP (2013/14), expenditure by the Federal Government expanded by 20.5 percent over the preceding year. The relatively modest inflation rate observed during the period under review is believed to have made the budget more effective. Out of a total of 185.5 billion Birr federal budget, 57.9 percent and 42.1 percent was allotted to finance capital, and recurrent expenditures of the federal government, respectively. The three top sectors which attracted the largest share of the capital budget were Economic development, Social development and External Assistance with a respective share of 62.9 percent, 22.4 percent and 8.1 percent.*

### **Government Revenue**

In the fiscal year 2013/14, total revenue and grants of the Federal Government stood at 158.1 billion Birr growing by 15.2 percent over the preceding year. This rate of expansion of revenue and grants contrasts with the 27.1 percent rise during PASDEP and the 24.6 percent during the four years of GTP. Total

revenue of the government during the period of PASDEP and GTP grew at about similar average rate of 28.5 percent and 28.9 percent, respectively. In the review period (2013/14) total revenue excluding grants grew by 17.8 percent in 2013/14. It is lower compared to the growth of the previous year which was 18.6 percent. At the same time it is the lowest growth rate recorded in the past nine years. In the last two years, there was a deceleration of the rate of expansion of total revenue and grants compared to the first two years of GTP. From the component of total revenue both direct and indirect revenue grew by 17.8 and 21.9 percent, respectively. In both cases, the growth was at a lower rate than the previous year. In the review year the government managed to cover 78.8 percent of its expenditure from total revenue and 85.2 percent of its expenditure from total revenue and grants. The performance shows a lower coverage of expenditure both from total revenue and grants and total revenue excluding grants compared to the previous fiscal year (2012/13).

**Figure 1.10: Government Revenue by Sources**



Source: Ministry of Finance and Economic Development/EEA computation

During the fiscal year under review, grants accounted for 7.5 percent of the total revenue and grants. The average share of grants for the first four years of GTP and PASDEP was 11.9 percent and 22.4 percent, respectively. The grant component shrank by 9.2 percent in the year 2013/14 and increased at a mere 1 percent over the last four years. This is a significant decline both in the rate and volume of flow of grants over the period of GTP compared to the 29.4 percent expansion during the period of PASDEP. This may show a significant decrease in the country's dependency on foreign funds. This is in particular witnessed by the aggressive expansion of tax revenue over the last four years. Even though the share of external grant is not increasing as it did before, it is still very volatile which might make planning difficult with the potential of delaying major projects. The average share of direct and indirect tax from total revenue increases from 24.5 to 29.5 percent, and from 52.5 to 57.0 percent, respectively, from PASDEP to GTP period, which shows that the government made significant efforts to collect taxes during the GTP period.

**Table I.9: Growth rate of Government Revenues**

Fiscal Year ending July 7	2005-2010	2010/11	2011/12	2012/13	2013/14	2010-2014
Tax Revenue	29.0	36.2	45.4	24.8	24.4	32.7
Direct Taxes	31.4	31.2	47.6	26.1	29.2	33.5
Indirect Tax	28.1	38.8	44.3	24.1	21.9	32.3
Domestic indirect taxes	32.1	46.4	48.5	39.1	24.8	39.7
Import duties and taxes	26.5	34.2	41.4	13.8	19.4	27.2
Export taxes						
Non-tax revenue	33.3	-3.9	68.9	-0.3	-23.5	10.3
Total revenues	28.5	28.3	48.8	20.6	17.8	28.9
External Grants	29.4	33.3	-22.4	2.5	-9.2	1.0
Grants in kind/earmarked	20.2	23.3	17.9	19.9	-3.1	14.5
Untied cash & CPF/grants	70.3	41.3	-51.1	-27.4	-26.5	-15.9
Total Revenue and Grants	27.1	29.2	35.1	18.6	15.2	24.5

Source: Ministry of Finance and Economic Development

### **Government Expenditure**

Total federal government expenditure stood at 185.5 billion Birr in the fiscal year 2013/14, a 20.5 percent increase over the preceding year. Both capital and recurrent expenditure grew by 17.5 and 24.5 percent, respectively. While recurrent expenditure showed a significant increase relative the previous fiscal year capital expenditure experienced lower growth in the review year. The average rate of expansion of government expenditure for the last four years was 27.1 percent, slightly higher than the 25.8 percent average rate for the period of PASDEP. Consistent with the tenets of GTP, capital budget dominated the government expenditure accounting for about 58.0 percent of the total outlay during the last four years and the fiscal year under review. This contrasts with the 50.5 percent share of the capital expenditure in the total federal outlays during the period of PASDEP.

Component wise, the share of expenditure on economic development during PASDEP and GTP was 66.3 and 61.0 percent, respectively, and the respective share of social development expenditure was 26.4 and 23.5 percent from the total capital expenditure. By and large, though their shares decreased due to increase in the share of external assistance account, economic development expenditure maintained its highest share during both periods. Among economic development expenditure components allocation to road construction dominated the rest followed by agriculture. Road construction takes shares of 56.4 percent of economic development expenditure while natural resource and agriculture accounts for 17.7 and 17.1 percent, respectively, through four years of GTP. It should be noted that the share of agriculture decreased in the GTP period from that of PASDEP, dwindling from an average of 24.7 to 17.1 percent. However the share of natural resources accelerates to 17.7 from 12.7 percent and the share of expenditure on road construction further increased to 56.4 from 49.1 percent during PASDEP.

**Table I.10: Growth rate of Government Expenditures from 1998 to 2014**

<b>Fiscal Year ending July 7</b>	<b>2005-2010</b>	<b>2010/11</b>	<b>2011/12</b>	<b>2012/13</b>	<b>2013/14</b>	<b>2010-14</b>
<b>Expenditure</b>	<b>24.5</b>	<b>31.5</b>	<b>32.6</b>	<b>23.7</b>	<b>20.5</b>	<b>27.1</b>
<b>Current expenditure</b>	<b>19.5</b>	<b>26.6</b>	<b>26.9</b>	<b>22.0</b>	<b>24.4</b>	<b>25.0</b>
o/w: defense	6.7	18.7	36.5	0.1	15.3	17.7
Interest & charges	9.9	20.5	16.6	31.4	29.4	24.5
<b>Capital expenditure</b>	<b>30.2</b>	<b>35.5</b>	<b>36.9</b>	<b>25.0</b>	<b>17.8</b>	<b>28.8</b>
Central Treasury	-0.4		49.9	19.3	19.9	29.7
External assistance 2/	24.6	933.5	24.0	19.9	-3.1	243.6
External loans	-14.1		-11.8	74.8	21.5	28.2
Poverty targeted expenditure	<b>33.5</b>	35.2	21.2	19.8	38.7	7.2
<i>Overall balance including grants</i>	<i>47.5</i>	<i>61.3</i>	<i>6.5</i>	<i>91.1</i>	<i>63.7</i>	<i>55.6</i>
<i>Overall balance excluding grants</i>	<i>17.5</i>	<i>41.4</i>	<i>-12.8</i>	<i>38.5</i>	<i>31.6</i>	<i>24.7</i>
<b>Financing</b>	<b>-43.4</b>	<b>86.8</b>	<b>6.5</b>	<b>91.1</b>	<b>63.7</b>	<b>62.0</b>
External (net)	41.5	88.7	-16.3	158.0	21.7	63.0
Domestic (net)	3.4	-93.7	331.1	-53.5	665.7	957.4
Banking system	4.1	-319.9	25.9	-15.2	-168.4	-119.4
Non-bank sources	-349.4	739.5	141.8	-34.2	125.4	243.1
Privatization Receipts			89.6	-56.6	-100	-22.3
Other and residual	165.6	-23.0	277.6	-29.0	115.0	85.1

Source: Ministry of Finance and Economic Development

**Table I.11: Share of different expenditures**

<b>Fiscal Year ending July 7</b>	<b>2009/10</b>	<b>2010/11</b>	<b>2011/12</b>	<b>2012/13</b>	<b>2013/14</b>
<b>Expenditure</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Current expenditure</b>	<b>44.9</b>	<b>43.2</b>	<b>41.3</b>	<b>40.8</b>	<b>42.1</b>
o/w: defense	12.5	11.7	12.6	10.3	9.6
Interest & charges	5.0	4.7	4.3	4.7	4.9
<b>Capital expenditure</b>	<b>55.1</b>	<b>56.8</b>	<b>58.7</b>	<b>59.2</b>	<b>57.9</b>
Central Treasury	0.0	71.9	78.7	75.2	76.5
External assistance 2/	1.6	12.2	11.1	10.6	8.7
External loans	0.0	15.8	10.2	14.3	14.7
Overall balance including grants	-7.1	-8.8	-7.0	-10.9	-14.8
Overall balance excluding grants	-24.5	-26.3	-17.3	-19.4	-21.2
<b>Financing</b>	<b>6.2</b>	<b>8.8</b>	<b>7.0</b>	<b>10.9</b>	<b>14.8</b>
External (net)	5.8	8.3	5.2	10.9	11.0
Domestic(net)	2.5	0.1	3.0	1.1	7.3
Banking system	1.9	-3.2	-3.1	-2.1	1.2
Non-bank sources	0.5	3.4	6.1	3.3	6.1
Privatization Receipts	0.0	1.6	2.2	0.8	0.0
Other and residual	-2.1	-1.2	-3.5	-2.0	-3.6

Source: Ministry of Finance and Economic Development

Consequently the trends of expenditure on economic development show a significant shift from agriculture to natural resources and further swelling the share of road construction during GTP. The education sector takes the lion share of the social expenditure followed by health sector. During PASDEP education sector maintained 65.9 percent from the total expenditure on social expenditure while it stood at a share of 62.7 percent in GTP. The health sector enjoyed a marginal increase from 19.2 in PASDEP to 21.7 during GTP.

## Financing

Government deficit, excluding grants to GDP ratio stood at 3.7 percent for the last four years and 3.8 percent in 2013/14 compared to an average of 6.0 percent during the period of PASDEP. Deficit including grants was maintained at 1.8 percent of GDP during both PASDEP and GTP. Over all government narrowed the gap between its revenue and expenditure in the GTP period relative to PASDEP.

On average the government covered 78.94 percent of its expenditure from revenue and 89.6 from revenue and grants during the last GTP period. The government financed its deficit from external sources (52.4%) and from domestic sources (48.9%) during PASDEP. Nevertheless there is a huge shift of government deficit financing sources during GTP. The share of external sources in financing the deficit increased to 86.2 percent during the GTP period.

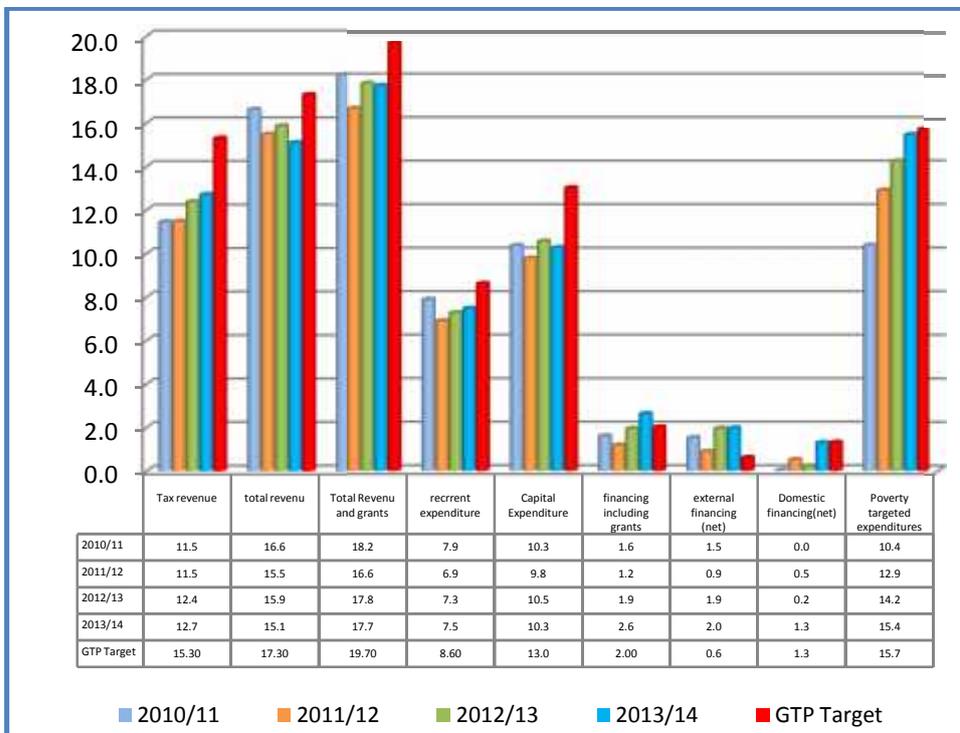
## Fiscal Performance and GTP Target

The GTP's target of maintaining a single digit inflation rate seems to hold for the last two years after passing the challenge of inflationary pressures in the wake of the plan in 2010/11. The plan had targeted total revenue of 17.3 percent of GDP and a tax rate of 15.3 of GDP at current market price and maintaining a budget deficit of at less than 2 percent at the end of the GTP period. Judging from this stand point, an extra effort was needed to meet the target during the last year of GTP to meet the target given the 12 percent rate of tax revenue (as percent of GDP) for the last four years of GTP and the 12.7 percent rate for the fiscal year 2013/14. The rate of expansion of total domestic revenue was on average 13.9 percent of GDP for the past four years and it was 13.96 percent of GDP during 2013/14.

On the expenditure side government has made a remarkable achievement in increasing expenditure on pro-poor sectors such as road, health and education. As

a result the GTP has nearly been achieved. Government had targeted to achieve 8.6 percent of recurrent expenditure and 13.0 percent capital expenditure from nominal GDP. The performances indicate that much more extra effort is needed to achieve the GTP target. The performance is lagging behind the target particularly the performance of capital expenditure as a share of GDP during the fiscal year as it is 10.3 percent compared to a 13.0 percent target.

**Figure I.11: Fiscal Performance Vs GTP target as share of nominal GDP share**



Source: Ministry of Finance and Economic Development

The federal government met the target of fiscal discipline as budget deficit was maintained at 1.9 percent on average for the period 2010/11-2013/14; but it

became 2.6 percent in the fiscal year 2013/14. Nevertheless, projects of significant magnitude such as those in the energy and telecommunication sectors are implemented by government enterprises the outlays of which do not count on the government budget deficit.

**Table I.12: Summary of General Government Finance**

<b>Fiscal Year ending July 7</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>	<b>2009/10</b>	<b>2010/11</b>	<b>2011/12</b>	<b>2012/13</b>	<b>2013/14</b>
<b>Tax revenue</b>	<b>14159</b>	<b>17353</b>	<b>23802</b>	<b>28998</b>	<b>43315</b>	<b>58981</b>	<b>85740</b>	<b>107010</b>	<b>133118</b>
<b>Direct Taxes</b>	4461	5168	7016	9858	14903	19550	28858	36393	47021
<b>Indirect Tax</b>	9698	12185	16786	19139	28412	39431	56882	70618	86098
<b>Domestic indirect taxes</b>	3111	3997	5093	7325	10727	15705	23326	32440	40499
<b>Import duties and taxes</b>	6587	8189	11693	11814	17685	23726	33556	38177	45599
<b>Export taxes</b>	0	0	0	0	0	0	0	0	0
<b>Non-tax revenue</b>	<b>5371</b>	<b>4444</b>	<b>5992</b>	<b>11176</b>	<b>10546</b>	<b>10139</b>	<b>17124</b>	<b>17067</b>	<b>13055</b>
<b>Total revenues</b>	19530	21797	29794	40174	53861	69120	102864	124077	146173
<b>External Grants</b>	<b>3732</b>	<b>7583</b>	<b>9911</b>	<b>14454</b>	<b>12376</b>	<b>16491</b>	<b>12795</b>	<b>13115</b>	<b>11904</b>
<b>Grants in kind/earmarked</b>	2782	3492	4434	4858	5561	6859	8089	9699	9394
<b>Untied cash &amp; CPF/grants</b>	950	4091	5477	9595	6816	9633	4706	3416	2510
<b>Total Revenue and Grants</b>	<b>23262</b>	<b>29380</b>	<b>39705</b>	<b>54627</b>	<b>66237</b>	<b>85611</b>	<b>115659</b>	<b>137192</b>	<b>158077</b>
<b>Expenditure</b>	<b>29276</b>	<b>31366</b>	<b>46915</b>	<b>57774</b>	<b>71335</b>	<b>93831</b>	<b>124417</b>	<b>153929</b>	<b>185472</b>
<b>Current expenditure</b>	<b>15234</b>	<b>17324</b>	<b>22794</b>	<b>27176</b>	<b>32012</b>	<b>40535</b>	<b>51445</b>	<b>62746</b>	<b>78087</b>

MACROECONOMIC PERFORMANCE

Fiscal Year ending July 7	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
o/w: defense	3010	3005	3453	4000	4000	4750	6486	6493	7489
Interest & charges	1054	1207	1133	1286	1587	1913	2230	2931	3794
<b>Capital expenditure</b>	<b>14042</b>	<b>14042</b>	<b>24121</b>	<b>30599</b>	<b>39322</b>	<b>53297</b>	<b>72971</b>	<b>91183</b>	<b>107385</b>
Central Treasury	10785	10785	18277	0	0	38326	57439	68552	82175
External assistance 2/	2196	2196	4034	340	631	6521	8089	9699	9394
External loans	1061	1061	1810	0	0	8436	7443	13013	15816
<b>Overall balance including grants</b>	<b>-6014</b>	<b>-1986</b>	<b>-7210</b>	<b>-3147</b>	<b>-5097</b>	<b>-8220</b>	<b>-8758</b>	<b>-16736</b>	<b>-27395</b>
<b>Overall balance excluding grants</b>	<b>-9746</b>	<b>-9569</b>	<b>-17121</b>	<b>-17601</b>	<b>-17473</b>	<b>-24712</b>	<b>-21553</b>	<b>-29851</b>	<b>-39299</b>
<b>Financing</b>	<b>7781</b>	<b>-3125</b>	<b>7323</b>	<b>2675</b>	<b>4400</b>	<b>8220</b>	<b>8758</b>	<b>16736</b>	<b>27395</b>
External (net)	1512	851	851	3176	4131	7798	6530	16846	20493
Domestic(net)	4502	1135	6359	-417	1758	111	3793	1764	13510
Banking system	2876	4259	4259	857	1382	-3040	-3826	-3245	2218
Non-bank sources	-141	1988	1988	440	375	3151	7619	5009	11292
<b>Privatization Receipts</b>						1458	2764	1200	
<b>Other and residual</b>	1767	-5111	113	-84	-1489	-1146	-4328	-3074	-6608

Source: Ministry of Finance and Economic Development



## **Chapter II**

### **Ethiopian Agriculture over the GTP period: Assessment of Performance, Progress, Challenges and Opportunities**

#### **2.1 Background**

Agricultural development and food security are the major policy objectives of the government of Ethiopia. Several programs and initiatives were implemented to drive agricultural growth and poverty reduction throughout the country. This is not without cause, as the size of the Agricultural sector has an overwhelming influence on the Ethiopian economy. It influences the path of the economy through its impact on both the overall output and employment. Agricultural production accounts for 47% of GDP, employs 85% of labor force, and supplies over 75% of the value of all exports (Mundi, 2013).

Cognizant to these facts, the Government of Ethiopia, through its national policies, plans and programs, placed high priority on the agricultural and rural development sector (EAS, 2013). Agricultural Development Led Industrialization (ADLI) has been the overarching policy and strategy of the government since the early 1990s and it assigns highest priority to transforming agriculture from a subsistence source of livelihood to a market-oriented economic sector. It aims for agriculture 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, the Food Security Program, Sustainable Development and Poverty

Reduction Program and more recently, the Growth and Transformation Plan that has been serving as the blueprint for the country's development programs for the 2010/11 – 2014/15 period.

As demonstrated in the GTP, which was the third five-year development plan and was active for the period between 2010-2015, the government has strong ownership of and vision for the development of the agricultural sector and food security (USAID, 2011).

These policies and development programs greatly contribute to raising agricultural production and enhancing the status of national food and nutrition securities. Along with other 12 countries, Ethiopia is recognized recently by FAO for its outstanding progress in fighting hunger (FAO, 2014).

This report aims to assess the performance of the agricultural sector over the GTP period (2010/11 – 2014/15). The rest of this paper is organized as follows:

Section two gives an overview of Ethiopian Agriculture over the GTP Period and briefly discusses government plans and strategies for the sector.

Section three deals with the overall performance of the Agricultural sector over the GTP period. It deals specifically with changes to the contribution of the agricultural sector to Food Security over the GTP period. Progress over the commercialization of agriculture is also discussed in the second part of this section.

Section four focuses on small farmers and looks at various issues that range from the dynamics in the structure of the smallholder sector to the performance of the small farm households in terms of production of key food and cash crops. This section is subdivided into four units. The first section looks

at land use and farm structure among small farmers over the GTP period. The next focuses on detail performance assessment in terms of food crops production and productivity. This is followed by an assessment of production of non-food crops. The last unit is where production of major cash crops like coffee, chat, and vegetables and fruits are discussed.

Section five discusses the Progress and challenges in the use of modern farm inputs over the GTP period. In this section the use of inorganic fertilizers and improved seeds are discussed. In addition to the progress of the use of these inputs, a large part of this section is devoted to discussion of the various challenges and problems of the input sub-sector.

Section six briefly discusses the performance of the livestock sector. This is followed by a detailed discussion on agricultural export and import in section seven.

## **2.2 The GTP and Agriculture – Plan and Strategies**

The Growth and Transformation Plan (GTP) promises rapid agricultural growth as well as to shift agriculture to a high growth path in order to meet the food security needs of the country, curb inflationary pressures on agricultural products, and broaden the export base of the country. The sector was expected to serve as the spring board for structural transformation by adequately supplying the inputs necessary for industrial growth (MoFED, 2010/11).

The GTP puts high priority on intensifying productivity of smallholders, strongly supports the intensification of market-oriented agriculture, and promotes private investments in Ethiopian agriculture. The productivity of most average farmers is two to three times lower than that of the best farmers. Therefore,

the first strategic direction of the GTP is to scale up the best practices in order to raise the productivity of the average farmers closer to that of the best farmers (ibid). This includes expanding irrigation coverage and shifting to higher production of high value crops to improve income of farmers and pastoralists, with complementary investments in market and infrastructure development (FAO, 2012).

The GTP also promises to promote the commercialization of smallholder farming and to make it the major source of agricultural growth. It also pledges support to increase private investments in large commercial farms, especially in lowlands. Regarding pastoralists, the GTP gives priority to water and infrastructure development. In particular, in areas suitable for irrigation, resettlement of pastoralists on a voluntary basis is also considered in the GTP.

The GTP focuses on small and medium-scale farmers and aims to achieve a greater balance between targeted support to the poorest rural households in food insecure areas and support to more dynamic households and enterprises (FAO, 2012, MoA, 2013). The GTP envisages strengthening extension services and helping small farmers adopt new technologies and better practices that conserve soil and natural resources.

As one of the major components of the GTP, an agricultural development program known as the Agricultural Growth Programme (AGP) was formulated and implemented in 83 woredas in the Amhara, Oromia, SNNP and Tigray regions. The AGP targets a total population of 9.8 million people in about 2 million agricultural households, mainly small and medium-scale farmers. Its objective is to increase productivity and market access for key crop and livestock products in selected areas with good potential for agricultural growth.

The GTP consists of three components:

1. *Agricultural Production and Commercialization*: This aims to strengthen the capacity of farmer organizations and their service providers to scale up the best practices and adopt improved technologies in production and processing. It also aims to strengthen the marketing and processing of selected commodities through engagement with private sector stakeholders.
2. *Small-Scale Rural Infrastructure Development and Management*: This component focuses on supporting the construction, rehabilitation and/or improvement, and management of small-scale rural infrastructure to improve productivity. Through improved access to markets they plan further develop and increase the efficiency of key value chains.
3. *AGP Management, Monitoring, and Evaluation* is the third component and aims to support effective coordination and management of the AGP at all levels of implementation, to establish an effective monitoring and evaluation system, and to create a learning environment for continuous improvement of the AGP design and other agricultural growth interventions.

Along with the agricultural growth program which primarily focused on high potential and relatively food secure areas the government launched the 2010-2014 Food Security Program (FSP) in 2010 with the aim of improving food security for chronic and transitory food insecure households in rural areas. The FSP envisages a trajectory of asset stabilization and accumulation to finally enable food insecure households to first be food sufficient and then food secure. The program has four components: the Productive Safety Net Program (PSNP), the Household Asset Building Program (HABP), the Complementary Community-based Infrastructure Program (CCI), and the Resettlement Program. Donor financing is allocated to PSNP and HABP capacity building activities, while Government financing to the FSP is allocated to the HABP, CCI and Resettlement components (FAO, 2012).

## 2.3 Overview of Agricultural Performance over the GTP Period

### 2.3.1 Contribution to GDP and Food Security

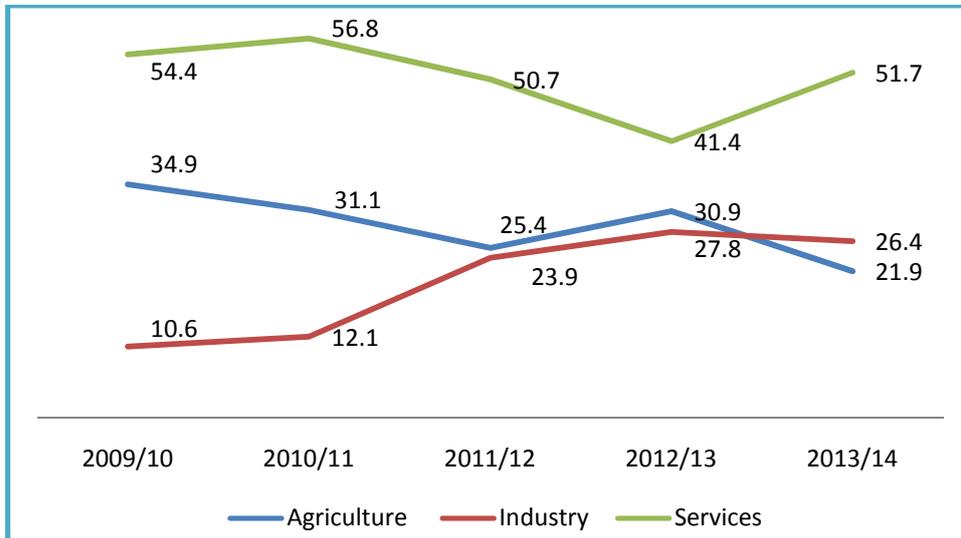
The Growth and Transformation Plan clearly stated that the agriculture sector will continue to be the major source of economic growth and is expected to grow on average by 8.6% per annum (MoFED, 2014). The average performance for the past four years, however, is 6.6%, which is 2% below the target (see Figure 2.1 below). Reflecting this, agriculture contribution to the national GDP growth has declined from around 35% in 2009/10 to 22% in 2013/14 (Figure 2.2).

**Figure 2.1: Agricultural Growth rate over the GTP period (%)**



Source: Computed based on data from MoFED (2014) and NBE (2014).

**Figure 2.2: Agriculture contribution to GDP growth vis-à-vis other sectors over the GTP period**



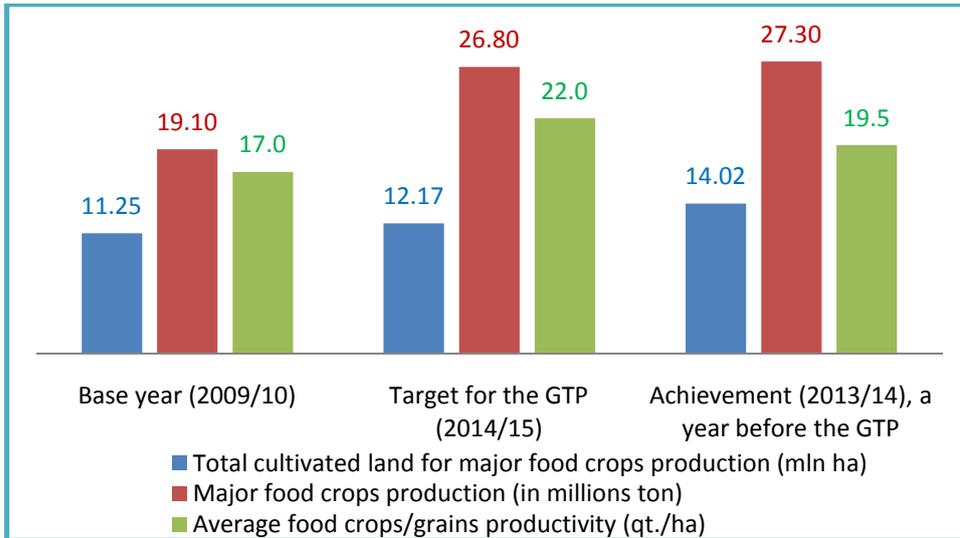
Source: Computed based on data from NBE (2014).

Despite the relative decline of agriculture contribution to GDP growth, agricultural production has significantly increased during the reporting period. Over the past decade alone, cereal production has more than doubled to nearly 20 million tons, mainly as the result of the expansion of cultivation land, increased productivity due to favourable rains, increased use of fertilizer and improved seeds, and lower impact of pests and diseases (CSA, 2013). As shown in Figure 2.3 below, the country surpassed its GTP target in food crop production in 2013/14, a year before the end of the GTP period.

The progress the country has made in food production is clearly seen in Figure 2.4 below which shows the progress in food crop production vis-à-vis population growth. Cereal production has significantly increased, especially

since 2008 when the disparity in population and cereal growth had widen in favour of the latter.

**Figure 2.3: Food Crops Production over the GTP Period**



Source: MoFED (2010/11) and CSA (2013/14)

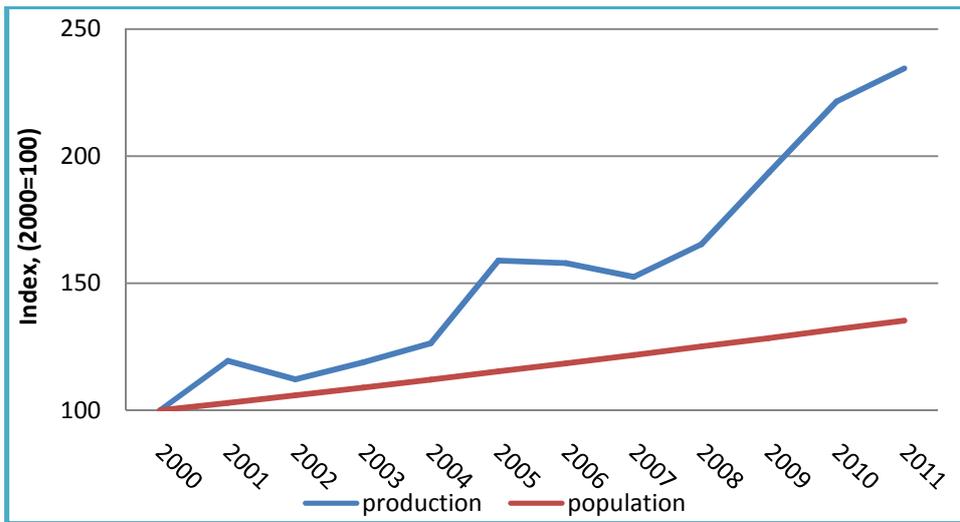
Note: Data includes private farmers holdings as well as commercial farmers holdings (and both for Belg and Mehere seasons).

International organizations have also acknowledged Ethiopia’s progress in food production and security. For instance, the recent Global Hunger Index reported by IFPRI put Ethiopia among the top seven countries that have recorded significant progress in reducing hunger. Between 1999 and 2011, the country reported to reduce its hunger index from 42.2% to 28.7% (IFPRI, 2012).

Significant improvements have also been made in terms of reducing malnutrition. Stunting prevalence decreased from about 58% in 2000 to about

44% in 2011 (CSA, 2011). A UNICEF (2012) report shows that Ethiopia's U5 mortality rate between 2000 and 2011 fell from an estimated 139 deaths per 1,000 live births to 77, which is very close to the MDG 4 target of 66 per 1,000.

**Figure 2.4: Growth in cereal production and population over the past decade**

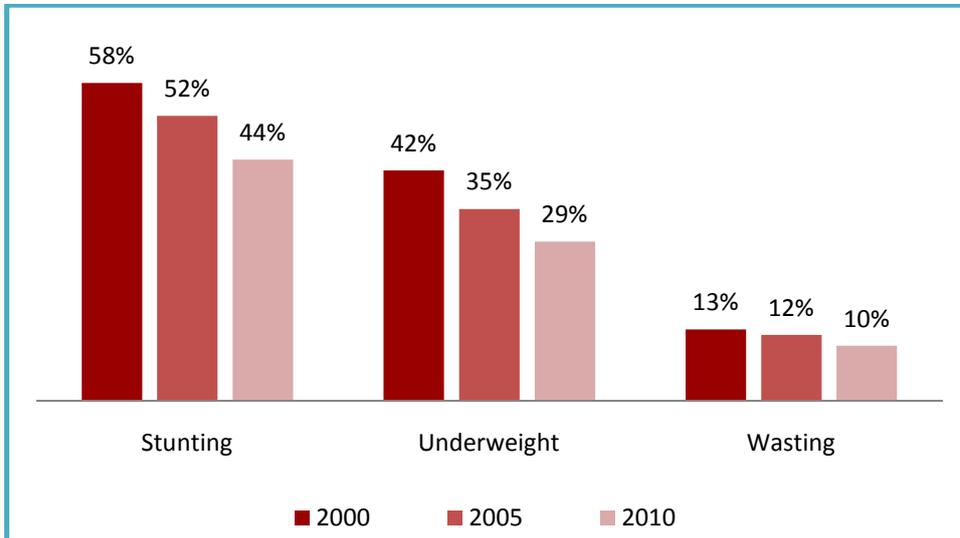


Source: computed based on FAO stat

Note: Data from FAO indicates that there were 66 million people in 2000 when the nation produced 8.02 million tones of cereals.

The decline in poverty and malnutrition can be attributed to a number of factors including production and marketing interventions in the agriculture sector. Recent joint efforts by the Government of Ethiopia and separate donors have also strengthened Ethiopia's agricultural resilience, contributing to a reduction in the number of Ethiopians threatened with starvation.

**Figure 2.5: Nutrition Trends from 2000 to 2010**



Source: FAO and WFP, 2012.

### Food Security/Insecurity

Despite all of these progresses, Ethiopia remains one of the world’s most food insecure countries, with problems along all key dimensions of food security. Considerable food insecurity challenges remain such as the more than 20 million Ethiopians that will still be hungry even if the MDGI is met by 2015. There were more than 5 million (44%) children who are stunted in 2011, which means that around 3% of the world’s stunted children live in Ethiopia. Micronutrient deficiencies are still prevalent. Little progress has been made in reducing wasting among children below the age of five. More than 10% of Ethiopian children are wasted, out of which 3% are severely wasted (CSA, 2011, EAS, 2013).

Food security in Ethiopia is most definitely not just a question of food production and small-scale farmers. The list of variables influencing Ethiopia's lack of food security is long, but similar to other poor and institutionally weak countries. Both food production and distribution depend on a host of internal and external factors (Glopolis, 2012). Food production is affected by aspect many factors including low technology supply or weak and inappropriate disseminations of productivity enhancing technologies coupled with high natural resources degradation. Other institutional factors that hold back labour productivity in the Ethiopian smallholder sector, which provides over 90% of the agricultural output<sup>2</sup>, are also very important. Demand side factors that include issues on how the food that is produced – or imported – is distributed to rural and urban populations throughout the country. Infrastructure and marketing systems determine the flow of food (Glopolis, 2012) and their accessibility are also very important. This is especially true for the majority of the urban poor as well as small holders who produce insufficient food (i.e. net food-buyers).

### **2.3.2. Commercial Agriculture over the GTP period**

Ethiopia is basically a country of smallholder agriculture. However, the country has a long history of commercial agriculture which dates back to the Imperial era. During the Second five year plan (1962-1966), the Imperial government encouraged the implementation of foreign as well as domestic investors' large-scale commercial farms especially in parts of the country like the Awash valley and at Setit Humera in northwestern Ethiopia.

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<sup>2</sup> A study by Bill & Melinda Gates Foundation in 2010 indicates that without expansion of cultivated land, and given forecast population growth, the average land holding size in highland areas will be reduced to 0.7 hectares by 2020, placing further pressure on rural incomes and food security (Bill & Melinda Gates Foundation, 2010).

During the socialist regime (1974-1991) investments in large-scale commercial farms were supported but they followed the socialist framework where the promoter as well as the owner was the government. Many large-scale commercial farms owned by individuals and cooperatives during the Imperial regime were converted into state farms during this period. The development of new state farms continued thereafter and the expansion was dramatic. For example, the size of state farmland was about 216,000 ha by 1987/88 which accounted for about 3.3% of the total cultivated land during that year and this was supposed to increase to 6.4% (i.e. 468,000 ha) within the Ten-Year Plan period (1985-1994) (Adil, 2013).

Following the overthrow of the Derg regime in 1991, the new government primarily followed an agricultural policy that centered on smallholder agriculture while privatizing or dismantling state farms it inherited from its predecessor. This policy, i.e. negligence of large commercial farms, continued at least until 2005. A study by Adil (2013) indicates that until 2011 about 3.8 million hectares land was requested for all investment projects planning to engage in commercial mixed agriculture, livestock production, horticulture, forestry and related activities, and others. The majority (86%) of the total land approved for commercial agriculture, however, was licensed during the PASDEP period (i.e. 2005-2009) and early GTP period (2010-2011)<sup>3</sup> (ibid).

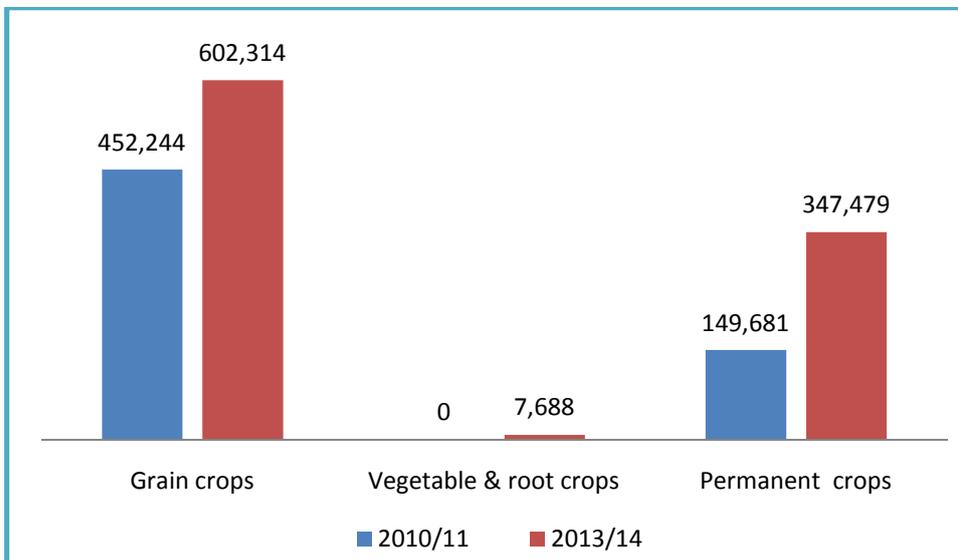
Despite this discussion on the trend of commercial agriculture in Ethiopia, the purpose of this chapter is to shed light on the growth of commercial agriculture over the GTP period, and its trend vis-à-vis smallholder agriculture in particular.

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<sup>3</sup> Other reports (e.g. Adil, 2013) reported that as part of the revised national economic growth strategies for private investment, the government of Ethiopia has offered about 11.5 million ha of land for large scale agricultural investment of which a total of 1.2 hectares was recently assigned for foreign investors.

Though official statistics indicate that over the past few years close to 4 million hectares were approved or delivered to commercial farmers, the actual farm lands cultivated by them never exceeds a million hectares. In 2013/14, commercial farmers cultivated 957, 481 hectare of farm lands for production of grain, vegetables and other permanent crops. Of this land, food/grain and permanent crops constitute 63% and 36%, respectively.

**Figure 2.6: Agricultural Lands Managed by Commercial Farmers over the past few years (in hectares)**

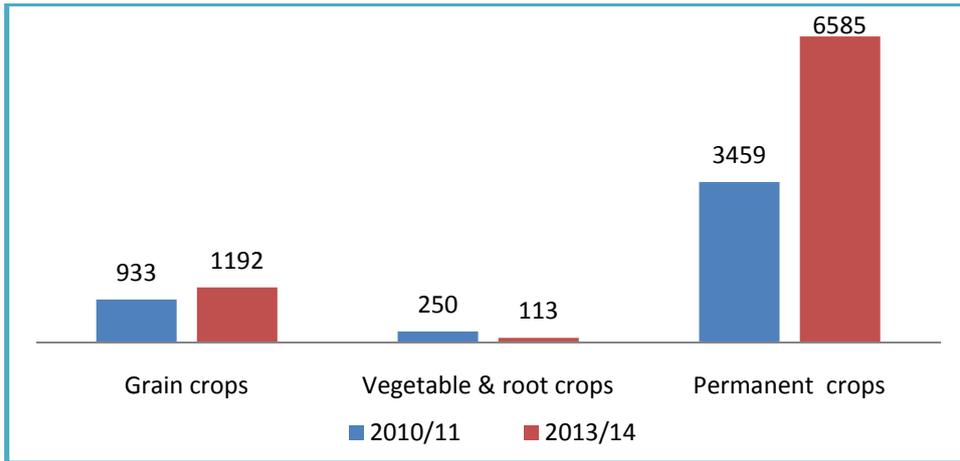


Source: Computed based on CSA (2011) and (2013/14)

Compared to the beginning of the GTP period (2010/11), agricultural land cultivated by commercial farmers increased by 55% in 2013/14; of which the share of farm lands for food crop/grain production is 33%. Following this relatively large growth rate, the share of commercial farmers in total agricultural farm land cultivated by food/grain crops and permanent crops increased to 4.9% (from 3.7% at the beginning of the GTP period) and 27.6%

(from 11.9% at the beginning of the GTP period) respectively (CSA 2010/11 and 2013/14).

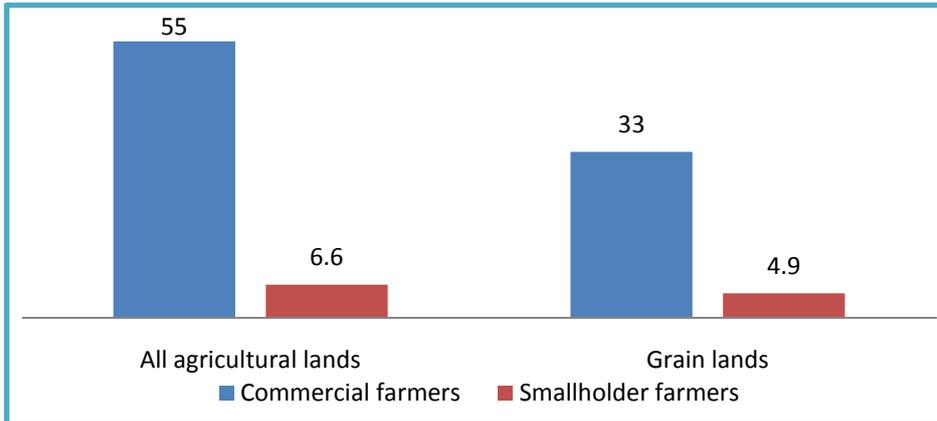
**Figure 2.7: Agricultural Production by Commercial Farmers Over the GTP Period (in thousands metric ton)**



Source: Computed based on CSA (2011) and CSA, 2013/14

During the same period smallholders also managed to expand their farm land but at smaller percentage points. Official statistics indicate that the growth rate in total agricultural and food/grain farm lands cultivated by smallholder farmers was only 6.6% and 4.9%, respectively.

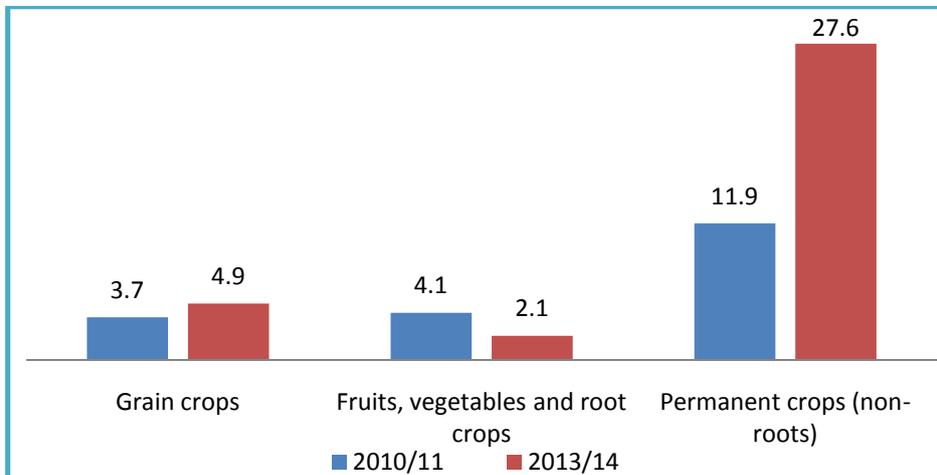
**Figure 2.8: Relative expansion of agricultural lands among commercial and smallholder farmers over the GTP period (percentage change over the past four years)**



Source: Computed based on CSA data.

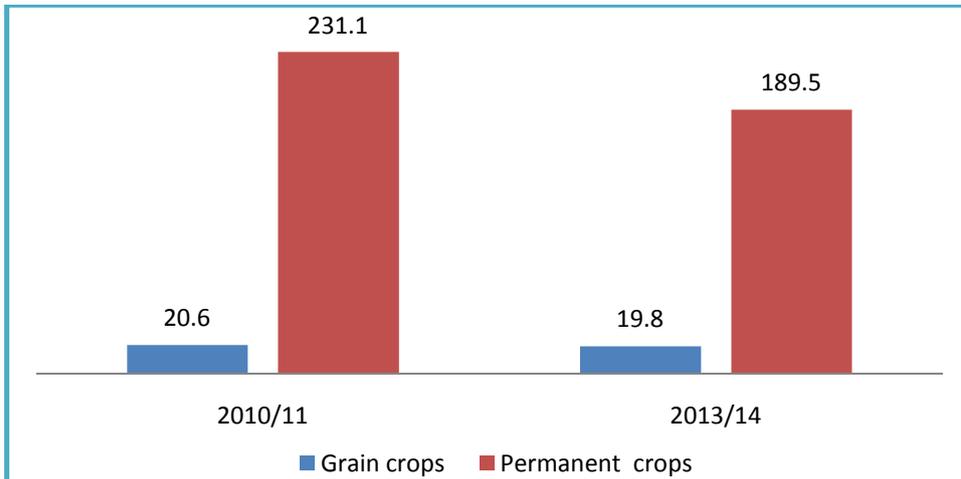
Note: please note that this chart compares farm lands actually cultivated by the two groups. There will be huge disparity (in favour of commercial farmers) if the comparison changes in terms of farm lands owned.

**Figure 2.9: Agricultural Farm Lands managed by Commercial farmers (as percentage share of total agricultural farm lands)**



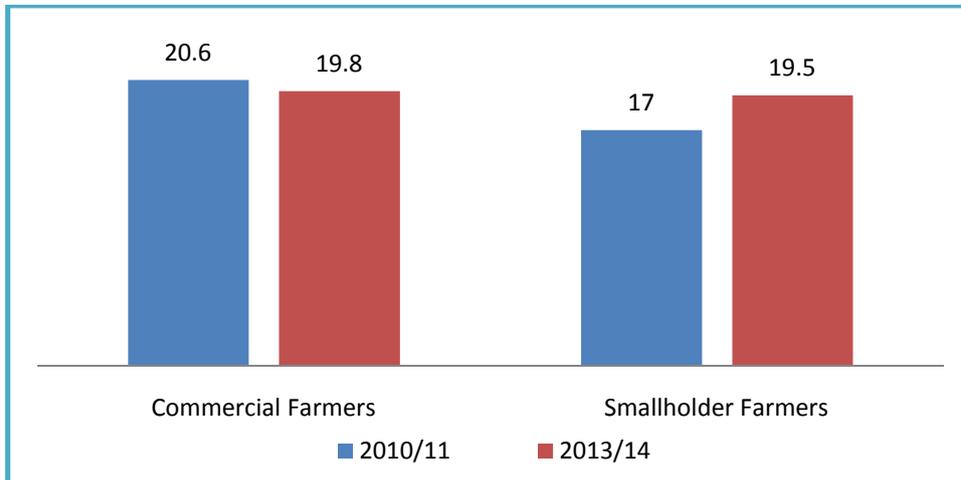
Despite the relatively fast expansion in agricultural lands, changes in land productivity among commercial farmers are either stagnant or declining. As shown below in Figure 2.10, over the past four years average land productivity declined from 20.6 qt./ha to 19.8 qt./ha in grain production and from 231 qt./ha to 190 qt./ha in production of all other permanent crops. This decline in land productivity of commercial farmers does not hold true to changes in land productivity among small farmers. Despite the small decline in grain productivity among commercial farmers, smallholders managed to increase their land productivity by 14.7% over the past four years (see Figure 2.11).

**Figure 2.10: Progress in Agricultural Land Productivity among Commercial farmers (Qt./ha)**



Source: Computed based on CSA (2011) and CSA, 2013/14

**Figure 2.11: Land Productivity among Commercial and Smallholder Farmers (Qt./ha)**



Source: Computed based on CSA (2011) and CSA, 2013/14

## 2.4. Performance Assessment of Small Farmers

### 2.4.1. Land Use and Farm Structure among Small Farmers over the GTP period

Ethiopia is a country of small farmers. At the beginning of the GTP period in 2010/11 12.6 million farm households were reported to exist and lead their farm-based livelihood. Over the past four years this number increased by 17.9% and reached 14.9 million by 2013/14. This implies that every year about 566,000 new farmers join the smallholder sector (CSA reports).

The majority of the new comers, however, cultivate farms too small to lead even a subsistence livelihood. CSA statistics indicate that a little over 50% of the 2.3 million farmers that joined the smallholder sector over the past four years cultivated farms less than 0.5 ha. Another 22% of the new farm households managed to cultivate farms between 0.5 and 1 hectare. On the

other hand, farmers who managed to cultivate between one and two hectares and above two hectares constitute only 18% and 9%, respectively, (see Table 2.1) of the new entrants who joined the sector over the past four years.

**Table 2.1: Change in Farm Structure among smallholder farmers over the GTP period**

	Number of farm households ('000)		Percentage change	Percentage share of new entrants
	2009/10	2013/14		
<0.1 ha	610	817	33.97	9.15
0.1 - 0.5	3,040	3,980	30.91	41.52
0.51 - 1.0	3,167	3,662	15.63	21.87
1.01 - 2.0	3,517	3,928	11.69	18.15
2.01 - 5.0	2,120	2,284	7.71	7.22
5.01 - 10.0	179	218	21.52	1.70
> 10.0 ha	15	23	58.23	0.38
<b>Total</b>	<b>12,648</b>	<b>14,912</b>	<b>17.91</b>	<b>100.00</b>

Source: Computed based on CSA reports

Along with the close to 2.3 million new entrants, smallholder farmers brought 2.07 million hectares of new lands to agriculture over the past four years, of which close to one million hectares (48% of the new land) is allocated to cultivation of temporary food crops. This implies that only 0.43 ha of new farm lands per new entrant farm households was brought for temporary food crops production.

Following temporary food crops, most of farmers allocated their new land to feed their livestock and plant permanent crops and trees, which accounted for 25%, 7% and 5% of the new land, respectively.

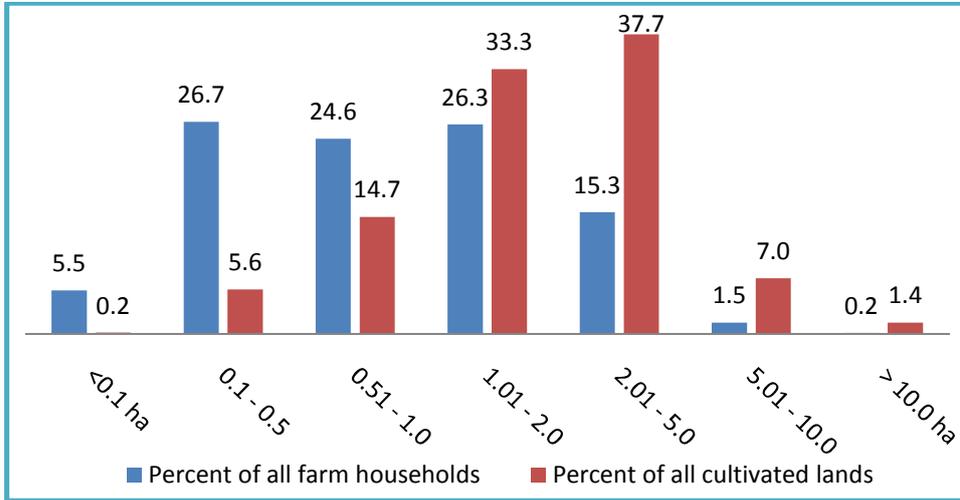
**Table 2.2: Changes in Land Use among Smallholder Farmers over the GTP period**

	Land Use ('000 ha)		Changes in Land Use	
	2009/10	2013/14	('000 ha)	Percent
Temporary crop land	11,892	12,891	999	48
Permanent cropland	1,110	1,255	145	7
Fallow land	634	717	83	4
Grazing land	1,427	1,936	509	25
Wood land	159	269	110	5
Other land use	634	861	226	11
<b>Total</b>	<b>15,856</b>	<b>17,929</b>	<b>2,073</b>	<b>100</b>

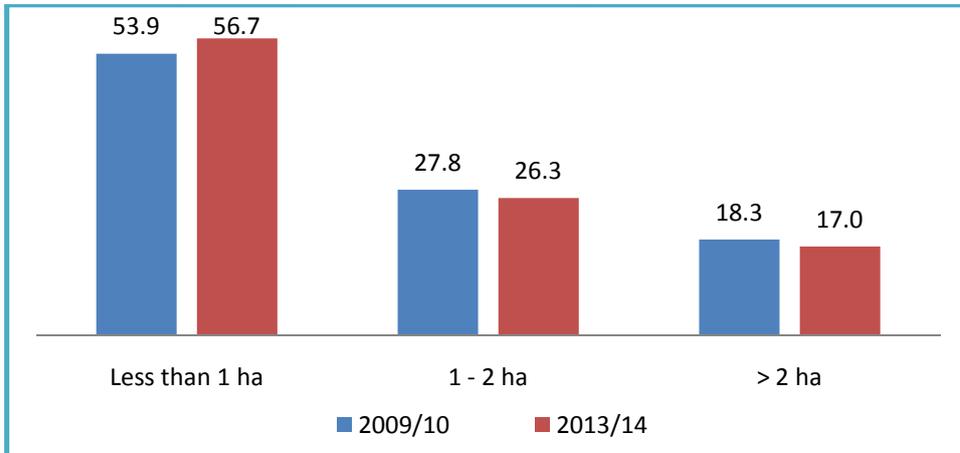
Source: Computed based on CSA reports.

Figure 2.12 below provides further details on the structure of farms and access to farmlands among smallholder farmers. About 32% of the close to 15 million smallholder farmers cultivated only 5.8% of the total farm lands cultivated in 2013/14. Similarly close to 25% of farmers managed to cultivate only 15% of total farm lands cultivated in that year. This trend changes when the size of farm cultivated by a farm household exceeds a hectare in general two hectares in particular. All in all 57% of smallholders cultivated only 21% of farmlands cultivated in 2013/14. On the other hand, over 79% of cultivated farm lands in 2013/14 were managed by only 43% of farmers. This statistics challenges the widely held opinion that farmlands in Ethiopia distribute equitably. The data rather depicts the fact that farm lands are generally small but with wide disparity in access.

**Figure 2.12: The Structure of Ethiopian Farms (2013/14)**

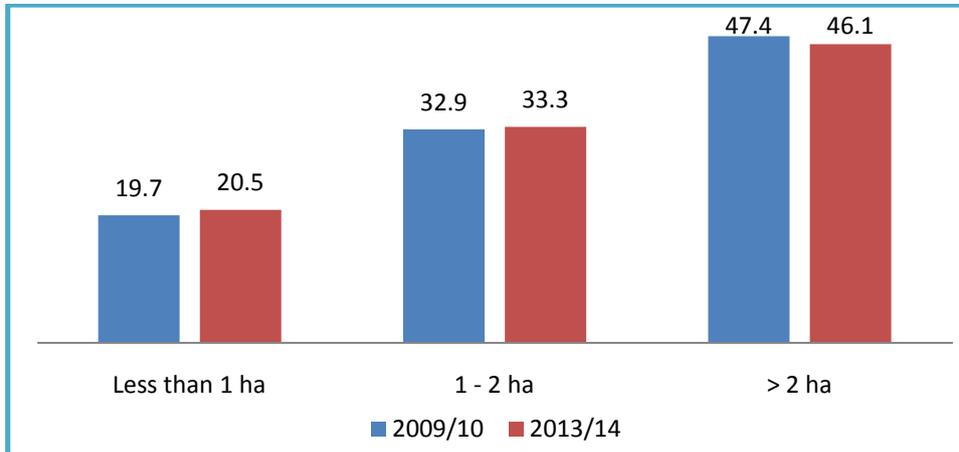


**Figure 2.13. Trends in the Structure of Ethiopian farms over the GTP period (percent of all farmers)**



Note: In 2009/10 and 2013/14, 12.6 and 14.9 million smallholders were reported to engage in food crops production.

**Figure 2.14: Trends in the Structure of Ethiopian farms (percent of total cultivated lands)**



Note: Total cultivated land (by annual crops) in 2009/10 and 2013/14 were 11.9 and 12.9 million hectares.

#### 2.4.2. Food Crops Production over the GTP period

The agricultural sector has been growing consistently over the past decade. Favorable rains, increased use of fertilizer and improved seeds, lowered impact of pests and diseases and some expansion in cultivated area have contributed to the favorable outcome (CSA, 2013). Following the trend from the previous years, the 2013/14 agricultural year was good year. This report updates the performance of the agricultural sector in 2013/14 in relation to the beginning of the GTP as well as its target.

**Table 2.3: Production of Food Crops over the past few years**

	Cultivated land ('000 ha)			Production ('000 metric ton)		
	Cereals	Pulses	Oilseeds	Cereals	Pulses	Oilseeds
2005/06	8,081	1,280	797	11,624	1,264	486
2006/07	8,462	1,355	759	12,866	1,562	513
2007/08	8,706	1,479	745	13,646	1,753	666
2008/09	8,770	1,551	855	14,496	1,927	656
2009/10	9,233	1,489	781	15,534	1,891	644
2010/11	9,690	1,357	775	17,761	1,953	634
2011/12	9,589	1,617	881	18,810	2,316	731
2012/13	9,601	1,863	818	19,651	2,751	727
2013/14	9,849	1,743	816	21,584	2,859	711

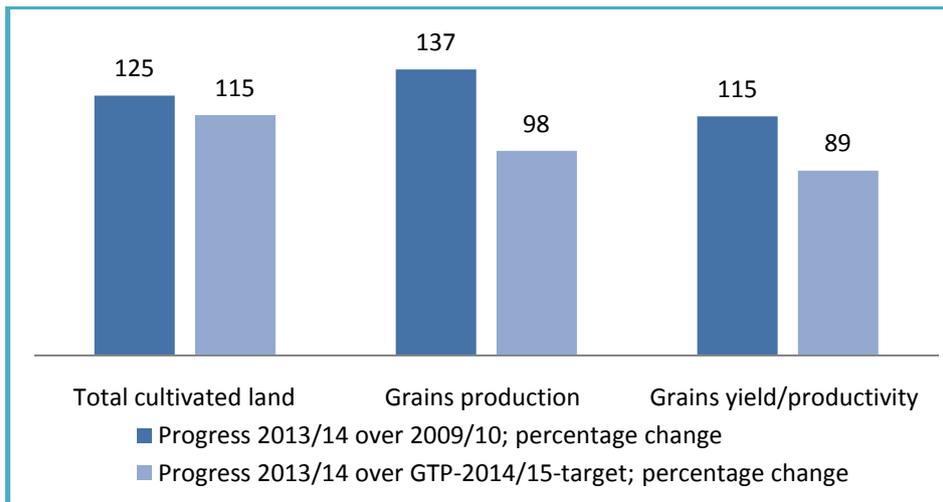
Source: CSA reports

Over the past four years grain production increased by 37% and reached 26,344,657 metric tons in the 2013/14 crop year, of which 4.5% is produced by commercial farmers. Compared to the base year (2009/10), the country managed to increase food crops production by 37%. Both expansions of farm land as well as increase in land productivity contributed for this improvement in food crop production. CSA statistics indicate that cultivated land and land productivity rose by 25% and 15%, respectively, over the past four years.

Ethiopia continues to bring farmlands faster than even the plan its policy makers set for the country. The country exceeded the target set for 2014/2015 (the last year of the GTP) by 15% by 2013/2014. However, in terms of production, the achievement in 2013/14 is only close to the target set for 2014/15. The performance in terms of land productivity is, on the other hand, not high. If the trend over the past four years continue, the country might not achieve the 22 qt./ha target it set for land productivity in food crops production. The average grain yield in 2013/14 was 19.5 qt./ha which lags behind the target (at the end of

the GTP period) on average by 1.9 qt./ha or 11% from the target. It seems difficult to overcome this in a single year.

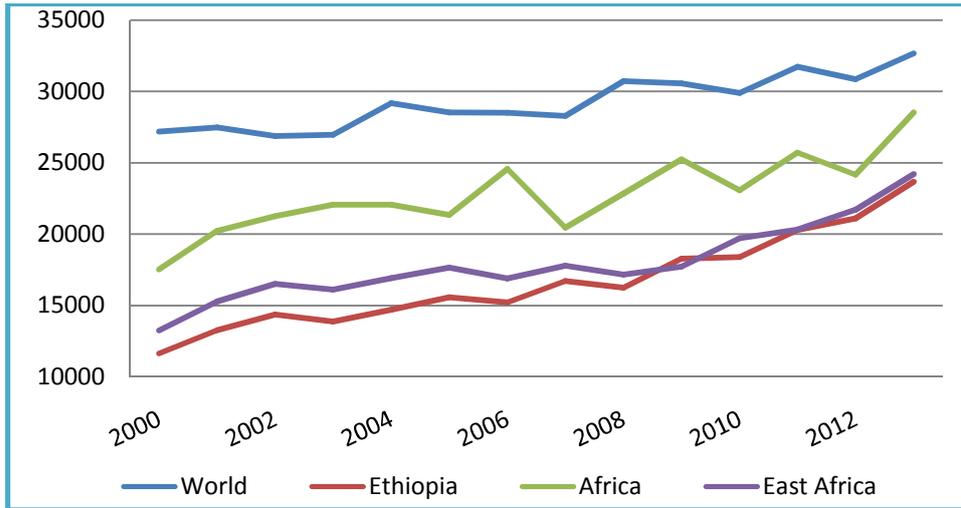
**Figure 2.15: Progress in food crops production and productivity over the GTP period**



Crop productivity is a very important indicator for the contemporary performance and effectiveness of the agricultural sector of the Ethiopian economy. Beyond affecting the agricultural production, its impact extends to the odds and pace of the transformation of the agricultural sector to the overall economy of the country. Though progress in crop productivity fails to meet the GTP target, productivity of major crops has been increasing over the past decade. FAO statistics, for instance, indicate that land productivity in wheat and maize crops doubled over the past one and half decades (see Figures 2.16 & 17). This is an impressive achievement even compared to the progress made at the global and African levels. However, due to a low base, Ethiopia's land productivity in wheat and maize crops is still only 72% and 58% of the global average, respectively. Official statistics, however, indicate a high probability for

Ethiopia to level out its productivity gap (to the global average) in a few years time (at least in these two major crops that get government/ATA priority).

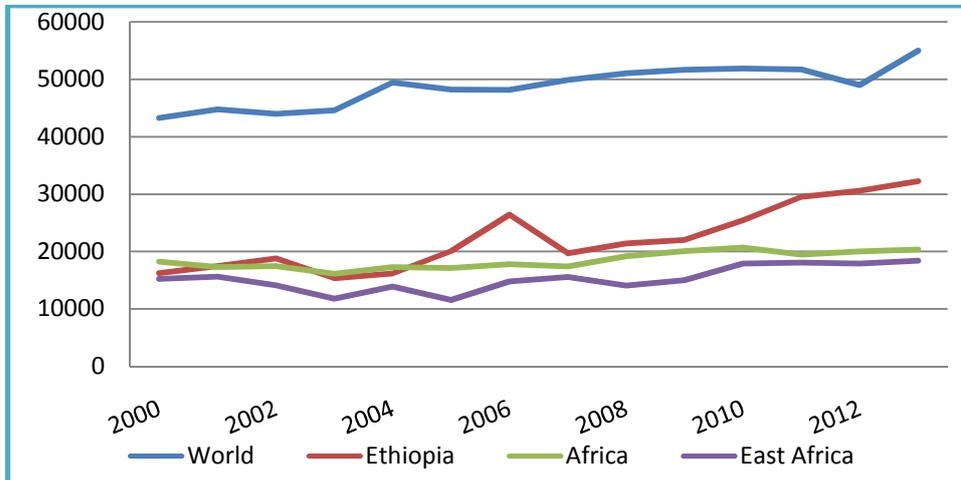
**Figure 2.16: Trends in Wheat Productivity - Ethiopia versus other countries (100 gms/ha)**



Source: Computed based on FAOSTAT

Agricultural productivity in Ethiopia has two contrasting features between land and labor productivity. Progress has been made in land productivity but translating this into labor productivity seems difficult and challenging. The challenge largely reflects the structural problems of the overall economy rather than the specific sector-related problems. Smallholder agriculture continues with its subsistence nature whereas the major source of livelihood for the growing rural population continues with farming sub-economic holdings, therefore, the options for raising farm labor productivity will not change much.

**Figure 2.17: Trends in Maize Productivity (Ethiopia versus other countries (100 gms/ha))**



Source: Computed based on FAOSTAT

### 2.4.3. Production of Non-food crops

This section briefly looks at progress in production of non-food crops that include coffee, chat, root crops, and vegetables and fruits. During the major season of the survey year a total of 1,985,725 hectares of land were covered by vegetables, root crops and permanent crops both in small holder farms and commercial farms. These crops in total occupied 8.81% of total agricultural lands in the 2013/14 crop year<sup>4</sup>.

In terms of cultivated land, smallholder farmers accounted for 82% (or 1.63 million hectares) of the total cultivated lands by non-food crops. CSA reports

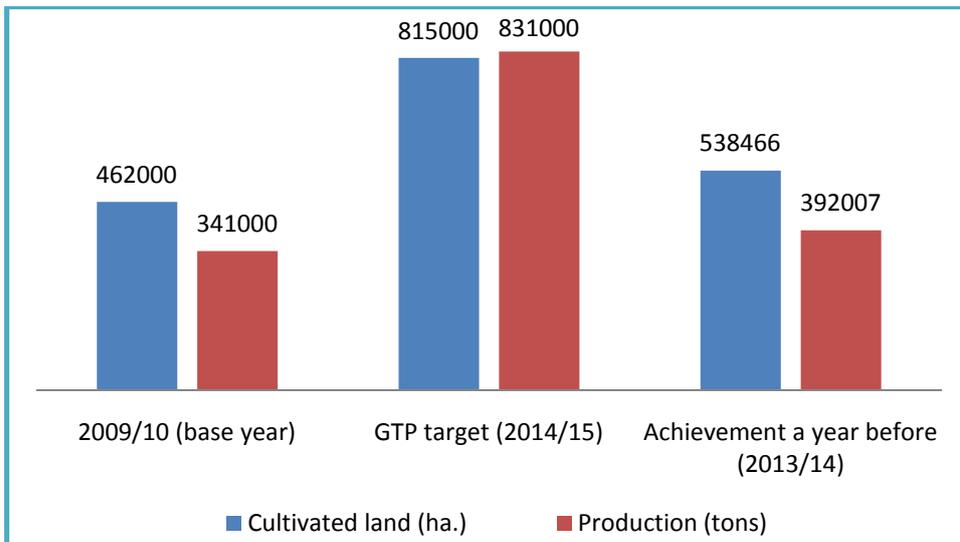
<sup>4</sup> The remaining 81.2% is the share of food crops in which cereals accounts 72%, pulses 12.8% and oil seeds about 6%.

also show that about 23.4 million farm households produced one or more of these crops in 2013/14 agricultural year.

**2.4.3.1. Coffee and Chat**

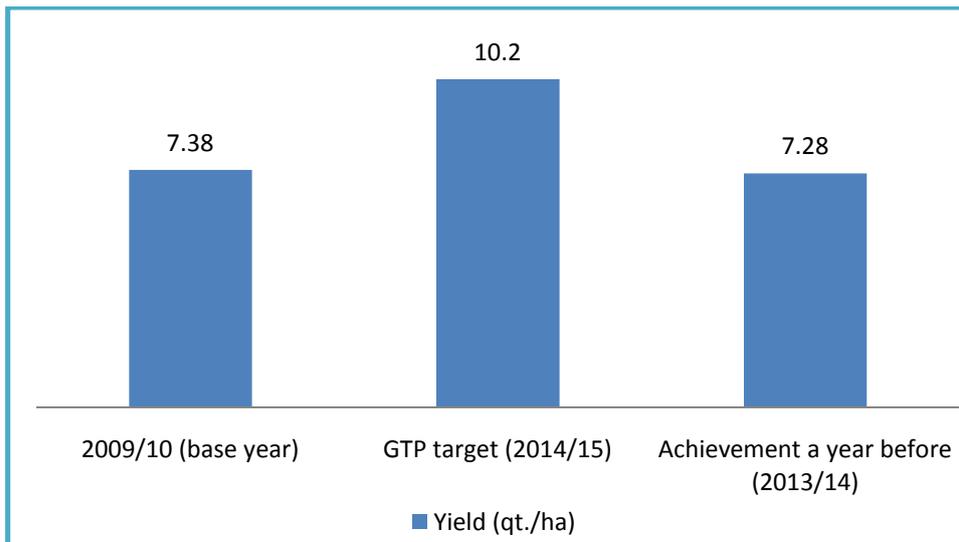
Coffee and chat are major cash earning stimulant crops for large number of smallholder farmers. About a third and one fifth of the close to 15 million smallholder farmers engage in coffee and chat crops production, respectively. CSA statistics indicate that about 4.5 and 2.8 million smallholder farmers engaged in coffee and chat production in the 2013/14 agricultural year. Coffee and Chat producers harvested 3.9 and 2.5 million quintals of coffee and chat from 538,466 and 222,078 hectares of farm lands. This implies that on average smallholders produced 7.3 and 11.0 quintals of coffee and 11.0 quintals of chat from a hectare of farm land.

**Figure 2.18: Progress in coffee production over the GTP period**



Despite some improvement in coffee production over the past few years, Ethiopia seems to miss its GTP target for coffee production. Four years after the GTP began, agricultural land covered by coffee plants is 538,466 ha, which is only 66% of the GTP target. What is worse is the progress of coffee production which missed the GTP target by over 53%. The country plans to produce 8.3 million quintals of coffee at the end of the GTP period in 2014/15, but production in 2013/14 (i.e. a year before the end of the GTP period) is only 3.9 million quintals, 48% of the target. As shown in Figure 2.18 the stagnant yield level explains the poor performance of the coffee sector. At the end of the GTP the nation aims to produce 10.2 quintals of coffee from a hectare of land but achievement in 2013/14 was only 7.3 qt./ha, which is virtually the same as the level reported at the beginning of the GTP period.

**Figure 2.19: Progress in coffee yield (qt./ha) over the GTP period**



#### 2.4.3.2. Vegetable and Fruits production

Vegetables and fruits are not common in Ethiopian diets, and this is reflected in their production. CSA reports that about 6.1 and 3.6 million smallholders produce vegetables and fruit crops respectively in the 2013/14 agricultural year. This numbers seems very large but they produce at only a subsistence level with a small fraction of farmlands under their management. On average, vegetable producers cultivate only 0.026 hectares of farmland, while fruit producers cultivate 0.02 hectares. On these farm lands, they produced on average 1.17 and 1.38 quintals of different vegetables and fruit crops respectively in the 2013/14 agricultural year.

Vegetables took up about 1.18 % of the area of all crops at national level. However, of the total estimated area used for vegetables, the lion share of about 67.53% and 21.37% was used for Red peppers and Ethiopian Cabbage, respectively. Production of vegetables contributes 2.0% of the total crops production (CSA, 2013/14).

About 71,507.13 hectares of land is cultivated for fruit crops in Ethiopia. Bananas contributed the most of the land at about 57.84% of the fruit crop area followed by mangoes that contributed 14.47% of the area (CSA, 2013/14).

In terms of progress towards the GTP target, the country planned to produce 5.9 million tons of fruits and vegetables from 358,000 hectares of farm lands at the end of the GTP period. Achievements in terms of cultivated lands and production never exceeded 247,997 ha (69%) and 1.5 million tons (25%) in 2013/14, a year before the end of the GTP period.

## **2.5. Use of Improved Farm Inputs: Progress towards and challenges during the GTP period**

Ultimately, any improvement in the livelihoods of smallholder farmers begins by raising their productivity levels. This in turn depends on a range of internal (farm-level) and external factors. Apart from weather conditions, farmers participation in government extension programs/packages, use of irrigation, improved seeds and fertilizers as well as their efficiency of output markets in transmitting the bulk share of consumers' price are key factors in affecting farm land productivity as well as farmers' income. In the following section, each of these variables are discussed briefly.

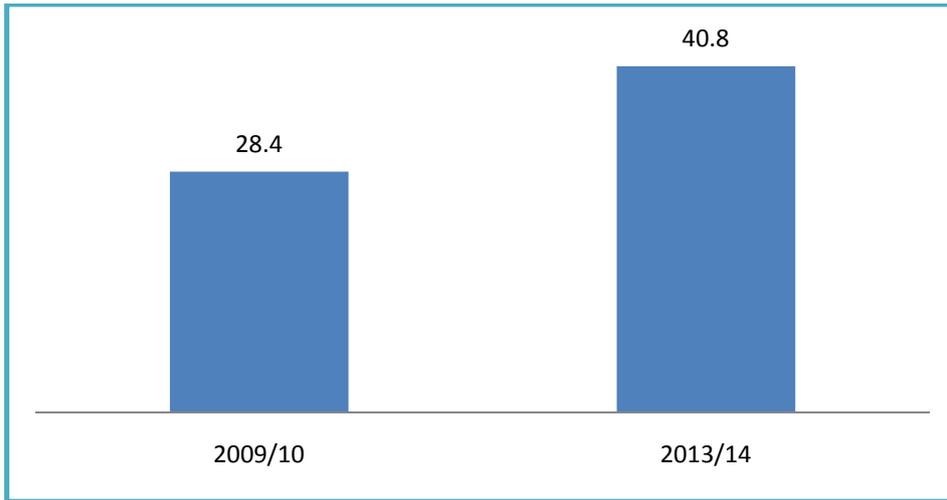
### **2.5.1. Use of Inorganic Fertilizers**

Low soil fertility is a major obstacle that holds back Ethiopia's farmers from realizing the full potential of their agricultural lands. Along with low use of inorganic fertilizers, many factors that include the widespread soil degradation, deforestation, and a lack of appropriate land management strategies appropriate to specific terrain or landscape contributed for low productivity of farm lands. The ever increasing import and use of inorganic chemical fertilizers have contributed to help lessen the impact of these factors.

The use of inorganic fertilizers and the extent of the area using these fertilizers have increased over the past decade. CSA surveys indicate that the amount of inorganic fertilizer applied was to area under crops estimated to be more than 7.1 million quintals for smallholders during the survey year 2013/14 (CSA, 2013/14). This was just 4.2 million at the beginning of the GTP period (in 2009/10). Similarly, area in which fertilizer was applied increased from 3.2 million ha. to 5.8 million ha during the same period. In other words, between

2009/10 and 2013/14, the number of inorganic fertilizer users and the area applied with such chemicals increased by 69% and 81%, respectively.

**Figure 2.20: Fertilized farm lands (% of all cultivated farm lands)**

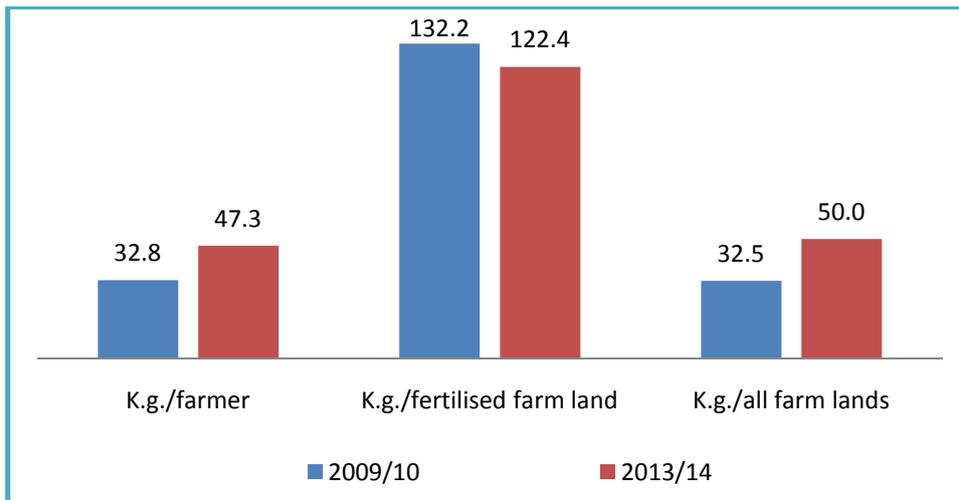


Source: Computed based on CSA reports

The share of chemically fertilized area in total cultivated land has also increased over the past few years. In 2013/14 crop year, the proportion of cultivated land under chemical fertilizer reached around 41 % of the total cultivated cropped area (Figure 2.20). There is also a corresponding progress in terms of the amount of fertilizer use. In 2009/10, for instance, only 33 K.g. of fertilizer (DAP, Urea or a mixture of both) was applied on a hectare of cultivated farm lands or by an average farm household. After four years (in 2013/14), the intensity of use increased to 47 Kg./farm household and 50 K.g./hectare of cultivated farm land. The intensity of fertilizer use, however, depicts a different picture if we consider fertilizer use only to actually fertilized farm lands. As shown in Figure 2.21 below, on average about 132 K.g. of chemical fertilizers were applied on a hectare of

fertilized farm lands in 2009/10. This however, declined by 8% to 122 kilogram in 2013/14.

**Figure 2.21: Progress in the use of inorganic fertilizers over the GTP period**



Source: Computed based on CSA reports

### 2.5.1.1. Challenges in the Expansion of Fertilizer Use

Despite some progress over the past few years, fertilizer use in Ethiopia is still small. To reach the GTP target, the country must double its consumption to 1.4 million metric tons. In addition to the need to expand the use of fertilizers, it is also absolutely necessary to enhance the efficiency and sustainability of fertilizer use in Ethiopia. Yet increasing fertilizer use and efficiency is not easy. Fertilizer has a number of characteristics that affect both demand and supply, undermining the profitability of using and selling fertilizer. These characteristics can slow the development of efficient fertilizer markets, or—in extreme cases—they can lead to outright market failure (Druihe and Barreiro-Hurlé, 2012).

Ethiopia follows state-led fertilizer policy. Despite a lack of data to assess the sustainability and efficiency of this system, fertilizer imports and use have been increased over the past decade. Yet, still there are many challenges both on the demand and supply side of fertilizer use.

The major problems on the demand side are threefold: first, fertilizer is a highly specialized input, the efficient use of which generally requires the use of similarly specialized complementary inputs (for example, improved varieties). This is expected to affect the efficiency of and return from fertilizer use. Second, most consumers of fertilizer in Ethiopia (smallholder farmers) are both widely dispersed and poor which challenges both the demand and supply of fertilizers. Third, as fertilizer is applied in rainfed agriculture, year-to-year fluctuations in rainfall patterns contribute to high inter-year variability in demand for fertilizer. Similarly, the small, highly fragmented nature of Ethiopian farms could affect the demand for and profitability of fertilizer use.

On the supply side, different problems that range from the nature of the commodity (bulky) to market structures could affect fertilizer supply and use among smallholder farmers. Fertilizer is a bulky input, with relatively low value for volume, so transport costs are a relatively large share of final selling prices. On the other hand, high intra- and inter-year variability in demand for fertilizer means that carryover stocks fluctuate greatly, adding to working capital demands and market risks. These and other characteristics of fertilizer, the market, and the users make the development of a sustainable and efficient fertilizer market a daunting challenge for Ethiopian policy makers.

### **2.5.2. Use of Improved Seed**

Providing farmers with increased access to improved, high-quality seeds is a key step toward raising individual yields throughout Ethiopia, and thereby overall national production. In conjunction with other inputs, high-yielding seed varieties

can significantly impact crop output, sometimes producing up to three times the volume of recycled seeds. This level of productivity enhancement offers an obvious potential impact to Ethiopia's smallholder farmers (ATA, 2014).

The amount of improved seed and the extent of the area under application, although increasing from year to year, remains very low and has not yet been widely practiced by small holder farmers. The total volume of improved seeds used in 2013/14 was estimated to be 414,717 quintals which was applied on 1,003,144 hectare of farm lands (CSA, 2013/14). This represents only 4.4% and 8.1% of all seeds applied and cultivated farm lands, respectively. On the other hand, close of 12% of grain producing smallholders applied improved seeds in the 2013/14 crop year<sup>5</sup>.

The use of improved seeds in Ethiopia is not only low but it is also limited to few crops. While close to 22% of cereal producers were reported to use improved seeds, the proportion of improved seed users among producers of pulse and oilseeds is only 1% and less than 0.5%, respectively. Even among cereal producers, improved seeds use is quite limited to a few crops. Three crops, namely maize, tef, and wheat accounted for 80%, 10% and 9%, respectively, of farm lands cultivated by improved seeds (Figure 2.24). Despite their dominance in the use of improved seeds, only 28% of maize growers, 8% of wheat growers and 5% of tef growers applied improved seeds on a total of 40%, 6% and 3% of their farm lands respectively (Figure 2.23).

The disparity in the use of improved seeds among different crops in general and specifically between maize and other crops is quite striking. It is not only the disparity but also the progress in the use of improved seeds that is quite different. In 2011/12, only 20% of the area cultivated with maize, 4% of the

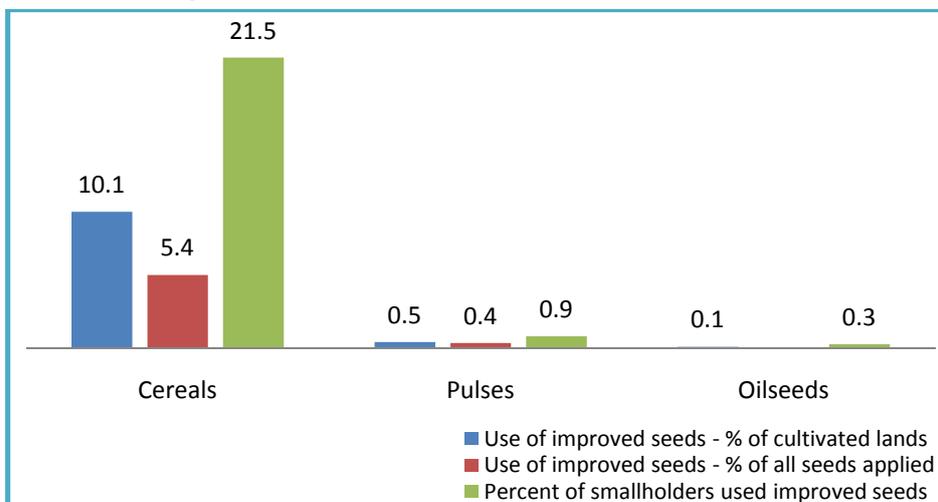
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<sup>5</sup> This was, however, significantly higher than the 3% of the farmers in Ethiopia reported to use improved seed in 2011 (CSA and MoFED, 2011, cited by Husmann, 2014).

wheat area and less than 1% of the tef area were cultivated with seed from the formal sector (CSA, 2012b, cited by Husmann 2014). This indicates that improved seed use (measured in terms of area planted) among maize growers doubled within three years, while it grew only by 50% among wheat growers. This disparity in use and progress are partly explained by differences in the institutional setup of the seed sector especially the high degree of participation of the private sector in maize seed sector.

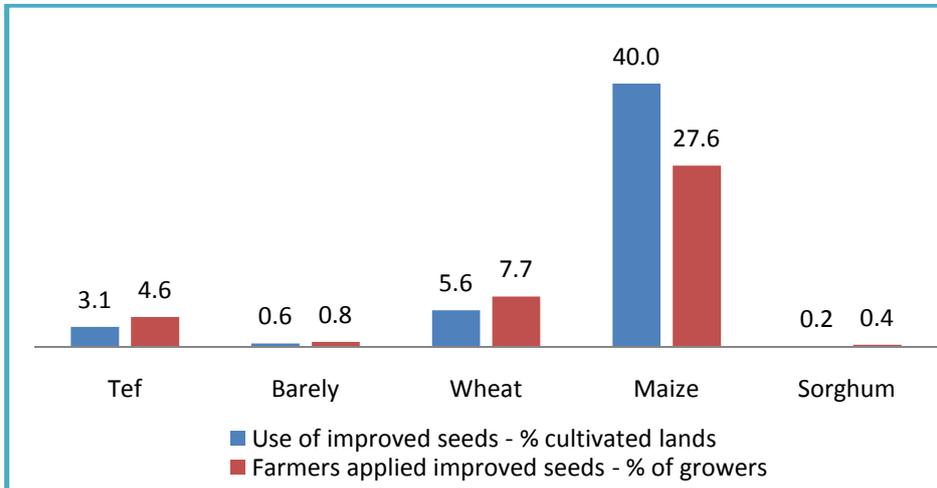
The private seed enterprises in Ethiopia mainly focus on hybrid maize production because it offers the highest profit margins. For this reason, supply of hybrid maize seeds improved considerably from 88,000 quintals in 2006/7 to 357,000 quintals in 2010/11 Private companies now produce about 40% of the hybrid maize seed sold in the country (Alemu, 2011, Dalberg Global Development Advisors, 2012, cited, Husmann, 2014).

**Figure 2.22: The prevalence of improved seeds use in 2013/14 crop year**



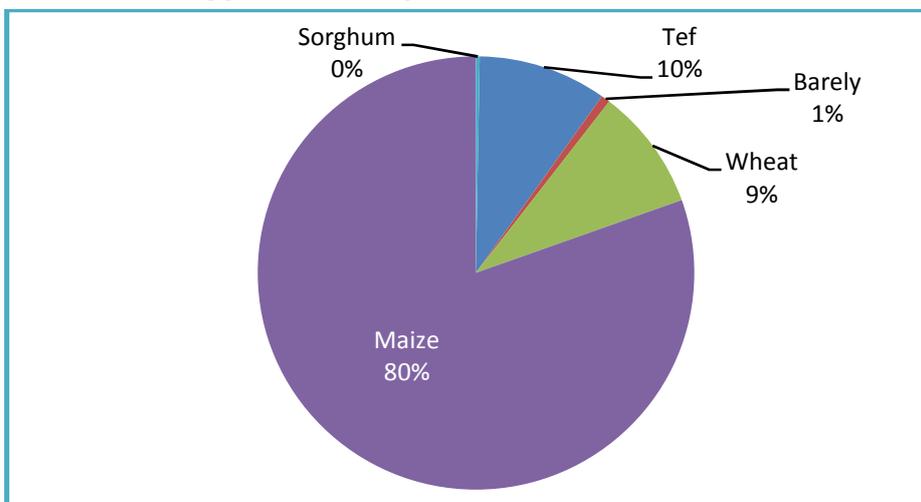
Source: Computed based on CSA reports

**Figure 2.23: The use of improve seeds among different cereal crops**



Source: Computed based on CSA reports

**Figure 2.24: The share of different cereal crops in total farm lands applied with improved seeds**



Source: Computed based on CSA reports

### 2.5.2.1. Challenges and problems in the seed sector

The Ethiopian seed sector must confront a number of challenges that include production, supply and distribution of quality and certified seeds. The Ministry of Agriculture, for instance, projected to distribute 3.6 million quintals of improved seed in the 2014/15 crop year but it has received a demand of only 2.2 million quintals from regions, which declined 0.5 million quintals from the previous year's demand. This was caused by the amount of unsold stored seeds at the seed enterprises (Fortune Newspaper, 2015). Also, as discussed above, the actual use of improved seeds in 2013/14 was estimated to be 414,717 quintals, which is only about 17% of reported demand for improved seeds in that year.

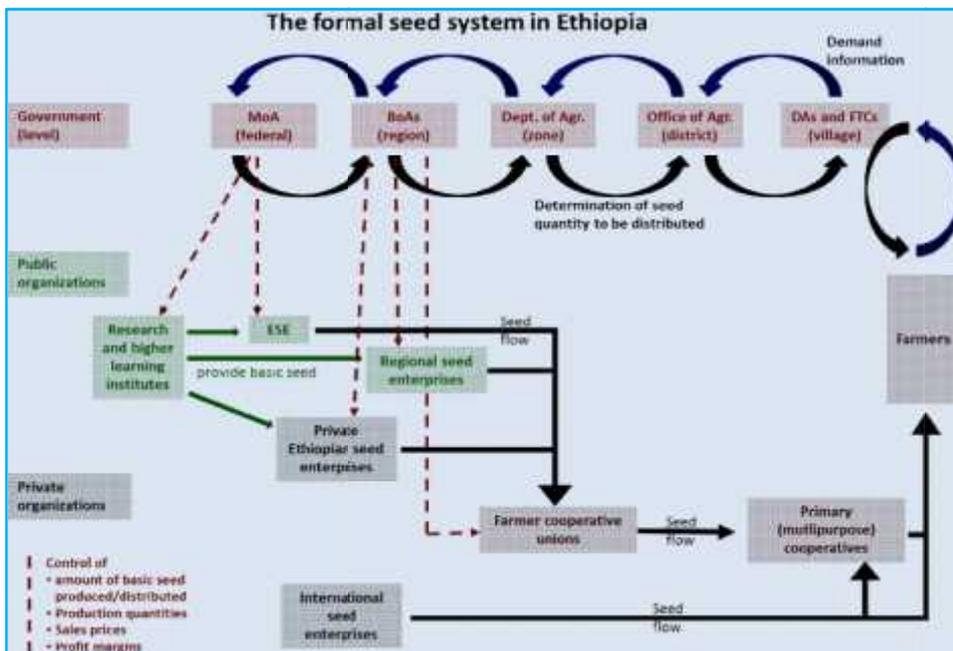
Contrary to the farmers' complaints about the inaccessibility of improved seeds, the amount of seed, which is left over from distribution, has been increasing significantly during the last four years. The amount of seed that was not distributed to the farmers in 2010/11 fiscal year was 270,476qt but it increased to 378,216qt the following year. The amount went even higher in 2012/13 to 759,454qt but slightly declined to 549,474qt during the last fiscal year (ibid).

In general, the discrepancy in seed demand, supply, and use is very large and quite common in the Ethiopian seed sector. If the stated demand is much higher than seed production, the question arises what prevents private seed companies from increasing investments in seed production to tap this market? Even before that, why is there a huge amount of carryover or unsold seeds?

The answer to these questions lies in the institutional setting governing seed production and distribution in Ethiopia. As illustrated in 2.25 below, the Ethiopian seed system is quite complex. The process of seed production starts with an assessment of seed demand, which is carried out by the Development

Agents (DAs) on *kebele* level. Information on seed demand is then passed up the government administration ladder and collected by the Bureaus of Agriculture (BoA) and the MoA. Based on this information the MoA orders the quantity of production of various crops at the ESE, and the BoAs determine production portfolios for the regional public seed enterprises and the private seed companies in the area. (Husmann (2014).

**Figure 2.25: Institutional setup of formal seed system in Ethiopia.**



Source: adopted from Husmann (2014)

All Ethiopian seed companies – public and private – get their pre-basic seed from public research institutes. Only the two international seed companies operate with their own varieties. This is of great importance because getting pre-basic seed from national research institutes comes with a contract entailing

a clause that obliges the companies to sell all produced seed back to the government – at prices to be determined by the government and often announced on short notice.

The MoA determines the quantities of seed to be distributed to each region on the basis of the demand assessment and the BoAs define the quantities for each Zone and so forth. Seed distribution is usually managed by farmer cooperative unions who bring the seed to the zones and the primary (multipurpose) cooperatives that pick the seed up in the zonal warehouses and bring it to the *woredas* and *kebeles*. Unions charge for transport, uploading and unloading but they make only small profits for seed distribution, as these profit margins are determined by the regional governments (Husmann, 2014).

An important implication of this seed system is the lack of agro-dealers because seed distribution is organized in one government-controlled distribution channel. This has important implications also for agro-dealers outside this system as it makes it extremely difficult and expensive for them to market agricultural inputs other than large agglomerations (*ibid*). The problems in the Ethiopian seed sector are not new but documented well in different studies. A diagnostic study by the Bill and Melinda Gates Foundation, for instance, noted that the seed policy environment discourages entry, constrains the growth of existing private players, and provides insufficient safeguards for long-term investment (Bill and Melinda Gates Foundation, 2010). Key obstacles include unreliable basic seed supply, limited access to breeder seed, insufficiently robust seed certification, and public domination of seed commercialization (e.g., branding, pricing, and distribution) (*ibid*, 2010).

The seed sector is not only suffers from these chronic institutional and policy problems that make access to improved seeds difficult, but also from administrative inefficiencies that largely attributed for a large amount of

produced but undistributed seeds. Based on information from the MOA, a recent newsletter cited three major reasons for the increasing amount of leftover seeds. The report indicates that farmers' preferences, which are always changing, unexpected weather change occurring before the seeds are distributed to farmers, which forces them to sow normal seeds, and late delivery of seeds by farmers who grow improved seeds under contracts from the seed enterprises (these farmers, called out-growers, are paid 15pc premium by the enterprise) contributed to the leftover seeds (Fortune Newspaper, 2015).

Researchers in the field, however, provide different explanations for these inefficiencies. Tadesse Dessalegn (PhD), technical coordinator of East African Agricultural Products, a research institute established by Ethiopia, Kenya, and Uganda for Regional Centre of Excellence, cited poor demand assessment made by seed producers (to identify which type of seed is needed in which areas) is the major reason for the increasing amount of left over seed. "Many varieties of seeds that are produced at the enterprises are demanded less by the farmers," he said (ibid).

Cooperatives are less interested in selling the seeds as they do not have a good incentive from the government because they are service oriented. They are discouraged not to have a good marketing strategy that will increase the number of farmers who use improved seed. (ibid).

Because of the low level of improved seeds use in the country and the potential impact they have on enhancing agricultural production and productivity, Ethiopia doesn't deserve more time in sorting out these problems or drawing feasible and practical institutional mechanisms and procedures to deal with this problem. It is only time that will tell the outcome of existing efforts undertaken by the ATA to correct the problems in the Ethiopian seeds sector. A successful seed sector, however, demands a coordinated series of efforts, including seed research and breeding, maintenance of foundation seeds, multiplication of improved or certified seeds, and the creation of efficient distribution networks.

## 2.6. Production of Livestock and Livestock Products

### 2.6.1. Livestock Production

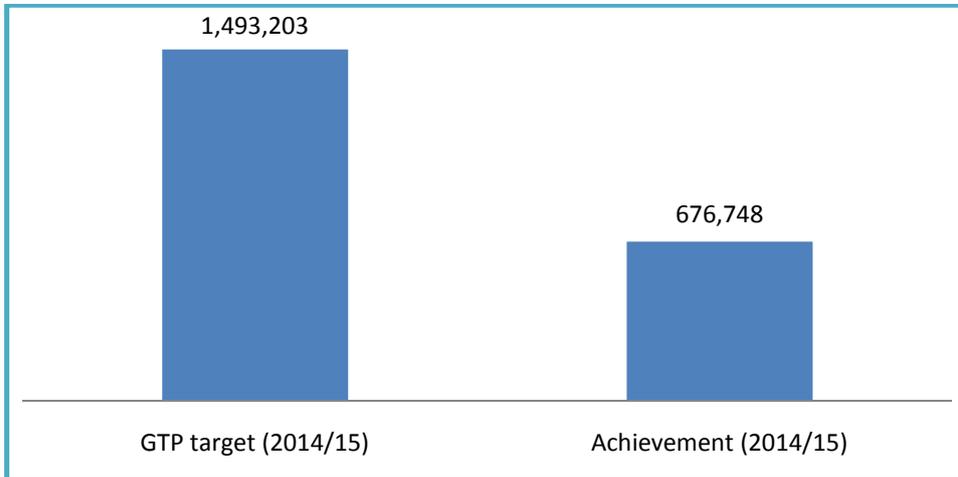
Ethiopia is endowed with a huge amount of livestock resources and animal genetic diversity. CSA agricultural sample surveys indicate that about 56.7 million cattle, 29.3 million sheep, 29.1 million goats and 56.9 million poultry exist among smallholder farmers in rural sedentary areas of the country (CSA, 2014/15) <sup>6</sup>. In spite of these huge livestock resources, the country has so far failed to benefit from these resources due to policy, institutions, and technical and socio-cultural factors. Livestock, for instance, only contributes 21% to the Agricultural GDP and less than 10% to the total GDP in 2013/14 agricultural year. During the same year the livestock sector grew only by 2.1% while the crop sector grew by 6.6% (NBE, 2013/14).

The majority of Ethiopian livestock are indigenous breeds. The share of hybrid and exotic breeds, however, is only 0.22%, 1.34% 0.04% and 4.05% for the reported cattle, sheep, goats and poultry populations respectively (CSA, 2014/15). In Figure 2.26, the GTP achievement in terms of increasing the number of improved hybrid cattle breeds is only 45% complete. In 2009/10 the country planned to increase the number of improved hybrid cattle breeds to close to 1.5 million by 2014/15, but CSA reports shows that the actual number in 2014/15 is only 676,748.

The very low share of exotic and hybrid breeds in Ethiopia's livestock population, along with other factors like poor feeding and management practices, leads to low production of livestock products in the country.

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<sup>6</sup> The number of livestock and its products shown in all tables do not include large scale dairy farms, fattening, etc. owned by investors, cooperatives and other institutions. It also excludes urban area livestock numbers and its products.

**Figure 2.26: Number of improved hybrid cattle breeds**

Source: MoFED (2009/10) and CSA (2014/15)

The milk production of a local cow is limited to an average of 1.35 liter/day with a short lactation period. This low productivity contributed to the low level of milk production. As shown in Table 2.4 the estimate of total cow milk production for the rural sedentary areas of the country during 2014/15 was close to only 3.07 billion liters (CSA). This is very low in view of the reported 11 million milking cows that exist in the country.

Cross-breed animals, improved pasture, forage seeds and the implementation of the animal extension package are helpful to heighten this very low productivity. Therefore, it is recommended that cross-breeding ranches and improved pasture and forage seed production centers should be established in each Regional State, based on the feasibility studies (Goshu, 2005).

Another important venue to improve milk production is to strengthen the extension system and provide educational and training services to smallholder dairy farmers. It is also important to combine and streamline such technical

support with marketing supports along the whole value chain. It is important to learn from the past rich experiences of the Kenyan dairy sector.

Production and productivity in the Ethiopian smallholder poultry sector is also very low. The average number of eggs laid per hen per egg-laying period for an indigenous hen was only 12; whereas hybrid and exotic breeds produce 25 and 107 eggs per hen per egg-laying period (see Table 2.4). The sad point is that only one of every ten egg-laying hens are either of exotic or hybrid breeds.

**Table 2.4: Production and productivity of livestock products among smallholders in Ethiopia (2013/14)**

	2013/14
<b>Cow milk</b>	
production (million liter)	3,070
Average daily milk production (lit./cow/day)	1.35
<b>Camel milk</b>	
production (million liter)	230.5
average daily milk production (lit./cow)	4.08
<b>Egg production</b>	
Total egg production	
Indigenous breeds (million)	93.8
Exotic and Hybrid breeds (million)	12.8
Productivity (number of eggs laid per hen per egg- laying period)	
Indigenous breeds	12
Hybrid breeds	25
Exotic breeds	107

Source: Computed based on CSA reports

### **Box 2.1: New Kenya Cooperative Creameries (KCC) Provides Extension Service to Dairy Farmers**

The New Kenya Co-operative Creameries (KCC), with 11 dairy processing factories and cooling plants, is the largest dairy business in East Africa. KCC operates throughout the dairy value chain from purchasing raw milk from farmers, to processing it into various premium milk products (e.g., fresh milk, cheese, yogurt, powdered milk), to marketing and selling these products.

KCC provides extensive educational and training services to the dairy farmers from which it sources raw milk. Field officers train farmers in clean, hygienic milk production and quality management (including on-farm testing of raw milk). These extension services not only benefit farmers – enabling them to produce a high-quality product that KCC will purchase, thereby improving their incomes – but also KCC, as it ensures the quality and quantity of their supply of raw milk.

*Source: KCC website, cited from Bill and Melinda Foundation (2010).*

## **2.7. Agricultural Export and Import over the GTP Period**

### **2.7.1. Agricultural Imports**

Ethiopia's export sector is dominated by agricultural commodities which could be broadly classified as traditional export commodities and non-traditional export commodities. The first group consists of coffee, oil seeds and pulses which generate the bulk of export proceeds both historically as well as in recent years<sup>7</sup>. Fruits and vegetables, meat and meat products, flowers, and live animals could be included in the second group.

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<sup>7</sup> Hides and skins were also major traditional agricultural export commodities, but their export was prohibited in recent years to encourage export of semi-processed and finished products leather products.

Similarly, Ethiopia imports billions worth of agricultural products. As shown in Table 2.5 below, Ethiopia imported a range of agricultural food products and live animals. Grain import, however, constitutes the bulk share of this group. Over the past decade Ethiopia imports of food and live animals increased consistently from around 2 billion to its peak of 13 billion Birr in 2011/12. Since then, however, it has declined a bit to 8 billion Birr in 2013/14. During the past decade import of food and live animals accounted for an average of 5.3% of the value of total imports. This, however, varies between a little above 3% in 2010/11 and 2013/14 to as high as 8.6% during the international food price hikes in 2008/9.

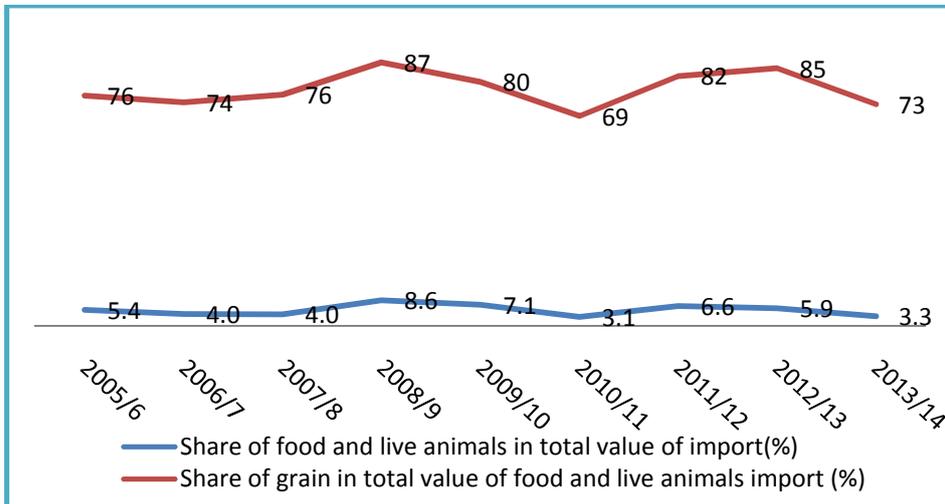
**Table 2.5: Value of imports over the past few years (Thousands Birr)**

	Agricultural imports			All imports (agriculture and non-agriculture)
	Food and Live Animals (including grains)	Grains	Fertilizers	
2005/6	2,139,779	1,621,232	1,180,768	39,873,075
2006/7	1,799,700	1,323,878	933,867	45,126,438
2007/8	2,499,134	1,902,765	2,828,101	63,146,946
2008/9	7,251,053	6,285,857	3,008,355	84,677,193
2009/10	7,713,047	6,190,933	3,221,932	108,956,272
2010/11	3,966,149	2,739,632	5,665,260	128,693,362
2011/12	12,692,391	10,436,910	10,503,430	191,587,139
2012/13	11,635,650	9,865,215	5,332,244	196,871,016
2013/14	8,238,991	6,010,350	7,482,467	251,047,518

Source: NBE, 2013/14

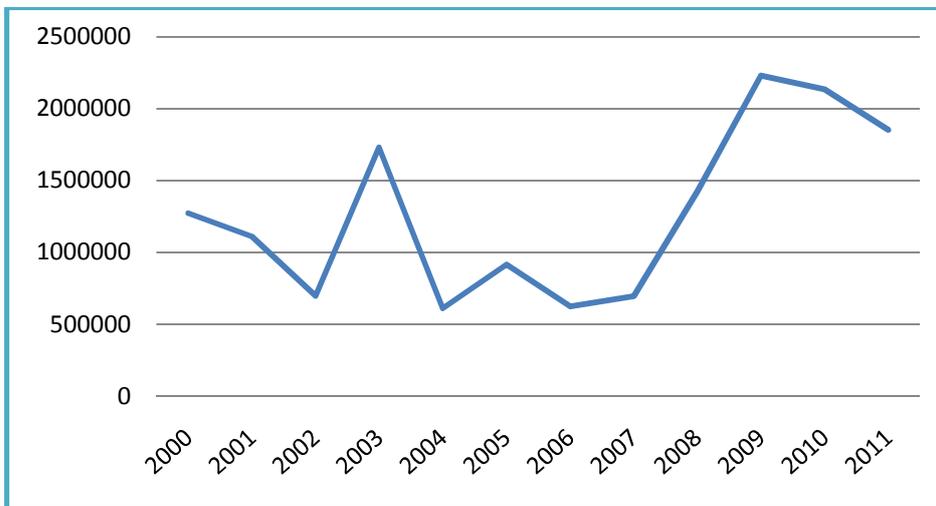
Import of food grains accounted for the bulk of food and live animal import. As shown in Table 2.5 and Figure 2.27, Ethiopia imports grains worth an average of 5.2 billion Birr every year between 2005/6 and 2013/14; which accounted for an average of 80% of the total value of food and live animals import.

**Figure 2.27: Trends in Agricultural imports over the past decade (Percentage Share of in total imports)**



Source: Computed based on NBE 2013/14.

**Figure 2.28: Cereals Import over the past decade (tonnes)**

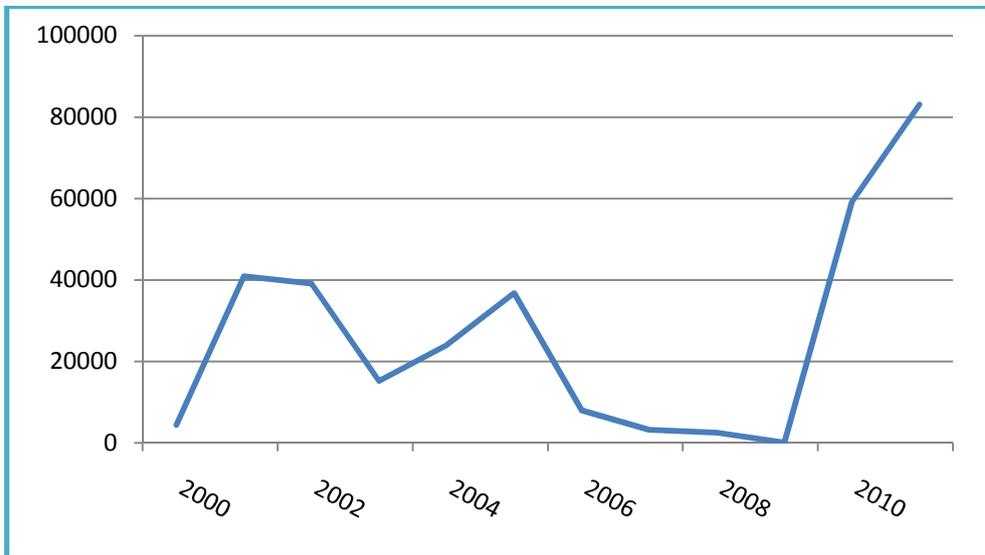


Source: Computed based on FAO data base

In terms of quantity, Ethiopia imports on average 1.27 million metric tons of cereals (mainly wheat) per year between 2000 and 2011 (see Table 2.5). Similarly, cereal exports increased especially since 2009 and reached about 800,000 quintals in 2010/11 (Figure 2.29).

Despite the two million tons of cereal import, the country reported to lose close to 5 to 6 million tons of cereals (about 20% to 25 of the total production) due to post-harvest losses during harvesting, storage and transportation operations (MoARD, 2014).

**Figure 2.29: Cereals Export over the past decade (tonnes)**



Source: Computed based on FAO data base

### 2.7.2. Agricultural Exports

As discussed earlier, Ethiopia's export constitutes of mainly agricultural products. Agricultural export contributed around 80% of the total proceeds of Ethiopia's export over the GTP period. Foreign exchange earnings over the GTP period increased by 63% from 2 billion USD in 2009/10 to 3.26 billion USD in 2013/14. Despite this relative increase in export revenue, the average share of processed and non-processed agricultural exports in total export proceeds remain unchanged at close to 6% and 69%, respectively.

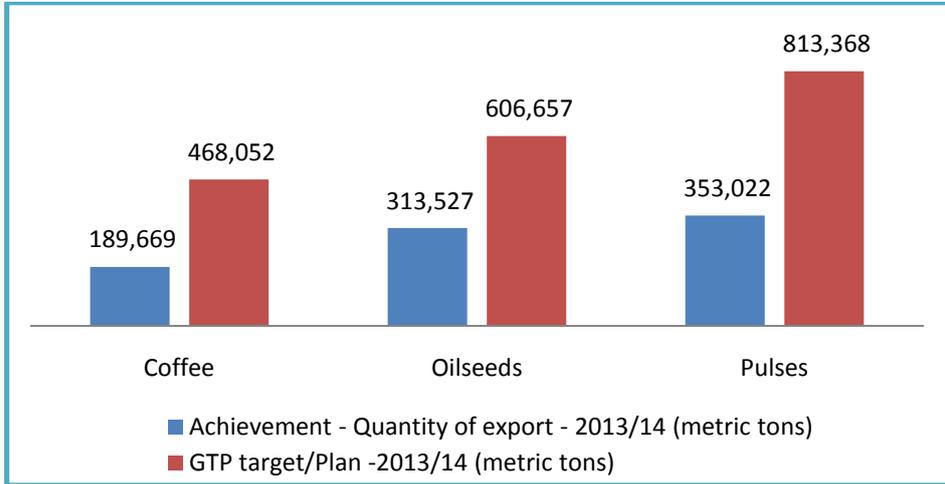
**Table 2.6: Developments in Agricultural exports over the GTP period**

	2009/10	2010/11	2011/12	2012/13	2013/14
Total exports (million USD)	2.00	2.75	3.15	3.08	3.26
Share of non-agricultural exports (Gold & Others*)	19.7%	24.8%	25.7%	26.1%	21.6%
Share of Agricultural exports					
Processed (leather, leather products, meat and meat products)	4.5%	6.1%	6.0%	6.3%	6.3%
Non-processed	75.8%	69.1%	68.3%	67.6%	72.1%
Of which, share of					
Coffee	34.8%	44.4%	38.9%	35.8%	30.4%
Flower	11.2%	9.2%	9.1%	8.9%	8.5%

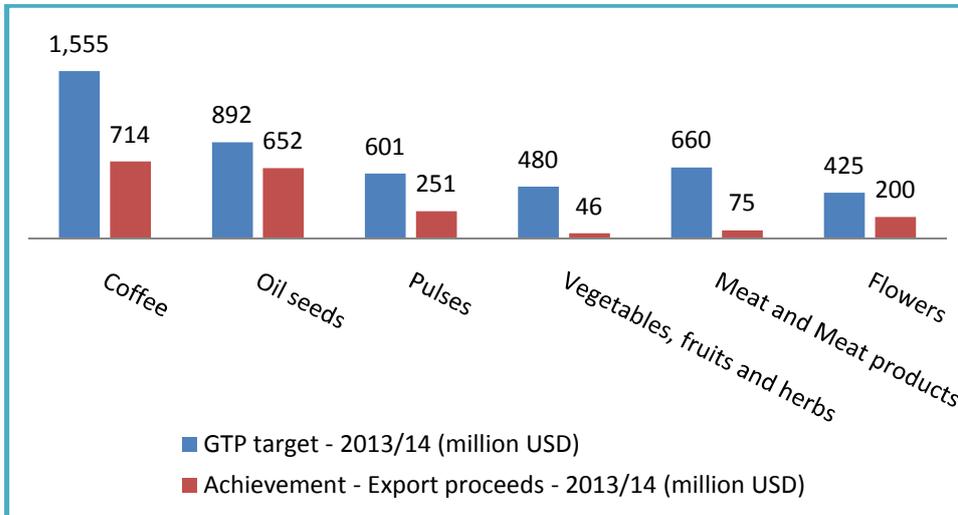
Source: Computed from NBE annual reports.

Note: Others principally implies non-agricultural exports like textiles and textile products but also include agricultural products like Bees' wax and honey.

**Figure 2.30: Progress in export of traditional export commodities during the GTP period**



**Figure 2.31: Progress in export of agricultural commodities during the GTP period**



Source: Computed based on NBE and GTP reports.

Though the country manages to increase its export proceeds from traditional agricultural export commodities like coffee, oilseeds, and pulses by 35%, 82% and 93% over the past four years, this increase is far lower than the GTP target for 2013/14. The export proceeds from these crops are only 46%, 73% and 42%, respectively; of the targets set 2013/2014. The performance for relatively new agricultural commodities is far lower than the traditional commodities. As shown in Table 2.6 above, export proceeds from vegetables and fruits and meat and meat products in 2013/14 is only 10% and 11%, respectively, of the 2013/14 target. It is only for flower exports that the country achieves close to 50% of the GTP target. Export revenue from flowers was 200 million USD in 2013/14 which is 47% of the target for that year.

In general, the country failed to achieve its GTP target for agricultural export by a considerable margin. While the ambitious target might explain part of the failure, it is also important to revisit the planning process as well as real constraints and challenges that hold back the growth of the export of these commodities. Any effort towards this goal should focus on constraints within the sector like low productivity and on use of modern inputs. The efforts should also focus on policy and institutional factors along the whole value chain of these commodities that expected to affect the incentives and motivation of different actors in general and particularly the producers.



## **Chapter III**

### **The Manufacturing Industry: Recent Developments and Trends in the Structural Change within the Sector**

#### **3.1. Introduction**

The thematic issue addresses Economic Transformation in Ethiopia. This chapter presents the recent performances of the Large and Medium Scale Manufacturing Industries (LMSMI) and the trends in the structural changes witnessed within the manufacturing industries over the last several years. In order to track the structural changes the study made use of the share of the manufacturing industry in GDP and key variables by sub-sectors including number of enterprises, employment, value added, investment, and export receipts by sub-sector over time.

It is believed that this review would help to improve the industrial development planning and implementation during GTP II.

#### **3.2. Recent Developments in the Manufacturing Industry**

This section reviews the recent developments registered by the LMSMI. In this exercise the study pays specific attention to assessing the performances of priority manufacturing industries during the first three GTP implementation years.

### 3.2.1. GDP, Industry and Manufacturing Value Added

Real GDP has grown, on average, by 10.1 percent per annum over the period (2010/11- 2013/14). Industry and manufacturing value added have grown, on average, by 20 percent and 14.5 percent per annum, respectively, over the same period. The relatively higher average annual growth rate observed in the industry sector over the manufacturing sub-sector was largely due to higher growth of construction, a sub-sector of industry.

Of the industry sub-sectors, the contribution of the construction subsector has been the highest and that of the manufacturing sub-sector the lowest. Among the components of the manufacturing sub-sector, the growth by large and medium scale was higher than small and cottage industries.

With respect to the share in the economy, industry, manufacturing, LMSMI and small scale and cottage industries have accounted, on average, for about 12.4 percent, 4.2 percent, 2.9 percent and 1.3 percent, respectively, over the first four GTP implementation years. The current share of the manufacturing sector in the total economy has shown no significant change from the rate observed in the distant past indicating a very slow transformation of the manufacturing industry. Despite the provision of great attention by the government to the small enterprises, the share of the sub-sector has remained insignificant for a long time (Table 3.1).

Contrary to the plan, the share of the manufacturing sub-sector in the industry sector declined from 37 percent in 2009/10 to 30.8 percent in 2013/14 implying that the importance of the sub-sector has been eroded.

Overall, the trends in the share of the manufacturing industry in the economy during the GTP implementation period have not shown a marked departure

from the base year (2009/10) share. This could be attributable to a variety of reasons including the time taking nature of undertaking manufacturing undertaking, and the relatively lower rate of investment in the sector, compared with that of the construction sector.

**Table 3.1: GDP by sector, share & growth in %**

Indicators	2009/10	2010/11	2011/12	2012/13	2013/14	First 4 GTP implementation years, period average
<b>real growth rate, in %</b>						
GDP	10.5	11.4	8.7	9.8	10.4	10.1
Industry	10.8	15.0	19.7	24.0	21.2	20.0
Manufacturing	11.6	17.9	11.8	16.9	11.3	14.5
Large and Medium Scale	13.6	14.1	15.9	24.2	14.5	17.2
Small Scale and Cottage	7	7.2	4.2	1.9	3.1	4.1
<b>Share, in %</b>						
Industry/GDP	12.9	10.5	11.5	13.0	14.3	12.3
Manufacturing /Industry	37	38.1	35.6	33.6	30.8	34.5
Manufacturing /GDP	3.6	4.0	4.1	4.4	4.4	4.2
Large and Medium Scale/GDP	2.4	2.6	2.8	3.1	3.2	2.9
Small Scale and Cottage/GDP	1.3	1.4	1.3	1.2	1.2	1.3

Source: MOFED

### 3.2.2. Regional Distribution of Manufacturing Industries

Ensuring equitable regional development is a major objective of the investment policy of the government. To that end, the government provide investment incentives which vary as one goes from the centre to the periphery. For instance tax holidays for the same kind of investment is longer for those investing in developing regions than those operating in relatively developed areas.

Industrial establishments have started expanding into regions. According to Table 3.2, in 2009/10, about 2/5<sup>th</sup> of the manufacturing industries were located in Addis Ababa. However, this share declined to 1/3<sup>rd</sup> in 2012/13 indicating increased expansion of manufacturing industries towards regions due to a variety of reasons. The major ones include expanded coverage of infrastructure, proximity to raw materials and regional markets, better incentive schemes, cheaper land lease and labour, etc.

The regional distribution of manufacturing industries remained more or less at the same level as the past years except for the share of the Addis Ababa city administration and the Oromia regional state. The share of Addis Ababa has been declining significantly while that of Oromia increasing. Yet the most industrialized region is Addis Ababa city administration while the least is the Gambella regional state.

In almost all regional states and city administrations, the most available manufacturing industries are food and beverage and non-metals. Since some of the established industries in regional states obtain their critical raw materials from other regions, the main location decision is influenced by proximity to the growing regional markets for consumer goods.

Historical records indicate that manufacturing industries were initially established along the Addis Ababa- Adama- Dire Dawa Djibouti corridor owing to the of railway line connecting Addis Ababa with Djibouti. Following the expansion of infrastructure in the other parts of the country, industrial enterprises have started locating themselves in the different parts of the country where either proximity to basic raw materials or markets were the major decision influencing factors.

**Table 3.2: Distribution of LMSM Industries by Region**

Regions	2009/10		2010/11		Manufacturing industries in order of importance			2012/13	
	No	share in %	No	share in %	1st	2nd	3rd	No	share in %
Tigray	199	9.2	200	9.2	Other non-metals	Food & Beverage	Fabricated metals, except machine and equipment	211	8.0
Afar	14	0.6	8	0.4	Other non-metals			18	0.7
Amhara	232	10.7	240	11.1	Other non-metals	Food & Beverage	Furniture	314	11.8
Oromia	451	20.8	506	23.3	Food & Beverage	Other non-metals		782	29.5
Somali	13	0.6	13	0.6	Food & Beverage	Furniture		29	1.1
Beni-Gumuz	3	0.1	2	0.1	Furniture			9	0.3
S.N.N.P	292	13.4	234	10.8	Furniture	Food & Beverage	Other non-metals	302	11.4
Gambella	4	0.2	1	0.0	Food & Beverage			1	0.0
Harari	28	1.3	22	1.0	Food & Beverage	Furniture	Other non-metals	30	1.1
Addis Ababa	875	40.3	874	40.3	Food & Beverage	Other non-metals	paper	882	33.2
Dire Dawa	61	2.8	70	3.2	Food & Beverage	Other non-metals		77	2.9
Country, Total	2172	100.0	2170	100.0				2,655	100.0

Source: CSA, various issues

### 3.2.3. Number of Enterprises

In general, the number of enterprises has increased from the base year. Compared with the base year, it slightly declined during the first GTP implementation year, but recovered during the second and third years. Except for the fabricated metals, and machinery and equipment, all priority sub-sectors have registered positive and significant growth in the number of enterprises entering into the sub-sector during the third year.

In terms of the share of enterprises by sub-sector, food and beverage, basic iron and steel, fabricated metals, motor vehicles sub sectors have declined in the third of GTP implementation year compared to the base year. The remaining priority sectors, however, have shown an increasing trend thereby indicating more new investors going into these increasing sub-sectors, the sunrise industries (Table 3.3).

**Table 3.3: Number of enterprises, share of priority sectors and growth in %**

Industrial groups	Base year, 2009/10	GTP 1st 3 year			Base year, 2009/10	GTP 1st 3 year			GTP 1st 3 year			
		2010/11	2011/12	2012/13		2010/11	2011/12	2012/13	2010/11	2011/12	2012/13	
	Number of enterprises				Share, in %				Growth in %			
Food & Beverages	572	686	640	687	26.3	31.6	26.1	25.9	19.9	-6.7	7.3	
Textiles	40	37	65	88	1.8	1.7	2.7	3.3	-7.5	75.7	35.4	
Leather	114	141	131	145	5.2	6.5	5.3	5.5	23.7	-7.1	10.7	
Chemicals	96	75	99	147	4.4	3.5	4.0	5.5	-21.9	32.0	48.5	
Basic Iron & steel	39	39	27	38	1.8	1.8	1.1	1.4	0.0	-30.8	40.7	
Fabricated Metals, Machinery & Equipment	169	147	210	194	7.8	6.8	8.6	7.3	-13.0	42.9	-7.6	
Motor Vehicles	11	8	8	11	0.5	0.4	0.3	0.4	-27.3	0.0	37.5	
Total, Manufacturing	2172	2,168	2,452	2,655	100.0	100.0	100.0	100.0	-0.2	13.1	8.3	

Source: CSA, various issues

### 3.2.4. Employment

Employment decreases in non- performing enterprises and uncompetitive enterprises and increases in well performing ones.

Despite the government's attention for the development of the manufacturing industry, especially during the GTP implementation period, the performance registered has been falling short of meeting the target set by GTP for the period. The total employment in the LMSMI increased from 185.1 thousand in 2009/10 to 276.9 thousand in 2012/13 depicting, an average annual growth of 15.9 per cent. The major contributors are rubber and plastic, textile, leather and other non-metallic industries. Of these sub-sectors, the growth registered by the rubber and plastic industry's contribution was so remarkable as to require further probe.

During the first three GTP implementation years, the employment generated by the major sub-sectors except the leather sub-sector has not been consistent. Contrary to the expectation, the employment generated by the food and beverage sub-sector declined from 60.1 thousand in 2009/10 to 52.4 thousand in 2012/13 losing about 7.7 thousand jobs in just three years. The employment registered in food and beverage, wearing apparel, basic iron, machinery and equipment, paper and printing industries in 2012/13 was less than the base year level (Table 3.4). Why do priority manufacturing sub-sectors which have been enjoying generous support and are based on local raw materials have kept losing employment over the last few years?

**Table 3.4: Employment by LMSMI during the first three GTP implementation years**

Industrial group	Base year	First three GTP Implementation years					
		Number			annual growth in %		
	2009/10	2010/11	2011/12	2012/13	2010/11	2011/12	2012/13
Food and Beverages	60,110	67,072	54,492	52,441	11.6	-18.8	-3.8
Tobacco	986	1,342	1,342	431	36.1	0.0	-67.9
Textiles	21,382	13,431	32,595	34,483	-37.2	142.7	5.8
Wearing Apparel, except Fur Apparel	9,342	5,802	11,669	8,016	-37.9	101.1	-31.3
Tanning and Dressing of Leather; Footwear, Luggage and Handbags	10,707	14,019	15,126	18,311	30.9	7.9	21.1
Wood and Cork, except Furniture	3,261	3,988	4,055	5,577	22.3	1.7	37.5
Paper, Paper Products and Printing	9,998	10,076	9,013	9,720	0.8	-10.5	7.8
Chemicals and Chemical Products	11,185	9,744	11,747	15,293	-12.9	20.6	30.2
Rubber and Plastic Products	13,859	10,984	12,745	63,527	-20.7	16.0	398.4
Other Non-Metallic Mineral Products	19,482	17,230	24,278	37,172	-11.6	40.9	53.1
Basic Iron and Steel Fabricated Metal Products except Machinery and Equipment	4,016	4,927	3,350	3,754	22.7	-32.0	12.1
Machinery and Equipment N.E.C.	9,977	6,040	8,421	13,396	-39.5	39.4	59.1
Machinery and Equipment N.E.C.	859	648	48	379	-24.6	-92.6	689.6
Motor Vehicles, Trailers & Semi-Trailer	1,671	1,623	1,584	5,168	-2.9	-2.4	226.3
Furniture; N.E.C.	8,251	6,471	7,623	9,186	-21.6	17.8	20.5
<b>Total</b>	<b>185,086</b>	<b>173,397</b>	<b>198,088</b>	<b>276,854</b>	<b>-6.3</b>	<b>14.2</b>	<b>39.8</b>

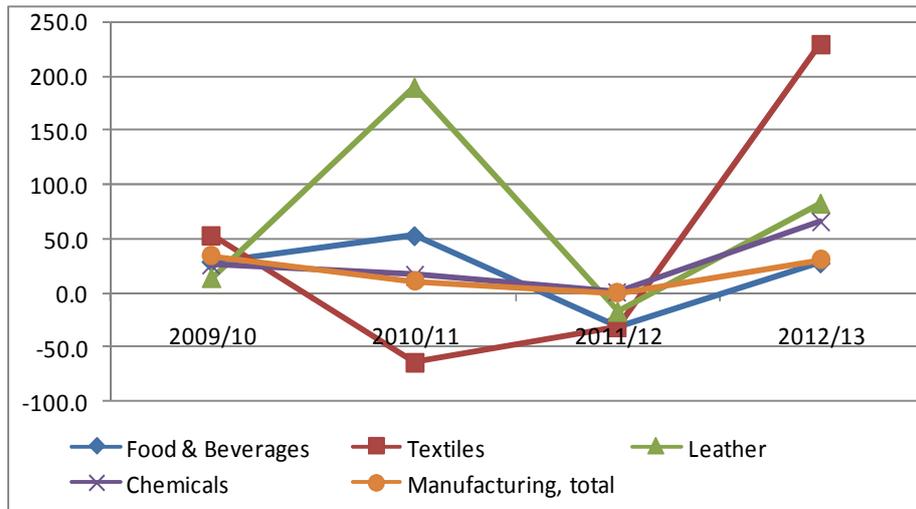
Source: CSA, various issues

Reports have shown that agriculture, the resource base of food processing manufacturing industries, performed well during the last decade and at the same time agro- processing industries received utmost government attention during the same period due to their linkages to the sector. However, the sub-sector did not generate employment (even lost) and foreign exchange as expected.

### 3.2.5. Value Added

Value added growth in real terms fluctuated during the first three GTP implementation years. The overall growth declined from 2009/10 to 2011/12 but it has started increasing since 2012/13. All the major sub-sectors have shown similar growth trend. At the same time, all the major sub-sectors have revealed remarkable performance since 2012/13, especially the textile sub-sector (Figure 3.1).

**Figure 3.1: Value Added, real growth in %**



Source: CSA, various issues

### 3.2.6. Labour Productivity

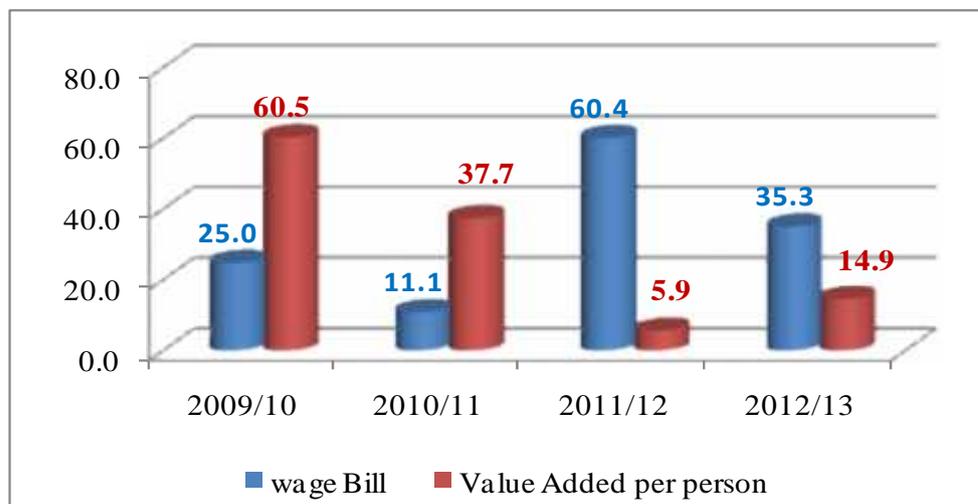
Labour productivity is measured as value added per person engaged. Labour productivity, in nominal terms, had been increasing during the first three GTP implementation years and reached Birr 135.3 thousand in 2012/13. Generally, labour productivity has been higher in capital intensive sub-sectors but lower in labour intensive sub-sector. This is because in capital intensive sub-sectors, workers have more capital to work with than in labour intensive industries. The overall labour productivity growth of the sector was higher than the average inflation rate for the year 2010/11 but lower for 2011/12 and 2013/14 entailing negative real productivity growth in these years (Table 3.5).

**Table 3.5: Value Added per person**

Industrial Group	Value Added, at current market price, per person, in 000 Birr				growth, in %		
	Base year, 2009/10	GTP first 3 years			GTP first 3 years		
		2010/11	2011/12	2012/13	2010/11	2011/12	2012/13
Food & Beverages	113.5	182.1	186.5	237.4	60.5	2.4	27.3
Tobacco	372.8	258.3	258.3	572.9	(30.7)	-	121.8
Textiles	42.4	28.9	9.9	32.1	(31.8)	(66.0)	226.2
Wearing Apparel	24.6	42.2	42.7	6.7	71.4	1.3	(84.2)
Leather	37.6	97.4	90.2	140.9	159.1	(7.4)	56.2
Wood	10.0	40.7	8.8	23.7	306.2	(78.4)	168.8
Paper & Printing	75.5	100.4	98.6	122.2	33.0	(1.9)	23.9
Chemicals	115.7	181.0	181.7	242.0	56.4	0.4	33.2
Rubber & Plastic	87.6	100.2	126.9	150.1	14.3	26.6	18.3
Other Non-Metallic Mineral	133.6	152.6	207.8	136.4	14.2	36.2	(34.4)
Basic Iron & Steel	102.4	170.4	251.8	256.3	66.5	47.8	1.8
Fabricated metals, Except Machinery & Equipment	116.7	(91.0)	246.2	218.9	(178.0)	(370.6)	(11.1)
Machinery and Equipment, N.E.C.	96.4	143.5	74.4	167.9	48.9	(48.1)	125.6
Motor Vehicles	205.2	156.3	338.3	356.7	(23.8)	116.4	5.4
Furniture, N.E.C.	63.4	52.2	112.7	73.9	(17.7)	116.1	(34.4)
<b>Total</b>	<b>92.8</b>	<b>127.8</b>	<b>135.3</b>	<b>155.4</b>	<b>37.7</b>	<b>5.9</b>	<b>14.9</b>

Theoretically, labour productivity and wage rate are directly related. According to Figure 3.2, wage bill growth which was far lower than growth in labour productivity in 2009/10 and 2010/11, because higher than labour productivity growth during the second and third GTP implementation years implying higher wage growth than productivity. This has implication, especially for labour intensive sub-sectors.

**Figure 3.2: Value Added per person and wage bill, nominal growth rate in %**



Source: CSA, various issues

### 3.2.7. Export

Looking at the export items one can see the extent of value addition in the sector. Obviously, exporting processed goods (value added) fetches better earnings than exporting of raw materials, and it also creates employment and income for workers since further value is added to otherwise exported in raw form.

The export structure of the country shows increasing concentration in a few items. Fluctuation in the international price would affect countries' whose export is concentrated in a few items than diversified ones.

According to the data, the combined share of the three major exporting sub-sectors increased from 81.1 percent in 2009/10 to 88 percent in 2012/13 indicating further concentration in these commodities.

Of the major exporting sub-sectors, leather fetches the lion's share. The share of the sub-sector in the total manufactured earnings increased from 36.3 percent in 2009/10 to 50.1 percent in 2012/13. It is followed by the food and beverage sub-sector. The food and beverage sub-sector's share, on the other hand, has been declining over time leaving room for the textile industry. The textile export receipt share which hit its bottom in 2010/11 has shown recovery since 2011/12 (Table 3.6).

The export to total sales ratio can indicate the degree of orientation of an enterprise. According to Table 3.7, the manufacturing sector has been depicting outward orientation since recently evidenced by increased export receipt to total sales ratio. For instance, the share of export receipt to the total sales revenue which was 3 percent in 2009/10 increased to 8.5 percent in 2012/13. The degree of outward orientation, however, varies from one sub-sector to the other. In 2012/13, for instance, the leather sub-sector received 63.4 percent of its total sales from export. The wearing apparel and textile sub-sectors follow leather in order of importance getting 38.1 percent and 27.4 percent, respectively, during the same year. The food and beverage sub-sector has been tilting towards inward production largely for the local market.

**Table 3.6: Export receipt to total sales and share of sub-sector, in %**

Sub-sectors	2009/10		2010/11		2011/12		2012/13	
	Export/ Total Sales	sub-sector export/total export						
Food & Beverages	1.78	23.41	5.47	34.08	7.03	30.74	4.43	18.96
Tobacco	0.45	0.36	0.47	0.12	0.47	0.06	0.29	0.05
Textiles	9.19	15.81	14.37	5.30	40.00	19.98	27.36	18.95
Wearing Apparel	12.92	7.38	3.58	0.36	21.53	3.44	38.14	2.20
Leather	36.27	41.86	52.36	44.75	49.54	41.92	63.35	50.09
Wood and Furniture	0.05	0.01	0.00	0.00	0.00	0.00	1.26	0.43
Paper and Printing	0.00	0.00	0.00	0.00	4.12	1.51	1.68	0.65
Chemicals	1.02	3.04	3.12	3.57	2.13	1.96	1.04	1.05
Rubber & Plastic	0.13	0.30	12.17	10.00	0.12	0.09	9.54	7.11
Other non- metallic Mineral	0.07	0.23	0.55	0.82	0.10	0.15	0.19	0.22
Basic Iron and Steel	2.42	3.21	1.29	0.91	0.00	0.00	0.00	-
Fabricated Metal products, Machinery and equipment	3.56	4.40	0.02	0.08	0.17	0.16	0.24	0.28
Motor Vehicles, Trailers and Semi-trailers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Total</b>	<b>3.03</b>	<b>100.00</b>	<b>6.05</b>	<b>100.00</b>	<b>8.74</b>	<b>100.00</b>	<b>8.47</b>	<b>100.00</b>

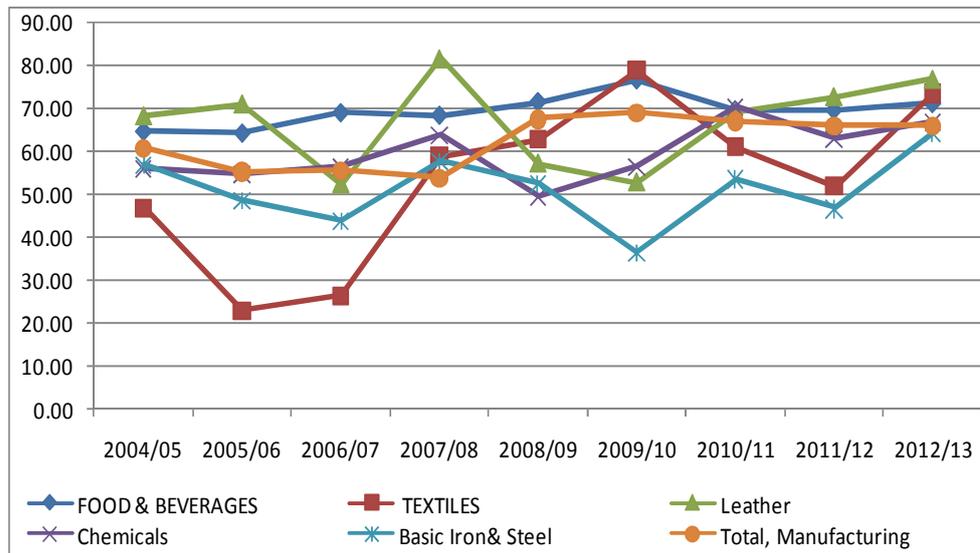
Source: CSA, various issues

### 3.2.8. Capacity Utilization

Capacity utilization is another important manufacturing industry performance indicator. Capacity utilization rate of below break-even point would lead to

closure. The manufacturing industries have been suffering from low capacity utilization due to a variety of reasons. Cognizant of the adverse effects of capacity under utilization, GTP planned to raise it to 90 percent for priority sub-sectors. However, the overall capacity utilization of the manufacturing sector continued otherwise. It declined from the 68.9 percent in 2009/10(base year) to 65.9 percent in 2012/13. Some sub- sectors, however, managed to improve their capacity utilization rate while others failed to do so due to a variety of reasons. Of the underlying factors, the difficulty of obtaining critical raw materials in sufficient quantity and quality from both local and foreign sources is the major one.

**Figure 3.3: Capacity Utilization, rates in %**



Source: CSA, various issues

Strangely, the capacity utilization of the priority manufacturing sub-sectors, namely food and textile, have declined from the base year rate partly due to increased number of large scale manufacturing industries joining the sub-sectors

and inability to get sufficient quantity and quality of raw materials by the scale these industries require given their huge installed capacity. On the other hand, the capacity utilization by the leather and chemical sub-sectors has shown improvement over their base year rates (Figure 3.3).

### **3.3. Structural Changes in the Manufacturing Industry**

#### **3.3.1. Conceptual Issues**

The structural change of an economy is not only associated with the growth of that economy, but also corresponds with a transition from lower to higher productivity sectors. One can grasp such a transition by looking at shifts from one sector to another (mainly from agriculture to industry and services).

The very concept of economic development is intrinsically linked to the changes in the structure of economic activities that take place as countries get richer. From a strictly positive perspective, structural change would be defined as any long-term change in the composition of an aggregate. This would typically refer to the relative importance of sectors in the economy or to changes in the location of economic activity (Syrquin 2010). Structural change has also been approached from a normative perspective that emphasizes desirability in the direction of change. Desirability might be defined according to different sectoral characteristics, among which the level and dynamism of productivity and the scope for technological opportunities are typically the most important. Ocampo (2005), Ocampo and Vos (2008) and UNDESA (2006a) define structural change as the ability of an economy to constantly generate new dynamic activities characterized by higher productivity and increasing returns to scale.

“All countries that remain poor have failed to achieve structural change, that is, they have been unable to diversify away from agriculture and the production of traditional goods into manufacturing and other modern activities” (Lin 2012, p. 3).

Structural changes are advised to attain manufacturing because this industry is seen as the engine of economic growth. It is due to the fact that productivity in manufacturing is usually higher than in agriculture or services that growth of manufacturing raises average productivity of an economy. Moreover, manufacturing is the key industry in the development and diffusion of new technologies which increase the productivity of not only manufacturing but also the other sectors of the economy enabling further economy-wide growth.

The structural shift from largely agriculture (low productivity sector) to manufacturing alone is not sufficient. What matters for growth and competitiveness is the structure within manufacturing industry, especially its technological structure (Fagerberg, 2002; Montobbio and Rampa, 2005). The technological structure of manufacturing, therefore, plays an important role in industrial development simply because it represents the technological level and capacity of a given economy. Moreover, the presence and development of leading industries within manufacturing is vital for sustainable economic growth for an underdeveloped economy (Abegaz, 2002; Amsden, 2001).

The evolution of manufacturing structure of industries of a country can be seen from the value added contribution of sub-sectors by their technological intensity (low, medium and high). Assessment across the globe shows that the lion's share of manufacturing value added in LDCs emanates from low-technology industries.

The structural transformation of an economy can be observed from the changes in the sectoral composition of the GDP. When structural transformation takes place, the share of the primary sector in GDP keeps declining while the share of the secondary sector keeps rising. As a result, labour moves out of the primary sector and joins the secondary sector where the wage rate is higher.

Structural changes within the manufacturing industry (change from low to medium, high technology sub-sectors) can be assessed by observing the number of enterprises, value added, employment, investment, and export shares of each sub-sector over time. Intuitively, structural changes are expected to head toward sub-sectors in which a country has a comparative advantage and which government promotes.

### **3.3.2. Trends in the Structural Changes**

Here attempt is made to see the roles of the manufacturing industry in the overall economy and the dynamism within itself. In order to show the structural change within the sector, the study uses the enterprises employment, value added, investment, and export by sub-sector as major indicators.

#### **3.3.2.1 The Role of the Manufacturing Industry in the Economy**

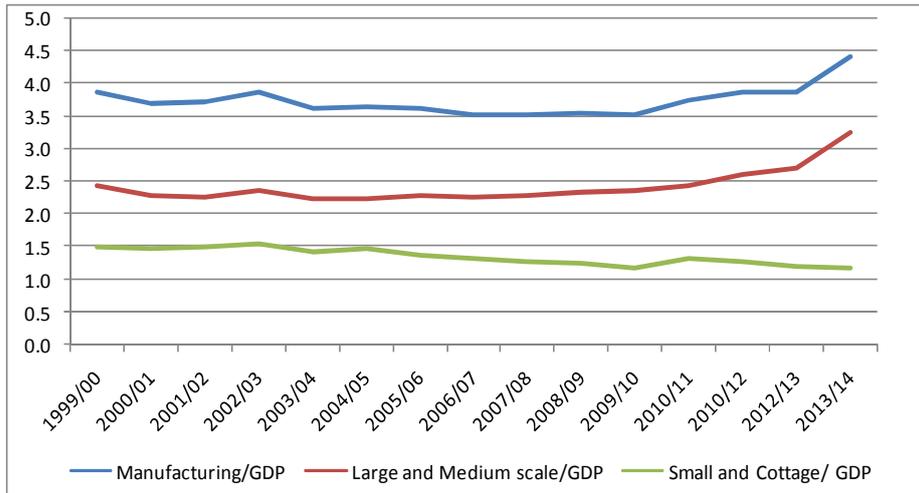
The contribution of the manufacturing industry in the economy can be seen from its share in the GDP, employment and export earnings. The trends of these variables can depict whether contribution of the manufacturing industry have been increasing, stagnating or declining over the last two decades.

##### **i) Manufacturing Value Added share in GDP**

A country's industrialization status can be deduced just by looking at the trends in the share of the manufacturing industry value added in the GDP. According to Figure 3.4, the share of manufacturing value added to the national economy has remained between 3.5 to 4.5 percent for over two decades depicting low and stagnating industrialization. The share of large and medium scale value added in the economy has shown a slight improvement showing recovery during the first three GTP implementation years; while the share of small scale and cottage industries has been declining during the same years. This

development goes contrary to expectations in view of the utmost attention given to the sector and the increasing number of SMEs joining the sector.

**Figure 3.4: Trends Manufacturing Industry value added share in GDP, in %**

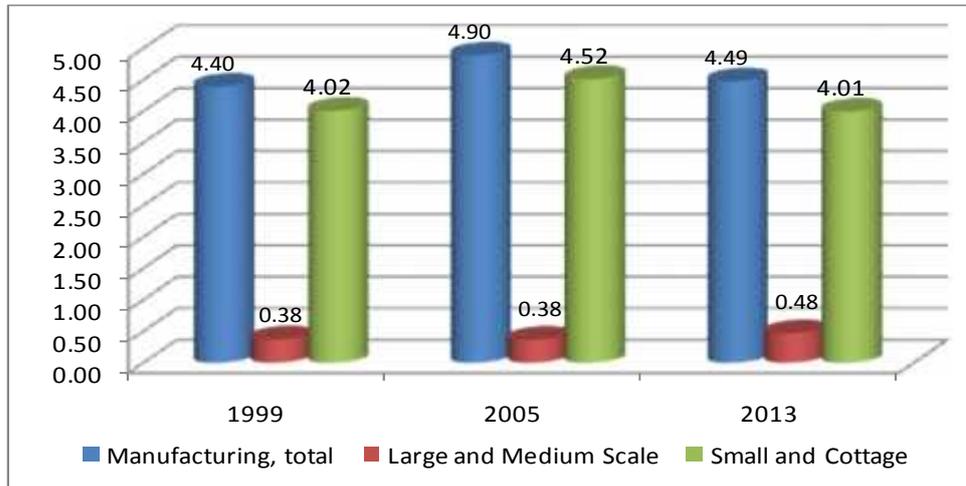


Source: MOFED, various issues.

**ii) Employment contribution**

Another structural change indicating variable is share of employment in the economy. The contribution of employment of the manufacturing industries (large, medium, small and cottage) to the total national employment has remained very low stagnating for a long time. The shares of total manufacturing, LMSMI and small and cottage industries in the total nationally employed persons in the country were 4.49 percent, 0.48 percent and 4.01 percent ,respectively, in 2013. These shares were 4.4 percent, 0.38 percent and 4.02 percent before a decade and half thereby depicting the stagnating contribution of the sector. This hints that structural change has not taken place from agriculture to industry but rather to the service sector (Figure 3.5).

**Figure 3.5: Manufacturing sector employment in total employment, share in %**

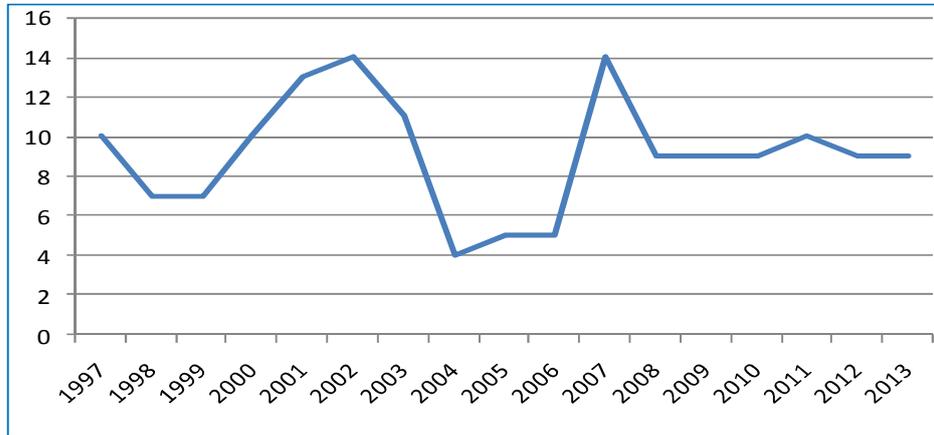


Source: For total manufacturing employment CSA, Labour Force Survey, 1999, 2005 and 2013. For large and medium scale CSA, LMSMI survey (various issues). The employment for small and cottage industry is computed as a residual.

## ii) Export Contribution

Stylized facts show that as a country gets industrialized its manufactured export share since growing industrialization gives rise to increased value added to primary commodity exports. According to data from the World Bank, the share of manufactured export in the total merchandise exports has been fluctuating but remained more or less between 8-10 percent for over a decade and half indicating long time stagnation with no observed significant structural change towards moving to exporting of further processed technology-intensive export items (Figure 3.6).

**Figure 3.6: Manufactured exports (as % of merchandise exports)**



Source: World Bank database,

<http://data.worldbank.org/indicator/TX.VAL.MANF.ZS.UN?pageI-3>

### 3.3.2.2 Structural Changes within the Manufacturing Industries

In order to assess the structural changes within the LMSMI, the study employed the shares of the number of enterprises, employment, valued added, investment and export in the total sector.

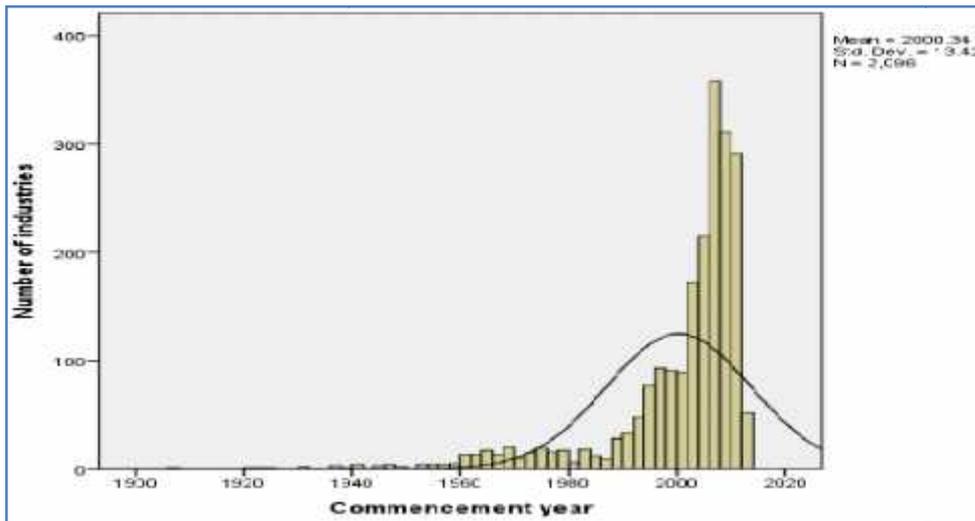
#### i) Age distribution of Manufacturing Industries

In Ethiopia, in their modern form, manufacturing industries were first established in early 19th century mainly by foreign investors.

According to CSA, about 29 percent of LMSMI were established before 2000, dating back as far as 1907. This shows that the sector has been operating in the economy for over a century. The age of the machinery that is used in the production process has implications for productivity and competitiveness since such obsolete chain embodies backward technology and is liable to frequent

breakages. Evidence shows that the capacity under utilization by the LMSMI has been partly attributable to frequent breakage of machinery, which in turn is mainly due old age (Figure 3.7).

**Figure 3.7: Manufacturing industries by year of production commencement**



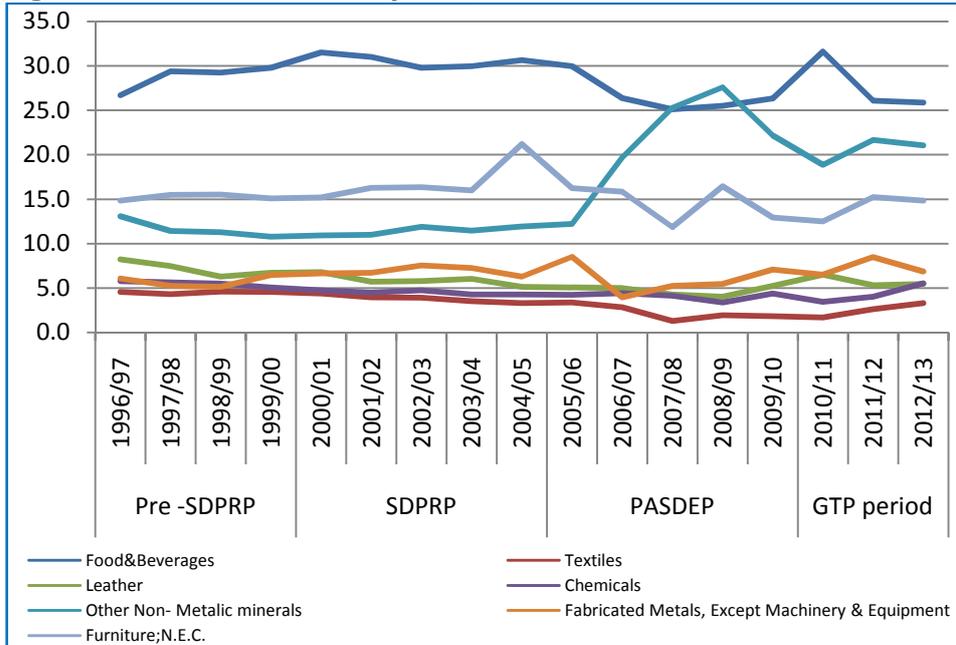
Source: CSA, survey reports

#### ii) Number of Enterprises by Sub-Sector

Trends in the share of enterprises by sub-sectors indicate investors' interest towards specific sub-sectors due to a variety of reasons. These may include expected viability of a particular sub-sector, among others. The share of Enterprises by sub-sector shows where manufacturing industries are concentrated. According to CSA, on average, about 28.5 percent of all LMSMI have been operating in the food and beverage, 16 percent in the non-metallic and 15.4 percent in furniture industries over the period (1996/97- 2012/13). This shows that enterprises' concentration in sub-sectors has not resulted in

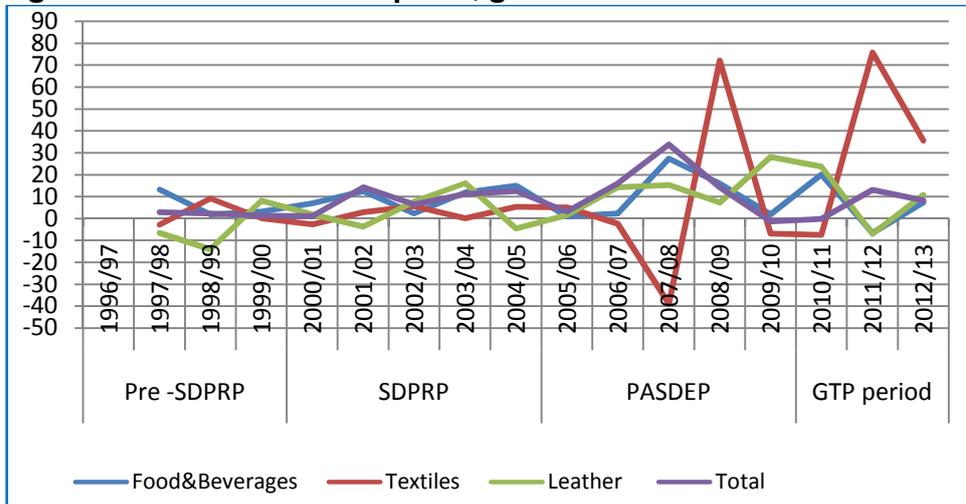
proportionate increase in value added, employment or export by that sub-sector mainly due to scale effect (Figure 3.8).

**Figure 3.8: Number of enterprises, share in %**



Source: CSA, various issues

The growth in the number of enterprises depicts net entry while decline indicates net exist. The data has showed increased entry of new firms into the sector which, in turn, can be due to increased government attention and provision of attraction and generous incentives for those joining the sector. Except for the base year and the first GTP implementation year, the growth in the number of enterprises remained positive. The rate, however, varies from one sub-sector to the other. The Textile sub-sector, for instance, has shown significant fluctuation from year to year (Figure 3.9).

**Figure 3.9: Number of Enterprises, growth in %**

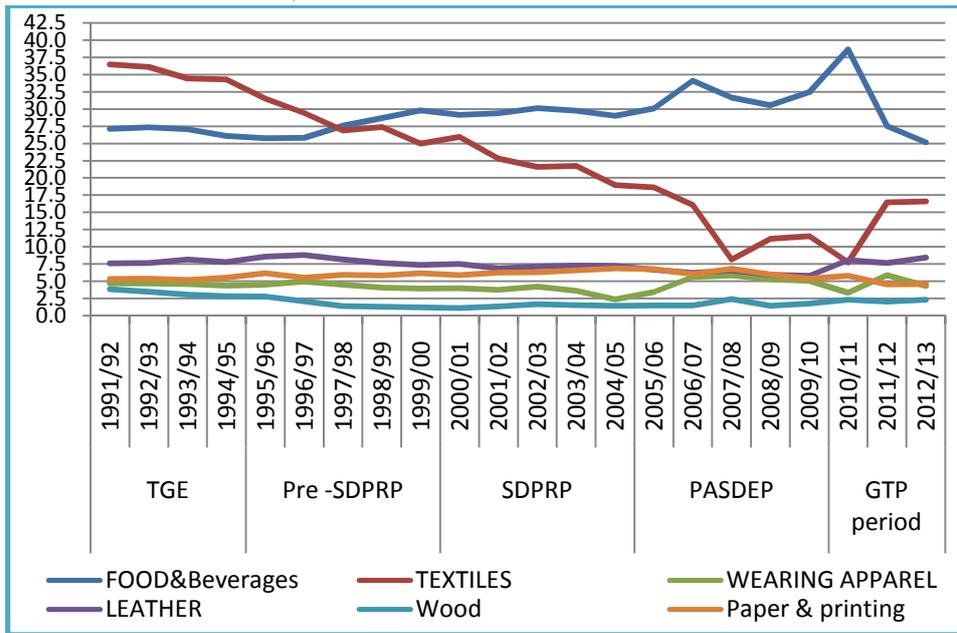
Source: CSA, Various issues

### iii) Employment by Sub-Sector

Trends in the share of employment in the manufacturing sub sector can be used as an indicator to see the structural shift in employment from one sub-sector to the other within the sector since labour normally moves from low performing to high performing sub-sectors. According to Figure 3.10, the employment share of the textile sub-sector which was 36.5 percent in 1991/92 had continuously declined over the last two decade and reached 7.7 percent during the first GTP implementation year. However, it has started recovering since then. The share of employment in the food and beverage sub-sector has been oscillating for over longer period of time but more or less remained the same as the rate registered in 1991/92. Therefore, one can conclude that the two exporting sub-sectors have shown no marked difference in their share of employment over the last two decades. During the second and third GTP implementation years, a sharp decrease in the share of employment in the food and beverage industries was witnessed while the opposite happened in the

textile and leather sub-sectors thereby indicating the shift to be within agro-processing manufacturing industries instead of from low technology-intensive to those of medium ones.

**Figure 3.10: Trends in the share of employment by major priority sectors, in %**



Source: CSA (various issues)

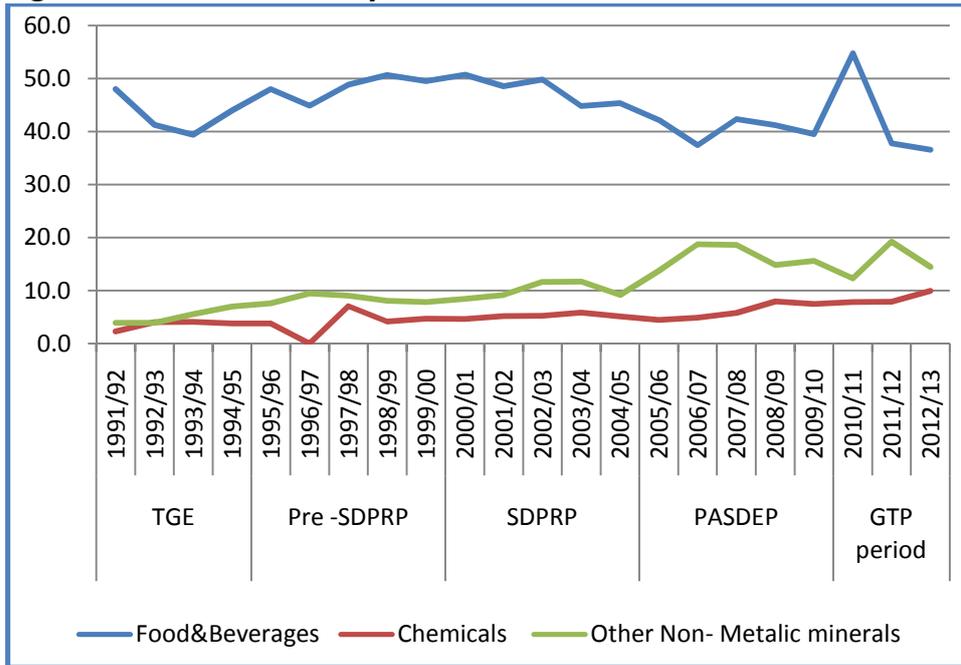
**iv) Value Added by Sub-Sector**

Since number of enterprises disregards scale, and employment share ignores capital intensity, they may not be good indicators. Instead value added by sub-sector can show a better direction towards structural changes.

Data shows that the value added share of the food and beverage sub-sector has declined from about 48 percent in 1991/92 to a 36.6 percent in 2012/13

thereby depicting a significant decline over the period. On the other hand, the value added shares of the chemical and non-metallic minerals sub-sectors have been rising over the same period (Figure 3.11).

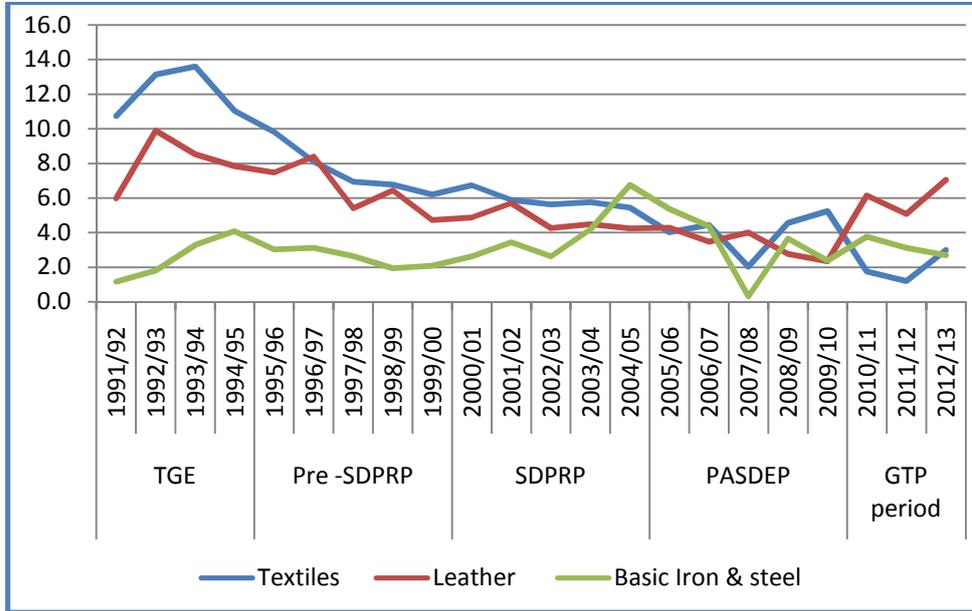
**Figure 3.11: Value added by sub-sector, share in %**



Source: CSA (various issues)

It should be clear that the value added share of the priority manufacturing sub-sectors promoted by the government, like leather and textile, have been declining for over the last two decades. This, in turn, indicates the growing importance of the non-exporting sub-sectors in the manufacturing sector of the economy (Figure 3.12).

**Figure 3.12: Value added by sub-sector, share in %**



Source: CSA (various issues)

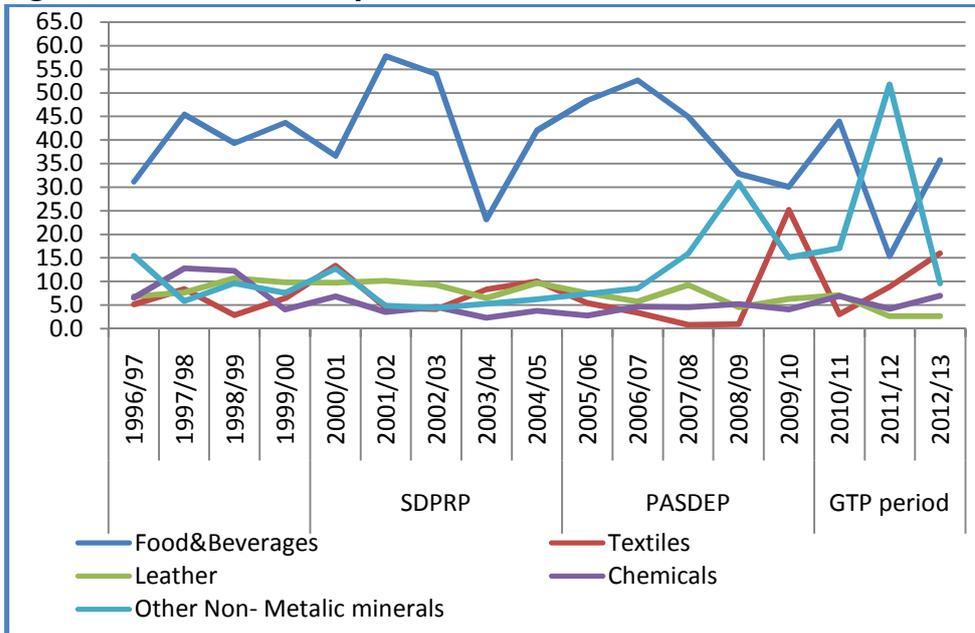
**v) Investment by Sub-Sector**

The structural change within the manufacturing industry can also be assessed using each sub-sector’s investment share over time. According to the data, of the total manufacturing sector investment, the food and beverage sub- sector has attracted, on average, about 2/5<sup>th</sup> (40 percent) during (1996/97-2012/13). Although fluctuating, it generally has been trending downward throughout the same period.

On the other hand, there has been a surge in the share of investment flow into the other non-metallic minerals mainly due to increased investment in cement producing industries which, has been in turn due to increased construction activities throughout the country. Though fluctuating from time to time, recently

there has been a significant increase in investment in the textile industry sub-sector recently mainly as a result entry of large scale industries. Except in the textile industry, the share of investment in the other priority sub-sectors has been low giving rise to plan- implementation gaps in these sub-sectors (Figure 3.13).

**Figure 3.13: Investment by Sub-Sector, Share in %**



Source: CSA (various issues)

**vi) Export**

Growing export performance would lead to building the capacity to produce and export acceptable quality products through learning by doing.

One could tell the relative importance of a sub-sector in generating export earnings and its orientation (inward or outward) by looking at the trends in the

export performance of the sub-sector. To this end, export receipts of a sub-sector to the total manufacturing sector export receipts (indicating the importance of the sub-sector in the manufactured export) and exports receipts of a sub-sector to its total sales revenue ( indicating the orientation of the sub-sector) are considered.

Data shows that manufactured export is highly concentrated in very few items. For instance, leather and leather products sub-sector alone has generated, on average, about 52.7 percent of the total export earnings, followed by food and beverage accounting for about 27.2 percent and textile 12.2 percent over a decade. This continued dominance of a single manufactured export item over a long period shows the inability of the government's export diversification efforts to bear fruits for one reason or another.

Manufacturing industry sub-sectors are both inward (producing for local market) and outward (producing for export) oriented but differ in degree. The leather, textile and food and beverage sub- sectors export receipts constitute, on average, about 54.5 percent, 15.9 percent and 5 percent of the total sales revenue of the sub-sectors, respectively. This shows that the leather industry sub-sector is more export oriented than textile and food and beverage sub-sectors.

Though import substitution strategy was introduced by GTP, the key strategy remained export led industrialization. The manufacturing sector's performance shows the dominance of three manufacturing sub-sectors; namely leather, textile and food. This has been the case during the last 4 decades indicating absence of structural change in terms of diversifying the manufactured export base of the country.

Table 3.7: Trends in the shares of sub- sector export in total sales and sub- sector export to total export

sub-sectors	2012/13		2011/12		2010/11		2009/2010		2008/2009		2007/08		2006/07		2005/06		2004/05		2003/04	
	Export/ Total Sales	sub-sector/sector total export	Export/Total Sales	sub-sector/sector total export																
Food and Beverages	4.43	18.96	7.0	30.7	5.47	34.08	1.78	23.41	2.53	25.35	3.14	20.02	3.99	25.43	11.58	46.66	6.90	30.32	3.14	16.78
Tobacco	0.29	0.05	0.5	0.1	0.47	0.12	0.45	0.36	0.27	0.14	0.31	0.11	0.00	0.00			0.00	0.00	0.00	0.00
Textiles	27.36	18.95	40.0	20.0	14.37	5.30	9.19	15.81	12.37	12.40	14.06	7.15	11.05	12.92	10.49	7.37	9.03	7.89	11.49	14.40
Wearing Apparel	38.14	2.20	21.5	3.4	3.58	0.36	12.92	7.38	8.39	2.86	26.08	7.09	17.01	4.78	1.05	0.06	0.30	0.02	1.30	0.13
Leather	63.35	50.09	49.5	41.9	52.36	44.75	36.27	41.86	52.85	56.54	61.26	63.14	41.52	54.31	60.09	44.60	64.01	61.44	63.87	68.47
Wood and Furniture	1.26	0.43	0.0	0.0	0.00	0.00	0.05	0.01	0.71	0.45			0.76	0.32			0.00	0.00	0.00	0.00
Paper and Printing	1.68	0.65	4.1	1.5	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Chemicals	1.04	1.05	2.1	2.0	3.12	3.57	1.02	3.04	0.87	1.69	1.58	1.99	1.55	1.88			0.00	0.00	0.07	0.07
Rubber and plastic	9.54	7.11	0.1	0.1	12.17	10.00	0.13	0.30	0.19	0.33			0.08	0.08			0.12	0.08	0.00	0.00

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sub-sectors	2012/13		2011/12		2010/11		2009/2010		2008/2009		2007/08		2006/07		2005/06		2004/05		2003/04	
	Export/ Sales	Total sub- sector/ sector/ total export																		
Other non-metallic Mineral	0.19	0.22	0.1	0.1	0.55	0.82	0.07	0.23	0.01	0.02	0.13	0.29	0.09	0.25	0.83	1.06	0.07	0.08	0.07	0.11
Basic Iron and steel	0.00	-	0.0	0.0	1.29	0.91	2.42	3.21	0.14	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fabricated Metal products, Machinery & equipment	0.24	0.28	0.2	0.2	0.02	0.08	3.56	4.40	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.13	0.05
Motor vehicles, trailers and semi trailers	0.00		0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00			0.00
<b>Total</b>	<b>8.47</b>	<b>100.00</b>	8.7	100.0	6.05	100.00	3.03	100.00	4.13	100.00	6.05	100.00	5.10	100.00	9.07	100.00	8.36	100.00	7.08	100.00

Source: CSA, various Issues

**vii) Imported raw materials**

Trends in the structural changes in the sector can also be assessed by looking at industries' raw materials by their sources. In this connection, the data shows that import dependence has not significantly reduced over time indicating absence of domestic substitution of imported raw materials and hence lack of intra- industry linkages. Import dependence has slightly declined from 46 percent in 2004/05 to 44.3 percent in 2012/13 indicating a slight change. The degree of dependence' however, varies from one sub-sector to the other. Among the priority sectors, chemical and metal and engineering (basic metal and steel, fabricated metal, machinery and equipment and motor vehicles) industries have been the most import dependent while agro-processing industries, especially the leather sub-sector, is the least import dependent (Table 3.8).

**Table 3.8: Import Intensity of Manufacturing Industries, share in total raw materials**

Sub-sectors	SDPRP last year, 2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Food & Beverages	0.205	0.206	0.238	0.279	0.311	0.248	0.181	0.206	0.304
Textiles	0.396	0.409	0.415	0.296	0.467	0.370	0.388	0.244	0.277
Leather	0.162	0.210	0.216	0.236	0.261	0.344	0.206	0.186	0.248
Chemicals	0.857	0.831	0.785	0.871	0.799	0.705	0.749	0.823	0.706
Basic Iron & Steel	0.608	0.672	0.989	0.998	0.804	0.791	0.786	0.778	0.805
Fabricated Metals, except Machinery & Equipment	0.812	0.926	0.875	0.802	0.866	0.846	0.524	0.571	0.591
Machinery & Equipment	0.961	0.98	0.939	0.964	0.94	0.851	0.870	0.109	0.668
Motor Vehicles	0.986	0.947	0.85	0.971	0.936	0.985	0.866	0.766	0.409
Total	0.460	0.495	0.583	0.536	0.527	0.510	0.441	0.372	0.443

Source: CSA (various issues)

### 3.4. Concluding Remarks

Economic growth and development are intrinsically linked to changes in the structure of economic activity, i.e. to structural change. Structural change generally refers to long-term changes in the relative importance of sectors in an economy in terms of production and share of capital and labour. Structural change can lead to economic diversification, upgrading and deepening, which in turn boost economic growth, reduce economic volatility, create employment opportunities and enhance integration into the global economy. Care has to be taken in designing structural changes, if the direction of the change is misguided, or if its pace is too slow, the economy will stagnate.

Despite the focus on the large, medium and small scale manufacturing industries by government in the GTP, the performances registered so far have fallen short of meeting the target thereby suggesting the dire need for probing into underlying factors. Overall, the share of the manufacturing industry in the national economy has not shown marked departure from base year level.

Assessed in terms of the shares of number of enterprises, employment, valued added, investment, export and import dependence by sub-sectors, the structure of the country's manufacturing industries has remained more or less stagnant for over two decades. The industrial structure of the country has not able to shift to higher value addition and has remained producing low technology intensive products. The manufactured export remained dominated by three sub-sectors: food processing, textile and leather. Of which, leather alone has accounted for over half of manufactured export receipts thereby exposing the sector to undesirable external shocks.

In order to achieve its industrialization objective, the country has to exert effort towards changing the structure of the manufacturing industries towards

its area of comparative advantage. To this end, by drawing lessons from history, economic analysis, and practice, Lin (2012)<sup>8</sup> states that economic development is a process of continuous technological innovation, industrial upgrading, and structural change driven by how countries harness their land, labour, capital, and infrastructure. He suggested that countries need to identify and facilitate the development of those industries in which they have a comparative advantage and use them as a basis for development.

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<sup>8</sup> Justin Yifu Lin(2012), The Quest for Prosperity: How Developing Economies Can Take Off



## **Chapter IV**

### **Social Protection of Older Persons in Ethiopia**

#### **4.1 Introduction**

The number of older people around the globe is rapidly increasing while at the same time older people are facing multiple risks and vulnerabilities associated with lack of income, health insecurity and physical care (Bloom et al., 2011). This problem is exacerbated by lack of adequate formal social protection of older people in both developed and developing countries. Investment in social protection of older people is a means of giving them a dignified life that they should have, reducing their vulnerability to different shocks and/or pushing them out of their vulnerable conditions.

In Ethiopia, like in many other developing countries, older people have limited access to formal social protection services. These people might obtain some protection services from social protection instruments such as the Productive Safety-Net Program (PSNP), community-based health insurance schemes in rural areas, social security for public and private employees in the formal sector, and other localized social protection interventions in the country. The benefits of these interventions to the country's entire elderly population is limited since these programs either have not been tailored to the needs of the elderly or their coverage has not been nationwide.

Due to a number of factors, the government and other stakeholders must make the very difficult decision of targeting some groups and excluding others who are needy of intervention. One of the groups who are usually left out is the

elderly. With the exception of the social security and support for the elderly programs, we did not find national programs that specifically target this group. The people who are benefiting from old age social security (pension) are those who had the chance to serve in the public sector, which is a very small fraction of the population. Likewise, the benefits from the recently launched social security program for private sector employees accrue to those who worked in the sector. Because of this, the number of elders directly benefiting from this intervention is likely very small at the present.

As stated earlier, older persons are most in need of social protection. Older people face multiple vulnerabilities. They are more prone to both poverty as they are less able to compete in the labor market, and to illnesses both from longevity and disease. Epidemics like HIV add yet another challenge, as they might become infected due to lack of information. They could lose their children who would have supported them during their old age, possibly even leaving them with the responsibility of raising their grandchildren by themselves.

The social structure in Ethiopia promotes respect of elderly and encourages taking good care of them. Children devote their time and resources to taking care of their aging parents. But recent trends in social dynamics show that maintaining this social norm is becoming more difficult. The youth are moving to locations that are further and further away from their places of birth in order to pursue education or better jobs. This leaves parents lonely in their older age. With attention from their children running thin, older people's need for social protection from the public is expected to increase in the near future. To add to this challenge, the number of older people is increasing as the country's life expectancy increases. Hence, it is a high time to attract the attention of policy makers, development partners and researchers towards the issue of social protection for elders so that more knowledge will be generated and appropriate actions will be taken.

## 4.2. Definition of Old Age

According to an article on the World Health Organization's (WHO) website (<http://www.who.int/healthinfo/survey/ageingdefnolder/en/>) there is no universal definition of older or elderly person. Most developed countries use the 65 and above (the official pension) line as a definition of old age. The same article suggests that adopting a similar approach for developing countries will not be meaningful since most of the population in regions like Sub-Saharan Africa (SSA) live in the rural and non-formal sector. Hence, the official pension line has no relevance to them.

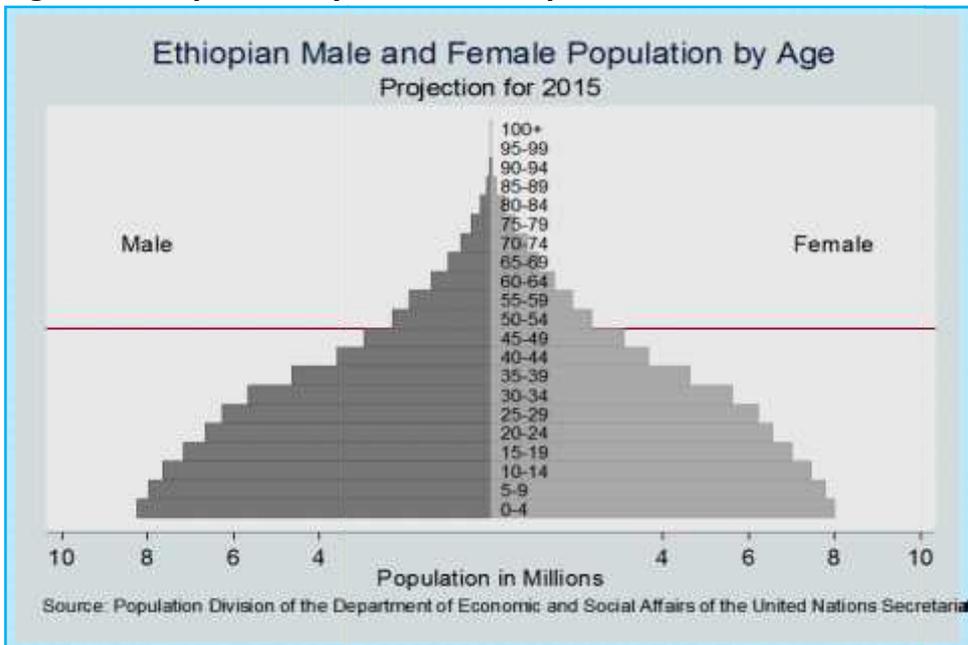
Due to lack of clear chronological definition for old age, different organizations use different age marks to define old age. For instance, the 2002 revision of world population prospects used age 65 to define old age (UN 2004). On the other hand, 50 years is increasingly being used to mark old age by African gerontologists (WHO, 2000 cited in Ferreira and Kowal, 2006). The argument for setting the lower threshold for old age in developing countries is that life expectancy in such regions is typically ten or more years shorter than in developed regions, and that biomarkers of ageing and the social construction of old age are set at a younger age (Ferreira and Kowal, 2006).

In this report we have used the 50, 55, 60 and 65 years old marks while discussing the evolution of size and proportion of the old age population in Ethiopia. We have resorted to this approach due to absence of a single point definition of old age and in order to provide scenarios based on these different definitions.

### 4.3. Old Age Population in Ethiopia

With more than sixty percent of its population being under 25 years old and 70 percent under 30, the Ethiopian population is dominated by children and young adults. Another important feature of the Ethiopian population is that most (about 83 percent) of the population lives in rural areas (CSA 2008). Figure 4.1 depicts the projected population pyramid of Ethiopia in the year 2015.

**Figure 4.1: Population Pyramid of Ethiopia**



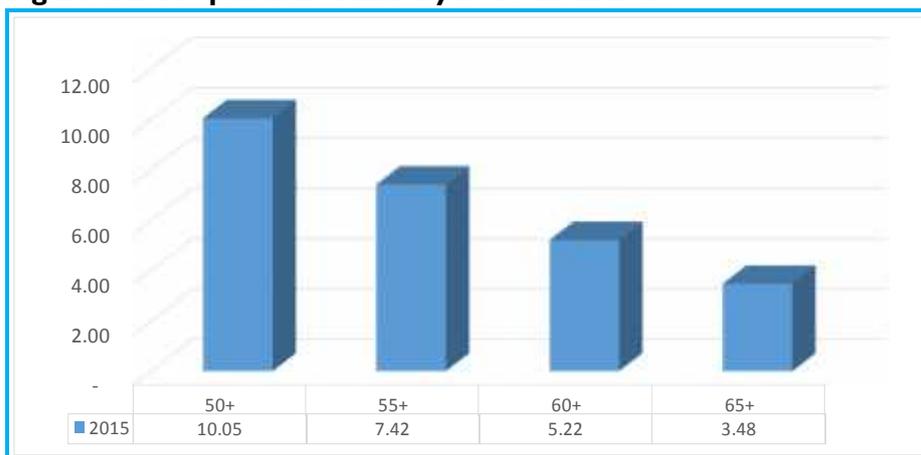
Source: authors computation based on data from Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat

As can be observed in the pyramid, the narrow tip shows that the old age population in Ethiopia, like that of many other developing countries, is a small

fraction of the total population. As there is no specific definition of old age for developing countries, we have used the 50, 55, 60 and 65 year old marks as cut-offs of old age. Based on these varying definitions, the elders account from 4 to 10 percent of the total population in 2015. Even the percentages seem low, the absolute number of older people is already considerably large. This is because Ethiopia has the second largest population in Africa (projected to be 98.9 million by 2015). Furthermore, the country's future projected elder population is set to rapidly increase not only in absolute number but also as a proportion of the total population in the coming years.

According to the results portrayed in Figure 4.2, the proportion of older persons in Ethiopia who are above the age marks of 50, 55, 60 and 65 years is 10.1, 7.4, 5.2 and 3.5 percent of the country's total population, respectively.

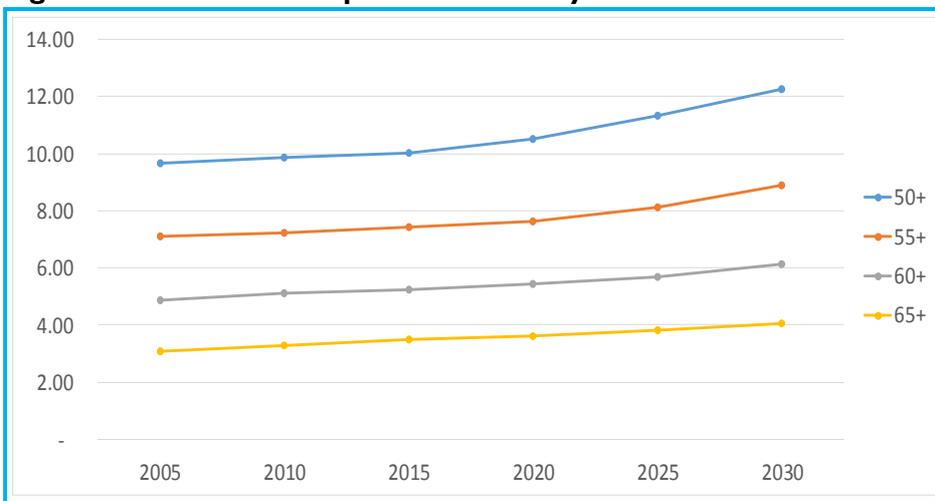
**Figure 4.2: Proportion of Elderly Persons in 2015**



Source: authors computation based on data from Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.

The proportion of older people to the country’s total population is consistently increasing irrespective of which age-cut-off point was used to define old age. For instance, in 2005, the proportion of people 50 years or older was 9.7% and this amount is projected to rise to 12.3% by 2030 (see Figure 4.3). Likewise, the percentage of persons who are 55 or older was about 7.1% of the total population in 2005 and this is expected to rise to 8.9% by 2030.

**Figure 4.3: Trend of Proportion of Elderly Persons**



Source: authors computation based on data from Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat

Table 4.1 presents the estimated absolute size of elderly persons in Ethiopia. Based on similar projection data, we can see that the number of people who are 50 years old or above was estimated to be 7.4 million in 2005 and this is expected to reach close to 17 million by 2030 and this is more than the current total population size of many Sub-Saharan African countries like Malawi, Senegal and Zimbabwe. Using the most conservative cut-off point of 65 years and

above; the number of Ethiopia's old age population by 2030 is expected to exceed its 2005 value (2.4 million) by more than 100%.

**Table 4.1: Projection of Old Age Population of Ethiopia**

Year	Population of Elderly Persons (in Millions)			
	50+	55+	60+	65+
2005	7.37	5.41	3.70	2.36
2010	8.61	6.31	4.46	2.88
2015	9.94	7.34	5.16	3.45
2020	11.72	8.52	6.05	4.02
2025	14.08	10.11	7.06	4.74
2030	16.90	12.25	8.45	5.57

*Source: Own Computation based on Data from Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.*

The increase in number of old age people is closely associated with increased longevity. According to Ethiopia's recent National Human Development report (UNDP, 2015), life expectancy has increased from 57 years in 2004/05 to 62.2 years by 2012/13, suggesting that the country's population is composed of a more aging population.

The shift in proportion of elderly people in a given population can also be gauged by looking at the median age that divides the country's population into equal halves. An increase in the median age is an indicator of a shift of the population age distribution towards older ages (UN 2003). Tables 4.2 and 4.3 presents trends of median ages for Ethiopia and for the rest of the world, respectively. As can be observed from these Tables, by 2050 median age for Ethiopia is expected to exceed the median age for Africa as a whole. Particularly, median age for Africa in 2000 was about 18.3 years and this figure

is expected to reach to 27.5 by 2050. By contrast, median age for Ethiopia by 2000 was less than 17 years and it is expected to reach nearly 26 years by 2040 and 29 years by 2050.

**Table 4.2: Median Age for Ethiopia (medium variant)**

Year	2000	2010	2020	2030	2040	2050
Median Age	16.6	17.5	19.9	22.9	25.9	29.2

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.

**Table 4.3: Median Age by Major Area (medium variant)**

	Median Age (Years)		
	1950	2000	2050
World total	23.6	26.4	36.8
More developed regions	28.6	37.3	45.2
Less developed regions	21.3	24.1	35.7
Least developed countries	19.5	18.1	27.1
Africa	19	18.3	27.5
Asia	22	26.1	38.7
Latin America and the Caribbean	20.1	24.2	39.8
Europe	29.2	37.7	47.7
Northern America	29.8	35.4	40.2
Oceania	27.8	30.7	39.9

Source: UN (2003:15) Table 9. Median Age by Major Area

The median age estimation for Ethiopia in 2050 is expected to reach a level where Europe, the leading region in the process of population aging, was in 1950. Both the rise in life expectancy and median age indicate that the old age

population will continue to increase and become a bigger challenge of social protection than it already is.

#### **4.4. Older Persons' Right to Social Protection**

The elderly deserve proper care and support from society. First and foremost, they have the right to live a dignified life as a human being. These rights have clearly been stated in both national and international legal documents. For instance, the United Nations Universal Declaration of Human Rights article 25(1) states:

*“Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control” (UN 1948)*

The constitution of the Federal Democratic Republic of Ethiopia under its Economic, Social and Cultural Rights article (Article 41) sub-article 5 also particularly mentions similar rights as follows:

*“The State shall, within available means, allocate resources to provide rehabilitation and assistance to the physically and mentally disabled, the aged, and to children who are left without parents or guardian” (FDRE 1994:13)*

In addition to having the right of a decent life, older persons have contributed a lot to their country. The elderly have served their country and made their contribution in different sectors; they have protected and defended their country; they have conserved knowledge on production technology and transferred it to their children; they have preserved and transferred traditional

rituals, values, and beliefs. Older persons also have accumulated knowledge both from education and years of experience on which the next generation continues to build upon. In other words, the elderly are our heroes and it is only right for a society to give its heroes a decent standard of living.

#### **4.5. Protection of+ the Old Age Population in Ethiopia**

The old age population is targeted with fewer social interventions when compared to other vulnerable groups like orphaned and vulnerable children, pregnant and lactating women, and unemployed youth. It is obvious that resource constrained Ethiopia has to make the tough choice of giving priority to different sections of the society. Despite this resource limitation, there are attempts to ensure social protection for the elderly.

The Ethiopian Constitution declares the right of the elderly to get social protection (FDRE 1994). However, appropriate legislations and directives to translate this into practice in the country are lacking. Nonetheless, there are some encouraging recent actions that the Ethiopian Government is taking to provide both the policy framework and service to the elderly (MOLSA, 2012). For instance, the most recent five year development plan, the Growth and Transformation Plan (GTP), under its cross-cutting issue recognizes the need to provide social welfare for the disabled and the elderly. In this respect, it was stipulated to establish a standard social welfare scheme that involves the government, non-government organizations (NGOs), the elderly, and the disabled, and to increase coverage of social security to ensure dignity, freedom and social status (MoFED 2010).

In Ethiopia, the main institution directly responsible for the social protection of the elderly is the Ministry of Labour and Social Affairs (MoLSA). MoLSA had prepared a national plan of action for older persons for the period 2005/06 to

2014/15. The plan of action was envisaged to assess the situation of older persons from different dimensions and to propose actions accordingly. It includes paying special attention to older persons under difficult circumstances such as older women, elderly people with disabilities, rural elderly, displaced elderly, and elderly affected by HIV/AIDS. The plan of action also mentions the importance of evidence-based knowledge to design and implement social protection actions that create desirable impacts (MoLSA, 2006).

The plan of action grouped the actions that need to be under-taken into thirteen inter-related issues. These issues are: health and wellbeing, family and cultural care, rights of the elderly, housing and living environment, social security, education and training, employment and income generation, poverty reduction, HIV/AIDS, gender, food and nutrition, emergencies, and protection of life and property. In all of these the government takes a principal role in protecting rights and creating an enabling environment for contribution towards development. The community also assumes most of the responsibility in implementing the specified actions (MoLSA 2006).

The national social protection policy named the elderly as one of the social groups it will focus on. The social protection policy envisions social and economic wellbeing, security, and social justice for all Ethiopians. In addition to making the elderly a focus point, the policy envisages several actions to reduce poverty, to support improvement in livelihood, and increase access to basic services. These actions will help the elderly both directly and indirectly. The policy also promises to strengthen the social protection system fiscally, institutionally, and with human resources (MoLSA 2012).

As already stated, Ethiopia currently has a well-structured form of a social security program for formal sector employees. The main purpose of this program is to provide social security during old age, injury and/or invalidity.

Employees of the formal sector receive social security during old age depending on the type of employment they had and their years of service. Individuals who got the chance to become public sector employees have had social security since 1960s. Private sector employees have also been included in social security in recent years. But it is too soon to talk about the benefit for the elderly in the private sector. As noted earlier, the social security program has limited coverage since it is confined only to those individuals who work in the formal labor market in the country.

The public sector social security program is administered by the Public Servants' Social Security Agency, which is accountable to MoLSA. The program provides different services for employees of different parts of the public sector including police and the military. The main benefit is retirement benefits. In this scheme beneficiaries get either a one-time payment or a monthly pension depending on different criteria of the agency. Such benefits could also pass on to survivors in case the pension beneficiary passes away.

The social security benefits are well targeted at older persons and are well structured but have limited coverage. For instance, there are only about half a million elderly pensioners. This shows that less than six percent of the total population and less than 20 percent of people 65 and above get a pension in their old age. This means the majority of the elderly have to find other means to support themselves during their old age. And even if an older person is getting a pension, it is largely unknown whether and to what extent they are able to make ends meet with only the amount of payment they are getting.

Another old age focused social protection scheme is the Support to Older Persons program. MoLSA is responsible in coordinating the National Plan of Action for Older Persons mentioned above. In this program efforts will be made to coordinate contributions from concerned actors to the wellbeing of

older persons in their respective sectors. However, since the action plan was not budgeted, satisfactory services were not delivered to address the cross-cutting issues and needs of older persons (MoLSA, 2012).

The government's main focus in the provision of social protection for the elderly is on formulating policy and designing action plans. Two of the schemes in Ethiopia's current social protection framework, social insurance (pension) and Support to Older Persons, have benefits directly aimed at older persons. The remaining schemes in the social protection framework are not designed to target the elderly specifically, but are expected to benefit them as part of the community. As previously stated, these schemes include Productive Safety Net Program (PSNP) and the Household Asset Building Program (HABP). The schemes also include the provision of basic social services like health, education, and water, a national nutrition program, health insurance, support to vulnerable children, disaster risk management, support for people with disabilities, urban housing and grain subsidies, employment promotion, and community based social support.

In addition to the government's efforts, there are also other actors contributing positively. Among these are NGOs, elder based civic societies, and private individual initiatives. Among the notable such organizations are HelpAge International (an NGO working mainly on elderly-related issues), Elderly and Pensioners National Association (a membership based organization covering all regions of the country) and Mekedonia and 'Yewedekuten Ansu' (initiatives of individuals that are recently getting popular support for supporting older persons in difficult circumstances).

## 4.6. Conclusion and Recommendations

The old age population is increasing both in number and as a proportion of the total population, mainly due to increased longevity resulting from improvements in health and the general standard of living. Satisfying old age wellbeing requires the government and other stakeholders' commitment to financial and human resources towards social protection of the elderly. In recent years, the Ethiopian Government has exerted an encouraging effort towards providing social protection for the elderly. However, more is still needed to meet older people's social protection needs in the country. The following initial recommendations are made with the intention of supporting these efforts.

The first important issue that need to be addressed is having a clear definition of old age. This is of crucial importance in order to plan well, target programs well and evaluate outcomes accordingly. A clear definition of old age is also essential for researchers in designing their research well as well as making resulting research findings easily comparable.

Second, there is paucity of relevant data specifically focusing on older people in Ethiopia. To this end, further study on demographic and socioeconomic characteristics of older people would be useful. Among other reasons, it would be interesting to examine whether and how older people access and benefit from public and private social protection providers in the country. Attention should also be given to generating administrative data and mainstreaming old age in other data generation activities.

Third, it is also important to set clear goals in consequent development plans regarding old age. Having old age persons mentioned in the Growth and Transformation Plan (GTP) is a positive step. But it is useful to measure to what extent progress is made in helping older people access social protection needs in the country.

## **PART TWO**

### **Prospects and Challenges of Structural Transformation in Ethiopia**



## **Chapter V**

### **The Theoretical Underpinnings and Country Experiences of Structural Transformation**

#### **5.1. Introduction**

Economic transformation when looked at as part of the general perspective of societal change may refer to an irreversible long-term change in major economic activities. Central in such "economic transformation" are the types of capital accumulated, the associated types of sectors of economic activities, and the drivers of the changes.

Early development theories such as the stage theory of economic growth of Rostow (Rostow, 1959, 1960) and the Marxian lines of thinking in economics tend to draw a pattern through which societies have undergone changes. The economic aspect of the pattern is that there were primitive nomadic hunting and gathering, localized agriculture, internationalized industry, and global services. Recent discussions add the era of public sector as part of the incumbent stage of transformation which includes government, welfare, and unemployment. An interesting matching of the stages with the predominant form of capital records that natural capital, built-up capital, human capital, and social capital characterized the primitive, localized agriculture, industrialization, global services, and public sector stages of transformation, respectively [Transformation in Economics, Wikipedia].

A major driver of "economic transformation" is change in productivity. Technological changes, education, and viability of institutions determine changes in productivity. Thus, while the type and nature of capital a nation has accumulated as well as the level of productivity can tell the stage of economic transformation a country has gone through. The change of activities from low productive sectors to high productivity sectors may indicate signs of undergoing economic transformation.

In the conventional economic literature, when the term "transformation" is applied in economics, it is most often referred to as "structural transformation". Key signs of structural transformation are a rise in per capita income, a rise in rate of capital accumulation, and changes in sector composition of activities. There are also other features which accompany structural transformation. Some of these features are standard while debates on some others are not settled.

This chapter of the report is confined to the concept of structural transformation. It presents the discussion on the nature, and major features of economic transformation based on the available literature. It also reviews the experience of some countries in their efforts of ensuring structural transformation. In particular, it highlights the pattern and trends of major features of structural transformation of China, South Korea, and Botswana as the economies of these countries expanded improving the lives of their people. The purpose of the survey is to locate the position of Ethiopia in its effort towards ensuring structural transformation and take lessons. .

## **5.2. Features of Structural Transformation**

The term structure as often used in development economics refers to a particular stage of an economy in relation to the relative importance of sectors

in terms of production and factor use. A change in structure is thus broadly weighed by changes in the relative importance of sectors in which industrialization is considered to be the central process of such changes [Syrquin, 1988].

Economic literature documents that structural change is accompanied by principal changes such as increases in the rates of capital accumulations, shifts in the sectoral composition of economic activity, and geographic relocations of economic activities [Syrquin, 1988]. The shift in the sectoral composition of economic activities mainly refers to the industrialization process which focuses on changes in production and use of factor inputs. The change in the location of economic activity that comes along the industrialization process implies urbanization. Industrialization is also accompanied by other changes such as demographic transition, and income distribution. These elements of structural change are subjected to interaction. Such "*interrelated processes of structural change that accompany economic development are jointly referred to as the structural transformation.*" [Syrquin, 1988: 206].

Chenery (1986) identified accumulation of both physical and human capital, shifts in the composition of demand, trade, production, and employment to be at the economic core of transformation. The broader economy-wide phenomena which constitute *structural transformation* are agricultural transformation, industrialization, migration and urbanization [Chenery, 1988]. A typical feature of these processes is that all of them "involve reciprocal interaction between rising income and changing proportions of demand and supply, and all are affected by macroeconomic and sectoral policies." [Chenery, 1988: 200]

In the process of structural transformation, growth has to happen to ensure higher level of per capita income. An important pattern of transformation

involves a transition from “a low income, agrarian rural economy to an industrial urban economy with substantially higher per capita income.” (Syrquin, 1988). Thus growth, accumulation, and sectoral composition of economic activities are considered to be the pillars of transformation that need to be accompanied by development. A more encompassing definition of transformation considers institutional changes as means of achieving structural changes.

Transformation can be facilitated through better institutions, and better quality of human capital. The state can play a role through appropriate policies in ensuring faster structural transformation. On the other hand, institutions and challenges in the quality of human capital could delay a transformation process.

### **5.3. Stylized Facts of Structural Transformation**

An important investigation of the history of economic transformation of successful countries that can help developing countries gauge their status in this regard is to check if there was a pattern in key features of structural transformation. While countries might have followed different paths of development, finding some core sources of development with potentially replicable patterns may give a hint to developing countries on what basic things to do to initiate structural transformation and monitor the fundamentals along the way. Works of Kuznets on modern economic growth gave the basis for later works such as those by Chenery, Syrquin, and others in search of potentially replicable patterns. The result was that there were empirical regularities which characterize the transformation processes of various countries. Syrquin (1988) documented the patterns of features that accompanied structural transformation. Those features include growth patterns, accumulations, changes in sector proportions, and relative prices.

**Growth**

Empirics have shown that high growth rates in per capita income characterized the economies of developed countries over time. It had also been observed that growth accelerated in middle income countries during their transformation processes since their economies grew faster than that of the developed and developing nations. As a result, significant geographical redistribution of world manufacturing output has occurred. Chenery (1977) observed that the share of industrialized countries in manufacturing output declined from 72 percent to 56 percent between 1950 and 1973 while that of the nations in transition rose by 50 percent.

In developed countries, total factor productivity explained much of the high growth. However, factor growth explained the growth in output in developing countries as well as early growths in developed countries [Syrquin, 1986]. It is also noted that total factor productivity (TFP) growth explained much of the growth in the industrial modern sector than the agriculture sector.

Ray (2002) associated this pattern with inequality and degree of aspiration. According to him, societies in middle income countries are better connected in terms of level of income and they tend to aspire more than polarized societies in less developed countries. In this regard, societies in developed countries are already on the frontier of development with little aspiration to change the status quo.

**Accumulation**

Accumulation is a process of flow of resources to increase the productive capacity of an economy. In the system of national accounts, saving and capital formation are the mediums of accumulating physical capital. In a broader sense, accumulation includes investment in human capital components which include

health and education, research and development. The purpose of accumulation is to raise the productive capacity of an economy.

Capital fundamentalism had been in fashion in the 1950s and 1960s. The Harrod-Domar model, the Lewis model, the Fei-Ranis model, the balanced growth theory of Ragnar Nurkse, the big push theory and other theories anchored on the demand side dominated the debate. Lewis (1954) for instance argued that "the central problem in the theory of economic development is to understand the process by which a community which was previously saving and investing 4 to 5 per cent of its national income or less converts itself into an economy where voluntary saving is running at about 12 to 15 percent of national income or more. This is the central problem because the central fact of economic development is rapid capital accumulation (including knowledge and skill [Lewis, 1954:155]).

Harod (1939) and Domar (1946) further argued that not only accumulation of capital but also efficiency of capital accumulated matters in development. They associated growth with rates of capital accumulation (saving rate) and capital-output ratio which measures efficiency of capital.

The glory of capital fundamentalism was challenged by the rise of neoclassical thinking in that long-run economic growth can happen due to technological change while capital does not have a long-run impact on per capita growth at a steady-state level. This thinking was first triggered by Robert Solow (Solow, 1956). Nevertheless, this theory does not discredit the importance of capital accumulation in triggering growth in developing countries on at least two grounds. First, the Solow model itself has not ruled out the importance of capital in pushing the level of per capita income of countries until it reaches a new steady state. In that sense, developing countries whose economies are far from world technology and with a low level of capital can go a long way in lifting

their economy until capital deepening gives way for capital widening. For instance, a country whose economy can save 5 percent of its national income has the possibility of enjoying medium term growth until the saving rate reaches the Asian record of around 40 percent. Secondly, the emergence of the new growth theory or endogenous growth theory means that saving can still have effect on long-run growth [Lucas, 1988; Romer, 1986].

### ***Changes in Sectoral Proportions***

Among features which accompany structural transformation, changes in sectoral composition of production are the most noticeable. As Chenery (1960) argues, an increase in per capita income is normally "accompanied by a rise in the share of industrial output." He associated this relationship with a change in the composition of demand particularly with a falling share of food demand which is known in the literature as the Engel's Law. This pattern may not necessarily hold for every country. Some countries whose comparative advantages lie in trading primary commodities of natural resources may not necessarily experience such a pattern since "the change in the composition of domestic demand can be offset through foreign trade and thus such countries may ensure a high level of per capita income without being industrialized [Chenery, 1960].

The definition of structural transformation as a shift of activities from sectors of low productivity to sectors of high productivity implies that a process of transformation is characterized by uneven growth rates across sectors of the economy. An acceleration of growth in the process of transformation is accompanied by a high rate of investment and a faster rise in factor productivity [Syrquin, 1988]. Chenery and Syrquin (1986) showed that the dynamic contribution of a fast growing sector most, importantly that of the manufacturing sector, tend to exceed its static share in the GDP. On the other

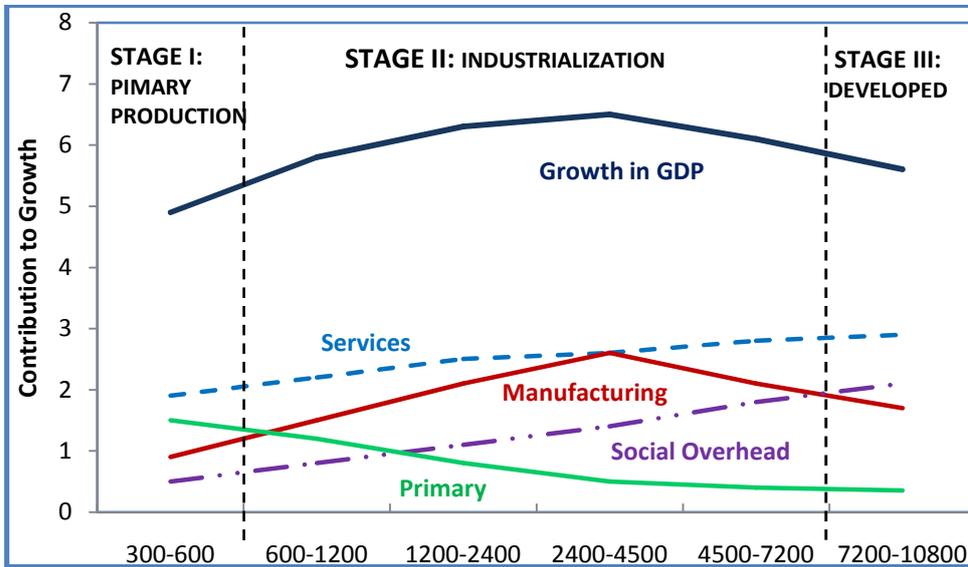
hand, the contribution of the primary sector to growth becomes less than its static share in GDP.

As it is shown in Figure 5.1, the first stage of structural transformation is characterized by an expansion of tradable output due largely to the increase in primary commodities. At this stage, the high rate of growth of the manufacturing sector is dwarfed by the high static share of the primary sector and the low demand for the manufacturing sector. The stage is also typified by moderate level of capital accumulation, accelerating rate of labor force and low growth in total factor productivity.

In the second stage, the primary sector gives way for the manufacturing sector to take the lead in invigorating growth. The simulation result of Chenery and Syrquin (1986) showed that the contribution of the manufacturing sector to growth tend to exceed that of the primary sector at a level of per capita income over US\$ 1,200 though this level may vary from country to country based on the resource endowment and trade policies of countries. Normally, the second stage is characterized by a higher rate of capital and a higher contribution of capital to growth.

In the third stage, income elasticity for manufactured goods and the domestic demand for them tend to decline. In general, the share of the manufacturing sector in growth tends to decline. At that stage, both the rate and weight of capital tend to decline thus resulting in a declining contribution of capital to growth. In most developed countries, labor force also tends to decline due to demographic changes. Due to a declining labor force and the decline in the wage differences across sectors, labor productivity in the agriculture sector tends to rise in developed countries.

**Figure 5.1: Sectoral Contribution to Growth during Structural Transformation**



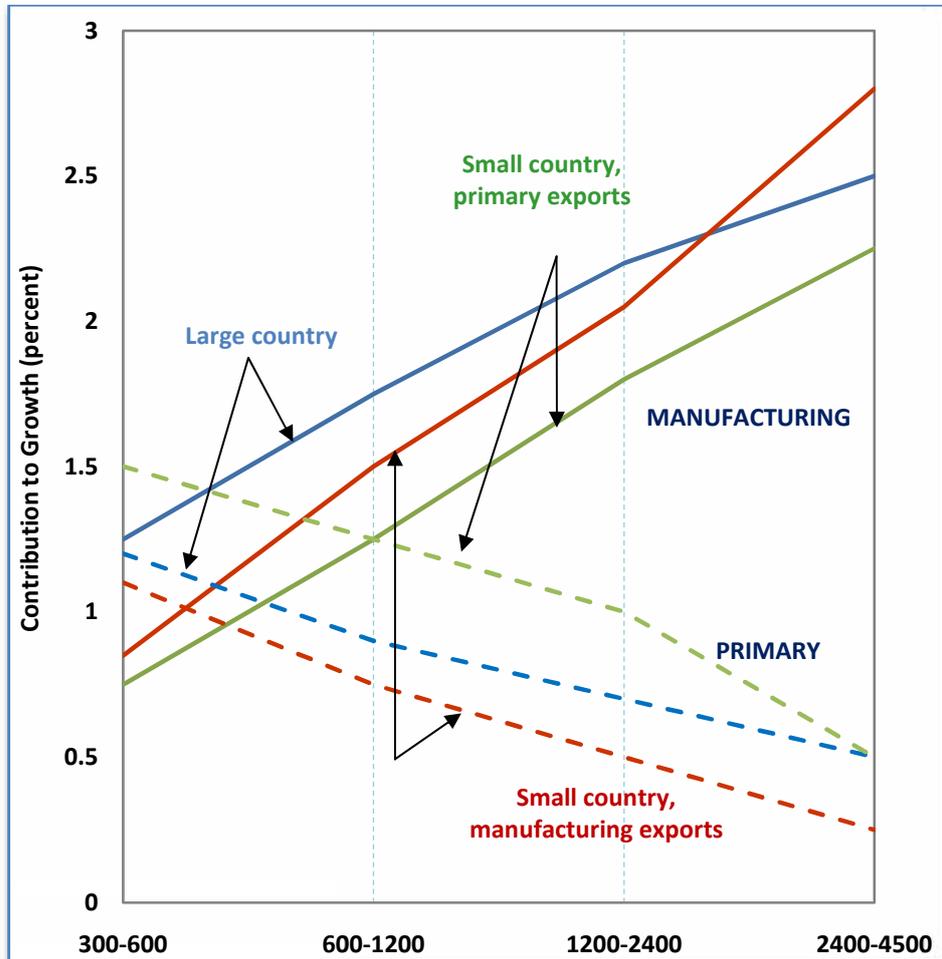
Source: Chenery and Syrquin, 1986.

While the preceding discussion on the pattern of structural transformation holds for an average country, the timing and sequence of structural change differ from country to country depending on "factor proportions on comparative advantage" and "policy decisions about the levels of trade and foreign capital inflows." (Syrquin, 1988). Figure 5.2 shows different paths of transformation for small and large countries specializing either in primary or manufactured commodities. A country of average performance undergoes transformation at an income level of about US\$ 850 while a large country could reach semi-industrial stage at a per capita income level of US\$ 550. In contrast, transformation may take a while for a small country specializing in primary exports until it reaches US\$ 1300.

A large country specializing in manufacturing can achieve early industrialization through a policy of import substitution due to a large domestic demand. A small country specializing in primary commodities may take a longer period to substitute imported manufactured goods. A small country specializing in light manufactured goods can start with an initial flow of foreign capital and can later gain from export of light manufactures. In general, empirics shows that large countries tend to perform better than small ones among countries that begin transformation. Specialization in manufacturing instead of in primary commodities and outward orientation instead of inward orientation has proved to have facilitated transformation.

As transformation occurs, labor productivity shows a different pattern in different sectors. Syrquin (1986) observed that relative labor productivity in general declines in the primary sectors as an economy undergoes structural transformation and rises when the country develops due to a decline in labor force and increase in the competitiveness of wages in the agricultural sector. Relative labor productivity in the manufacturing sector rises until it reaches a maximum level in the second stage of transformation and tends to decline to a stable level once the economy is developed. The service sector normally sees declining labor productivity in the process of transformation.

Figure 5.2: Sectoral Contribution to Growth at Different Trade Patterns



Source: Cheney and Syrquin, 1986.

The trends of relative prices in the process of transformation are also worth mentioning. Nevertheless, this is one of the areas in the transformation literature where consensus is not reached. Approaches to policy matter in the

transformation process. This may range from a role of minimalist development state to purposeful targeting of structural change and even to ideological driven actions of state.

#### **5.4. Countries' Experience in Structural Transformation**

Affluent nations had passed through some kind of structural transformation to reach at the high level of income and economic order they have today. More relevant for Ethiopia would be to assess the recent experiences of newly industrialized and emerging countries. China, South Korea and Botswana are selected to review of the patterns of the features of transformation. While there are many aspects of the transformation processes of these countries, only major elements of transformation, in particular the patterns of high per capita income, rates of capital accumulations, and the associated change in the pattern of sectoral contribution to growth are considered.

##### **5.4.1. China**

While China's economic miracle is said to have started in the early 1980s following the reform in 1979, accumulations of capital began early before the take-off. The average rate of gross capital formation between 1975-1979 was 35.5 percent. Since the early 1990s, ten years after the reform, both rates of fixed capital formation and gross domestic savings were over 35 percent and the latter exceeded the first and thus China emerged as a net lender country.

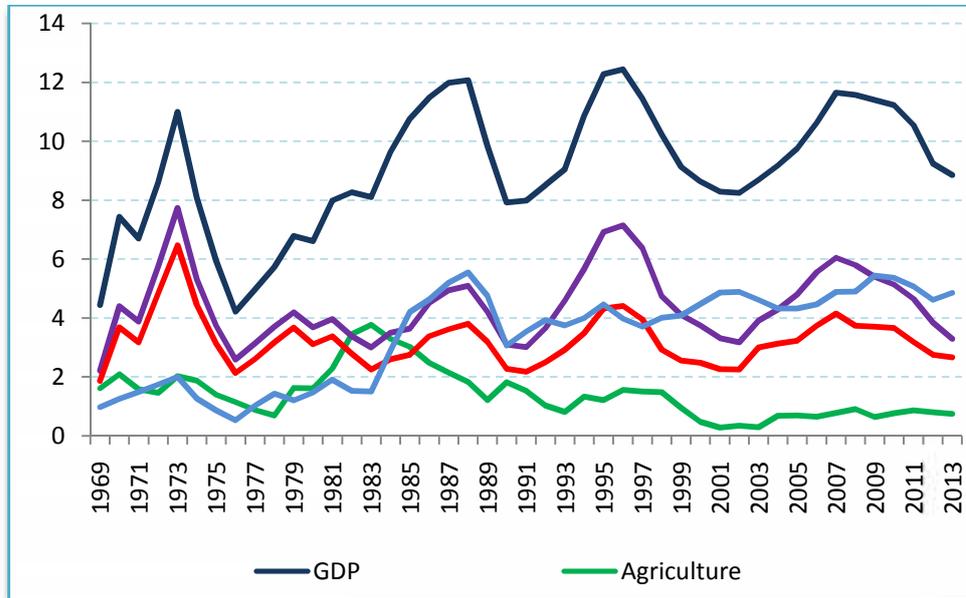
China's per capita GDP reached about 600, and 777 in current and constant US dollars, respectively. The precedence by account of the Chenery-Syrquin characterization is that a country can start transformation at this level of income. Growth rates in GDP and hence in per capita GDP were already high after the reform. The high per capita income growth in the Chinese economy

meant that one of the necessary conditions to embrace structural transformation was being met. Still a more important feature of transformation that needs to be investigated is the dynamic change of the sectoral compositions of economic fundamentals such as production, consumption, and trade.

Looking at the static contribution of sectors to GDP, industry had a share of 47 percent in 1995. It is typical of the Chinese economy that it was dominated by the industrial sector even as early as the 1960s where the per capita GDP was as low as 100 US dollars or even lower. That is probably one of the legacies of communism. Interestingly enough, the manufacturing industry had one of the highest shares in the GDP accounting for about 34 percent of GDP in the mid 1990s. The share was even as high as 40 percent in the mid 1980s. In contrast, the shares of agriculture, and the service sector in the GDP were, respectively, 20 percent and 33 percent in the mid 1990s.

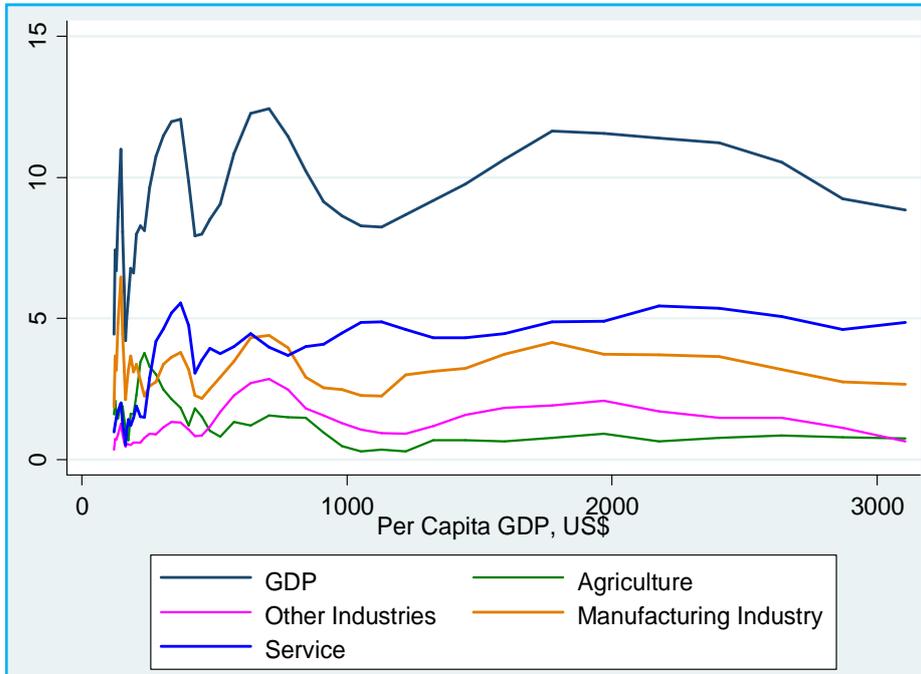
The dynamic contribution of sectors to GDP in the Chinese economy was dominated by the manufacturing sector before the 1979 reform. A major change after the reform was that the dynamic contribution of agriculture to GDP significantly increased at times surpassing the growth contribution of all the other sectors until it started to fall in the late 1980s. The other development in the sectoral composition of growth was that the dynamic contribution of the service sector rose some time after the good performance of the agriculture and followed a sustained level of high share in the dynamics of the economy, unlike the agricultural sector.

**Figure 5.3: Dynamic Contribution of Economic Sectors to GDP in China**



Source: EEA staff computations using data from the World Bank.

A correlation plot of dynamic contribution of sectors to GDP and level of per capita GDP shows that a clear association between high growth in per capita income and high dynamic contribution of the manufacturing sector to GDP seemed to have begun at about 900-1000 US dollars. This level was also characterized by the beginning of a consistent rise of the dynamic contribution of the service sector.

**Figure 5.4: Patterns of Structural Transformation in China**

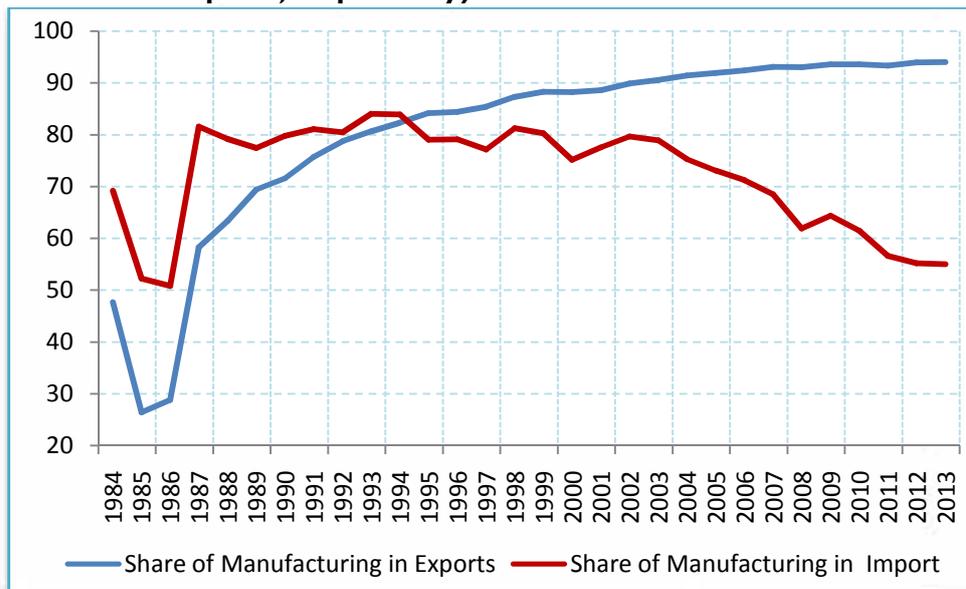
Source: EEA staff computations using data from the World Bank.

Chinese per capita GDP is still hovering around 6,000 current US\$ (this refers to the figure in 2013). The visible signs indicate that the Chinese economy is still undergoing a transformation process before claiming the status of fully developed economy. Unlike the standard case, increasing the share of the manufacturing sector in the economy was not the primary challenge for the Chinese economy in the process of transformation. It was rather the help to the agricultural sector through the liberalization policy to deepen the industrialization process by availing food, raw materials, and labor. A relatively liberalized service was also meant a lubricant to the already existing manufacturing sector. Still important for the structural transformation of the Chinese economy was the ability to diversify exports towards manufactures. In

the mid 1980s manufactures accounted for about 30 percent of the total merchandise export of the country. In the mid 1990s, manufactures became dominant accounting for more than 80 percent of the total merchandise export. At the same time the share of imports in the total merchandise declined from more than 80 percent in the mid 1990s to less than 60 percent in 2013.

The mid 1990s have also witnessed another development in China: net foreign direct investment increased from less than 1 percent of GDP in the mid 1985 to about 6 percent of GDP in the mid 1990s. This is believed to have helped promote the Chinese export in the early periods of transformation. Since then, it has been fluctuating between 3 and 5 percent of GDP.

**Figure 5.5: Trends in the Share of Manufacture Exports and Imports of China (as percent of merchandise exports and imports, respectively).**



Source: World Bank

### 5.4.2. South Korea

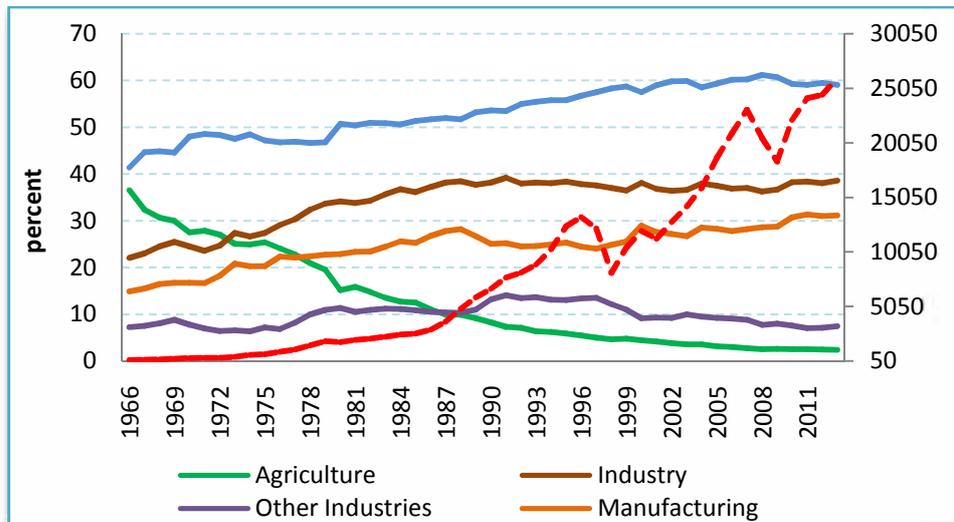
South Korea is known for its impressive growth that helped the nation reduce poverty at a significant margin. It had a per capita income of about 100 US\$ in mid 1960s. A 10 percent average annual growth in GDP helped expand per capita income six fold within a decade. Another round of a decade long fast growth of eight percent pushed the nation up to the status of a middle income country. The fast growth continued for the last decade until the Asian financial crisis appeared to have put a brake in 1998 expanding at a rate of 8.7 percent. The economy was robust enough to rebound from the crisis. In general, the country was capable of increasing average standard of living from a per capita income level of 100 US\$ to about 10,000 US\$ within three decades. Currently, the nation is the 15th largest economy in the world and enjoys a per capita income of 26,000 in current US\$ in 2013. According to the World Bank, South Korea is "an exceptional example of an aid recipient turned a high-income country."

The pattern of the structural transformation observed in South Korea is consistent with the theoretical and the general empirical pattern. In the mid 1960s where per capita income was around 100 US\$, agriculture had a share of about 37 percent. The share of the industry and service sectors at the time was 22 percent and 41 percent, respectively. The structure of the economy was more or less similar to the present day Ethiopian economy except that the manufacturing sector in South Korea had a share of 15 percent in the GDP in contrast to the 5 percent share in Ethiopia today. Within a decade, the 10 percent growth in GDP was accompanied by a decline in the static share of agriculture, and a rise in the static share of the manufacturing sector in the GDP. The 12 percentage point reduction in the share of the agriculture sector between 1965 and 1975 was translated into an increase in the share of both the manufacturing and service sectors by 5 and 6 percentage points, respectively.

Per capita income increased to 646 current US\$. In 1985, agriculture had a share of 12.5 percent while industry and services accounted for 36 percent and 51 percent, respectively, of the GDP. Per capita income in 1985 was already as high as 2,542 in current US\$ (about US\$ 5,650 at 2005 constant US\$).

In terms of accumulations of capital, South Korea had one of the lowest rates of savings and investment in the world in the early 1960s. In 1960, rates of gross domestic saving and gross capital formation of South Korea were 2 percent, and 11 percent, respectively. By mid 1970s, rate of gross domestic saving reached 19 percent of GDP and rate of capital formation stood at 30 percent of GDP, still leaving the country to depend on foreign sources for its capital formation to the tune of 11 percent of GDP. By mid 1980s, rate of gross domestic saving surpassed 30 percent turning the nation from net borrower to net lender and from net importer to net exporter.

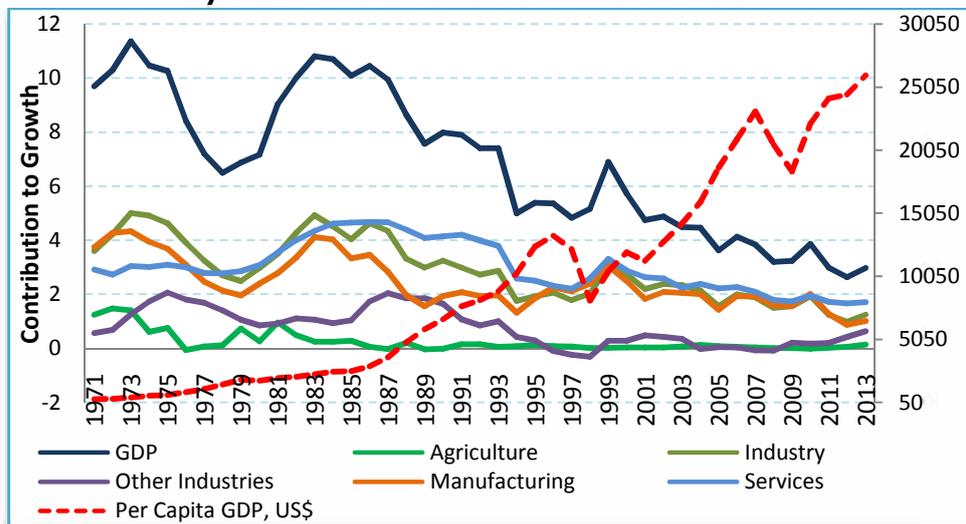
**Figure 5.6: Trends in the Structure of the South Korean Economy, Static Contribution of Sectors to GDP**



Source: The World Bank

Looking at the dynamic contribution of sectors, high growth in per capita income was accompanied by a decline in the contribution of agriculture, and a rise in the contribution of the industrial sector, in particular that of the manufacturing sector, to growth in GDP. The industry sector had initially the highest dynamic share in the GDP and later joined by the service sector as the transformation intensified. Post 1998 structure of the Korean economy is dominated by the manufacturing and service sectors accounting for 98 percent of the GDP.

**Figure 5.7: Trends in the Structure of South Korean Economy, Dynamic Contribution of Sectors to GDP**

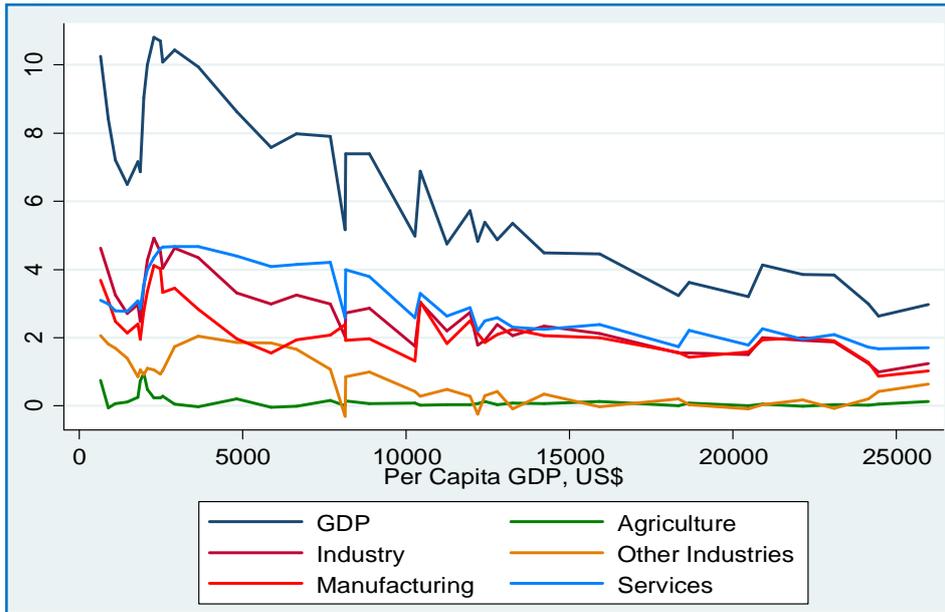


Source: EEA staff computations using data from the World Bank

The cross plot of the contribution of each sector with per capita income shows that as transformation occurred, high growth and higher level of per capita income were associated with a declining contribution of the agriculture sector and a rising of that of the manufacturing sector to growth. In later stages where

the economy entered an advanced level, the contribution of the manufacturing sector to growth tended to slow down while that of the service sector remained above the manufacturing sector. (See Figure 5.8).

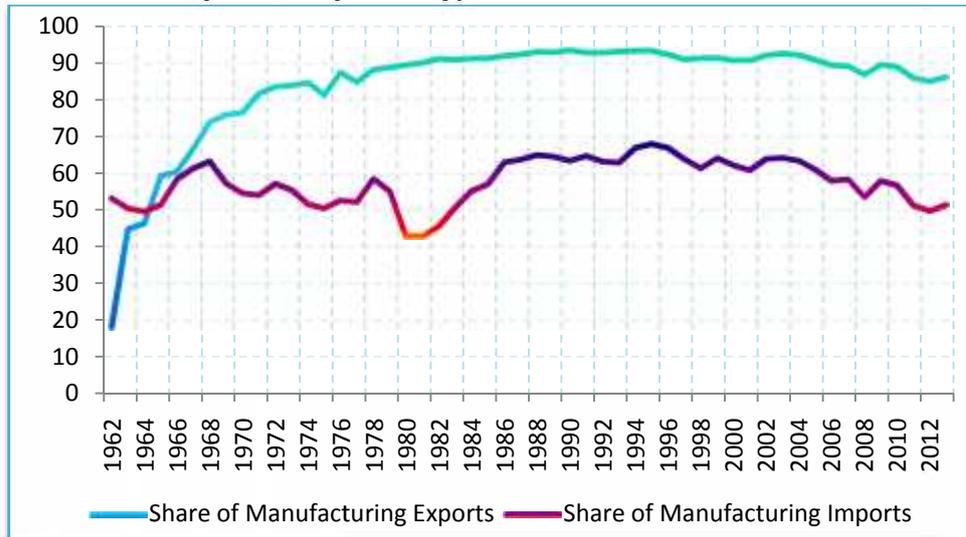
**Figure 5.8: Patterns of Economic Transformation in South Korea**



Source: EEA staff computations using data from the World Bank

Lastly, South Korea is known for its export promotion strategy. The early 1960s marked a relatively low share of manufactures in the South Korean export accounting only for 18 percent of its total merchandise export. In contrast, its import of manufactures in the total merchandise imports was about 53 percent. By the early 1970s, the share of the manufactures in the South Korean merchandise exports reached as high as over 80 percent while the share of imports remained almost constant.

**Figure 5.9: Trends in the Share of Manufacture Exports and Imports of South Korea (as percent of merchandise exports and imports, respectively).**



Source: *The World Bank*

In summary, South Korea stands out in representing a typical pattern of structural transformation. As GDP grows sustainably and per capita income expands, the gravity of the economic activity shifted from low productivity sectors of primary activity to high productivity sectors such as the manufacturing industry. Along with the growing per capita income, accumulation of capital increased from one of the lowest rates in the world to one of the highest. The transformation process was also accompanied by a rapid shift in the trade structure whereby the share of the export of the manufactures in the total merchandise export significantly increased to eventually dominate the nation's export. The most important outcome of this transformation process was that the country triumphed in becoming one of the industrialized nations leaving the so-called "middle income trap" far behind.

### 5.4.3. Botswana

Botswana's history as independent nation started in 1966. By then, the landlocked country had a per capita income of US\$ 84 (current US\$). Rate of saving recovered from -7 percent of GDP in 1960 to 0.13 percent in 1966. In the same year, rate of gross capital formation stood at 22 percent, up from 6 percent in 1960. Independence was accompanied with hope for a better life as diamond was discovered. Gross capital formation reached as high as 50 percent in 1970s and has been fluctuating between 15 percent and 40 percent since then. Gross domestic saving reached 22 percent of GDP in the mid 70s, averaged 38 percent between 1980 and 2007, and 26 percent between 2007 and 2013.

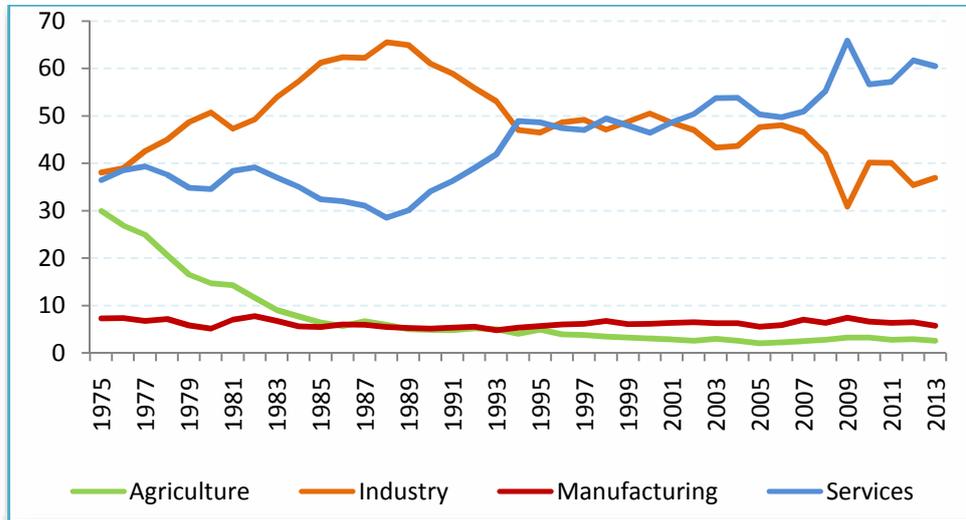
GDP grew at an average rate of 12.5 percent for the first 25 years since 1966. That impressive growth in GDP gained the country a per capita income level of US\$ 2,768 in contrast to US\$ 58 in 1960. Growth in GDP decelerated to an average rate of 4.4 percent fluctuating between -8.7 and 7.6 percent for the two decades between 1991 and 2013. Per capita GDP increased at an average rate of 2.8 percent during the period to reach only US\$ 7,315 in 2013.

An important question to ask is why Botswana and South Korea whose economy began to take off almost at a similar period with more or less similar rate of growth, rate in per capita income became different after four decades and half? Part of the explanation is the difference in the initial levels of per capita income of the two countries. Still more important is the difference in the sustainability of growth. For the first 25 years since take off, Botswana's per capita income was growing at an average rate of 7.92 percent per annum. In fact, this exceeded the 7.3 percent rate of growth of the South Korean per capita income for the first 25 years since 1960. For the 22 years between 1992 and 2013, per capita income in South Korea expanded at an average rate of 4.3

percent while that of the Botswana per capita income increased at only 2.8 percent per annum. Had the Botswana's economy grown by the rate of growth which the South Korean economy in the last two decades, the level of per capita income of Botswana would have been almost double that of the current level

Another important question to ask is why growth in Botswana slowed while that of South Korea continued to be strong in particular given the higher level of income of the latter? The answer seems to be found in the difference in the structural transformation of the two countries. Unlike the South Korean economy, Botswana's economy did not undergo the pattern of structural transformation the former did. The static share of agriculture in the GDP declined while the share of the service sector increased as the GDP expanded. However, the static share of the manufacturing sector in the GDP remained and still remains below 10 percent. Until the early 1990s, the share of other subsectors of industry sector mainly the mining sector accounted for over 60 percent of the GDP. The economy faced a declining share of the mining sector being overtaken by the service sector. In particular, the mining industry faced highly volatile prices in the international market. The economy followed the trend of its growth which in turn was dictated by the pattern of international demand for the primary commodity. The HIV-AIDS had also been a major challenge to the development efforts of the nation.

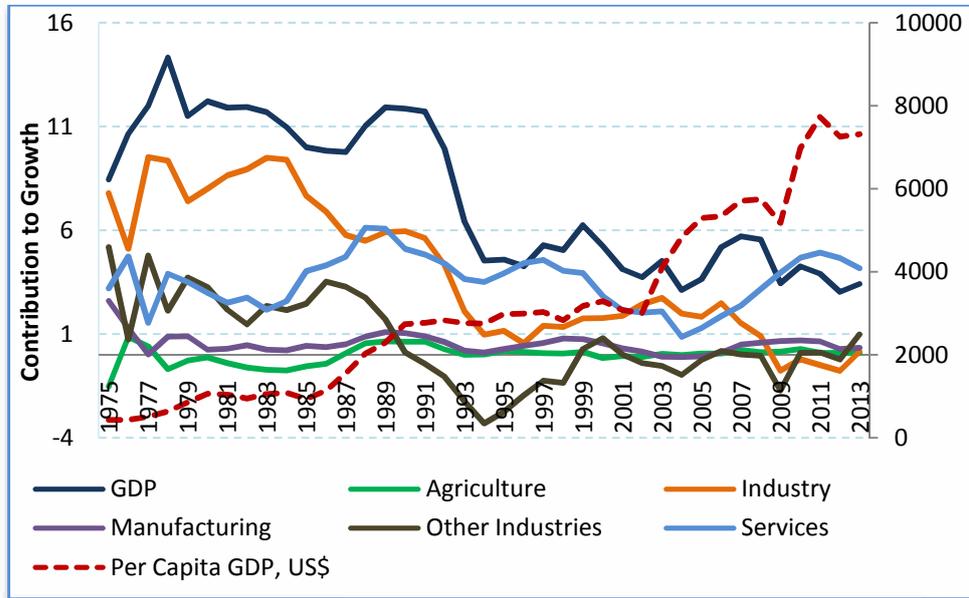
**Figure 5.10: Structure of the Botswana's Economy, Share of Sectors in the GDP**



Source: The World Bank

Figure 5.11 shows the dynamic contribution of sectors to GDP growth in Botswana. At the initial stages, growth was dominated by the mining sector. The non-manufacturing sector accounted for 9.5 percentage points in the 11.7 percent growth in GDP (that is 81.2 percent of the growth in GDP) at the height of the mineral boom in 1983. The contribution of the manufacturing sector to growth remained low. The share of the agricultural sector in the growth also declined. The 1990s proved a difficult challenge for the mining industry, its weighted growth falling into the negative territory dragging GDP growth down by about 3 percentage points. The service sector alone could not guarantee an escape from what appeared to be a middle income trap at less than a per capita income of US\$ 8,000.

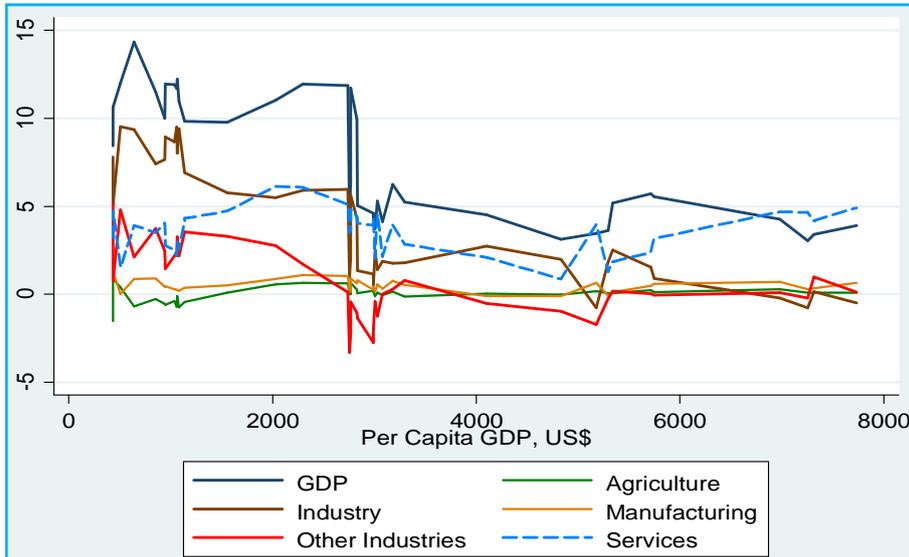
**Figure 5.11: Structure of the Botswana Economy: Contribution of Sectors to Growth**



Source: EEA staff computations using data from the World Bank.

A cross plot of the contribution of the sectors to GDP growth with the levels of per capita income (Figure 1.12) shows that the rise in per capita income was not accompanied by a clear pattern of a typical structural transformation in the contribution of major sectors. At lower levels of per capita income industry dominated by the mining subsector led growth. At per capita income levels in the range of 4,000 US\$ and 5,000 US\$, the contribution of the mining industry tended to fluctuate. As the economy enters the level of per capita income of US\$ 7,000 the mining industry began dragging the growth in GDP back while the service sector struggled to compensate for the deep decline in the value-added of the industrial sector.

**Figure 5.12: Patterns of Structural Transformation in Botswana**



Source: EEA staff computations using data from the World Bank.

To sum up, Botswana is a typical example of the possibility of becoming a middle income country without undergoing major structural transformation, in particular without being industrialized. Nevertheless, irrespective of the level of capital accumulated, a country may end up in a middle income trap or even could face a downturn to the level of average wellbeing unless a rising income is associated with viable structural transformation. Quality and type of capital rather than level of capital accumulated seem to define a nation's destiny towards development. Rate of gross capital formation in Botswana exceeded significantly that of South Korean. The stark difference between the two countries was observed in the use of capital accumulated. Available resources in South Korea were used to build capabilities that target on a knowledge-based, manufacturing-led economy while natural resources in Botswana were used to increase per capita income in an economy dominated by primary commodities, mostly the mineral wealth.

## **Chapter VI**

### **Status of Ethiopia's Structural Transformation: The Macroeconomic Perspective**

#### **6.1. Introduction**

The literature part of this report identifies growth in per capita GDP, accumulations, and shifts in the sectoral composition of the economy as the central indicators of structural transformation. Other features that are concomitant with the basic elements of structural transformation include urbanization, rural-urban migration, demographic changes, and institutional transformation. An obvious development among these basic indicators of intensity of structural transformation from the Ethiopian perspective is the high growth in per capita GDP. Recent developments in the country's economy also show a rapid accumulation of both physical and human capitals. The sectoral composition of the economy is witnessing a declining contribution of the primary sector particularly agriculture. Whether these developments are signs of a major prelude to structural transformation need to be investigated.

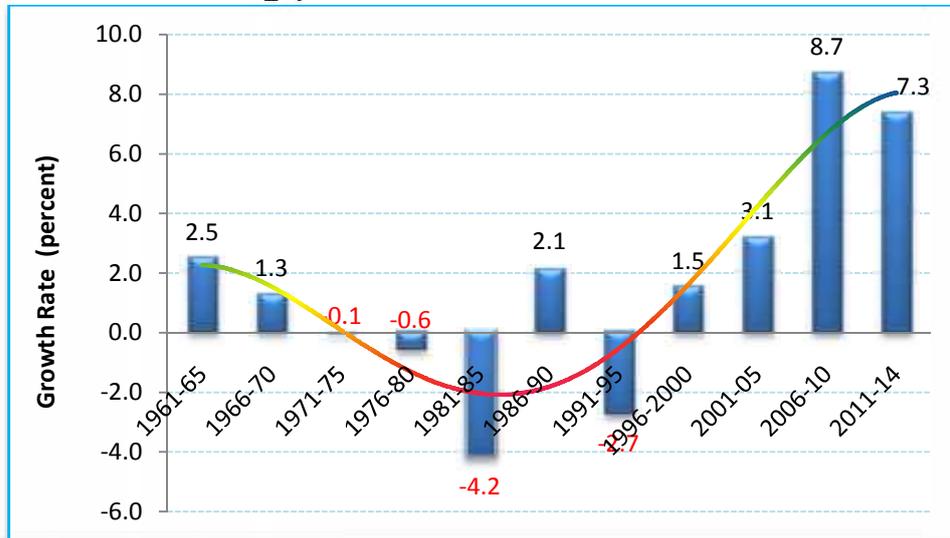
This chapter primarily focuses on assessing the fundamentals of the structure of the Ethiopian economy as it is set for transformation with high growth in per capita income. The report investigates the extent to which the Ethiopian economy is heading towards structural transformation by the pattern and trends of the three fundamental indicators namely growth in per capita income, accumulation, and shifts in the sectoral composition of the demand and supply aspects of the economy.

## 6.2. Growth in Per Capita GDP

The growth in GDP observed in Ethiopia over the last decade has been robust enough to exceed the fast growth in population thus improving the average living standard. Per capita GDP grew by 7.5 percent between 2005/06 and 2013/14. This magnitude is capable of reducing poverty significantly given the relatively low inequality observed in Ethiopia at least so far. Looking at the long-term growth over the last half a century using the strict definition of economic growth, per capita GDP has barely expanded by 0.4 percent. In fact, the average growth rate of per capita GDP between 1960/61 and 2004/05 was -0.6 and full recovery from the descending of average wellbeing that began in early 1970s was not completed until 2005. Recent experience of the South East Asian countries such as Malaysia shows that fast economic growth has the power to transform a country from poverty to prosperity in less than a period of a generation. Partly due to the efforts lost in the recovery process during the first decade of the 1990s and partly due to the sluggish growth observed over that period, per capita GDP has expanded only at a rate of 4.3 percent over the last quarter of a century. Thus, investigation of the performance of the Ethiopian economy as a sign of take off towards structural transformation and the associated development should start from the period of full recovery after 2005.

An important feature of the Ethiopian economy in the last decade is it has been stable and resilient to shocks. During the period between 2005 and 2014, there had been major shocks such as drought in 2007/08 and 2012/13, global financial crisis in 2007/08, and a fall in coffee prices in 2012/13. Such shocks had in the past the power to hit the economy with severe famine. For instance, the fall in the average per capita growth during 1971-75, 1976-80, 1981-85, and 1996-2000 (see Figure 6.1) were mainly due to incidence of major droughts.

**Figure 6.1: Patterns of Growth in Per Capita GDP (Five Years Average)**

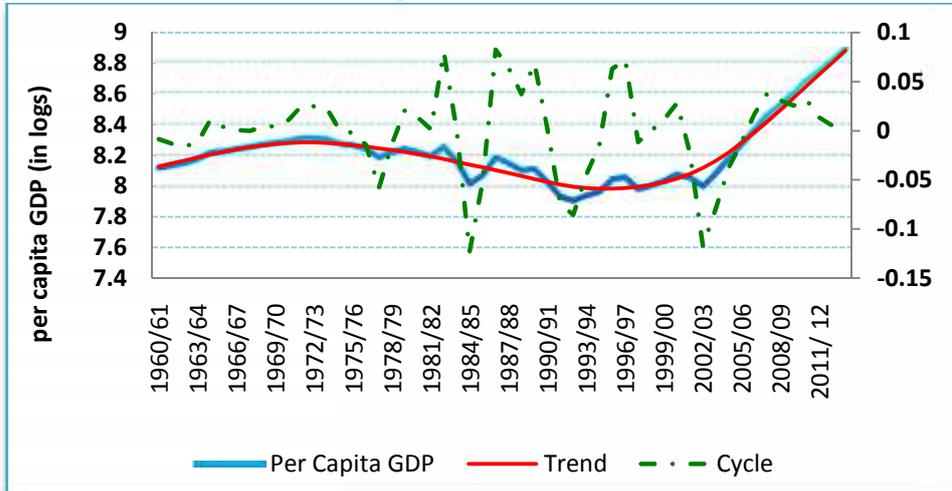


Source: EEA staff computations using data from MOFED.

The Hodrick - Prescott decomposition in Figure 6.2 shows that the Ethiopian economy had been susceptible to shocks most importantly to fragility of nature until 2004/05. The stable trend and the less volatile cycle components of the per capita GDP after 2005/06 tend to hint some degree of sustainability of the economy.

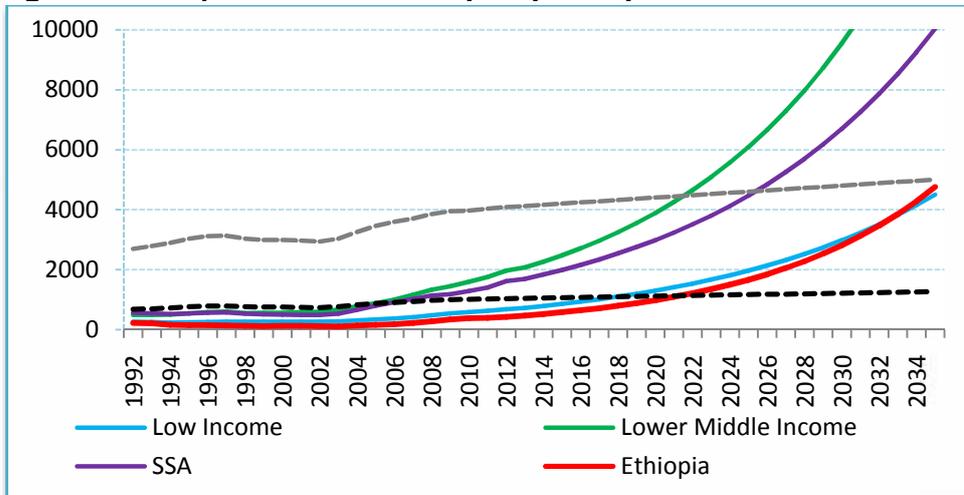
Ethiopia has an ambition of becoming a middle income country before 2025. If the current trend in both the growth of the Ethiopian economy and the growth in the global economy continue, Ethiopia could achieve a middle income status by crossing the World Bank's lower national income boundary in around 2022. Based on the atlas method of the World Bank, Ethiopia's per capita GDP in 2013 is 470 US\$. The average for low income countries and the lower boundary of lower middle income countries is, respectively, US\$ 728 and US\$ 1,046.

**Figure 6.2: Hodrick - Prescott Decomposition of Per Capita Income into Trend and Cycle**



Source: EEA staff computations using data from MOFED.

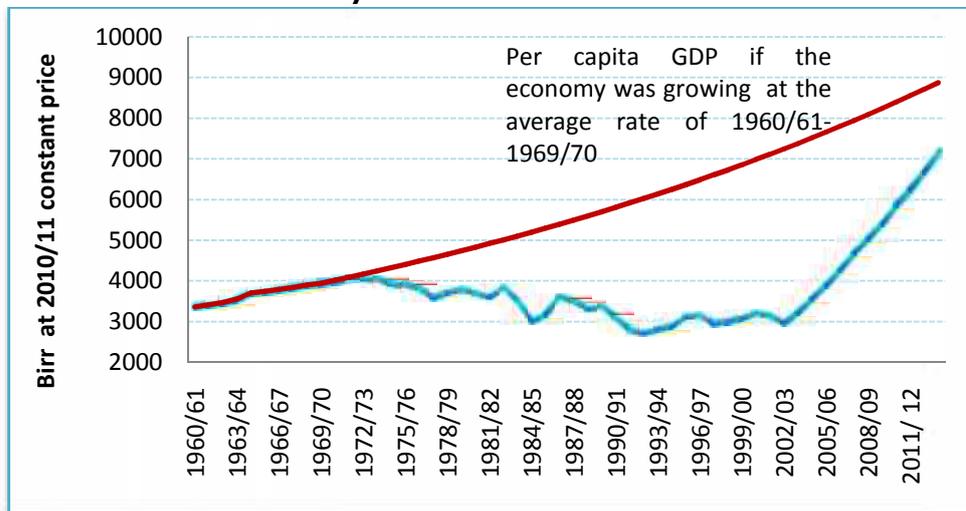
**Figure 6.3: Projection of the Ethiopian per Capita Income**



Source: EEA staff computations using data from the World Bank.

If the current average rate of growth of economies in developing countries worldwide continues, most developing countries would also cross the current lower boundary for middle income status even before Ethiopia would do. If the whole concept of level of poverty is relative to the rest of the world, Ethiopia with the current rate of growth would not be able to ensure a level of per capita income greater than the average level of income of developing countries before mid 2030s.

**Figure 6.4: Long-term Growth Performance: From Recovery to Sustainability**

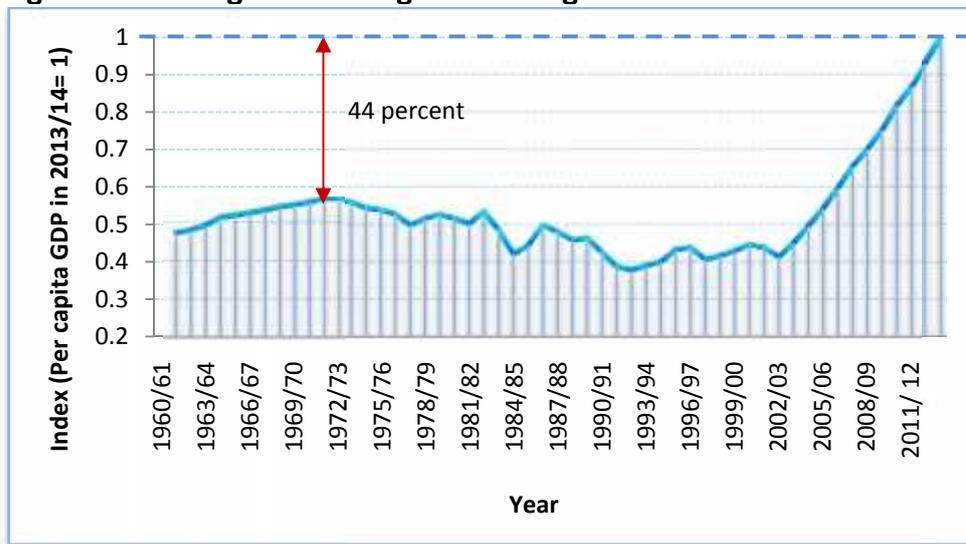


Source: EEA staff computations using data from MOFED.

However, more efforts seem to remain to even aboard the minimum path of development which Ethiopia would follow had the rate of growth of per capita income that were registered during the first two five-year development plans of the Imperial regime continued until to date. After all, the current level of per capita income is only higher by 44 percent than the level of per capita GDP registered in 1971/72. (See Figure 6.5).

The maximum per capita GDP registered between the 1960s and 2005/06 was Birr 4,060 at 2010/11 constant prices. The period was 1971/82. The per capita GDP in 2013/14 stood at Birr 7,211 at 2010/11 constant prices falling short of double of what has been registered four decades ago by a margin of 56 percent. This shows the extent of the descent of average living standard during period of the command economy as the per capita GDP was declining at an average rate of 1.3 per annum.

**Figure 6.5: Changes in Average Wellbeing**



Source: EEA staff computations using data from MOFED.

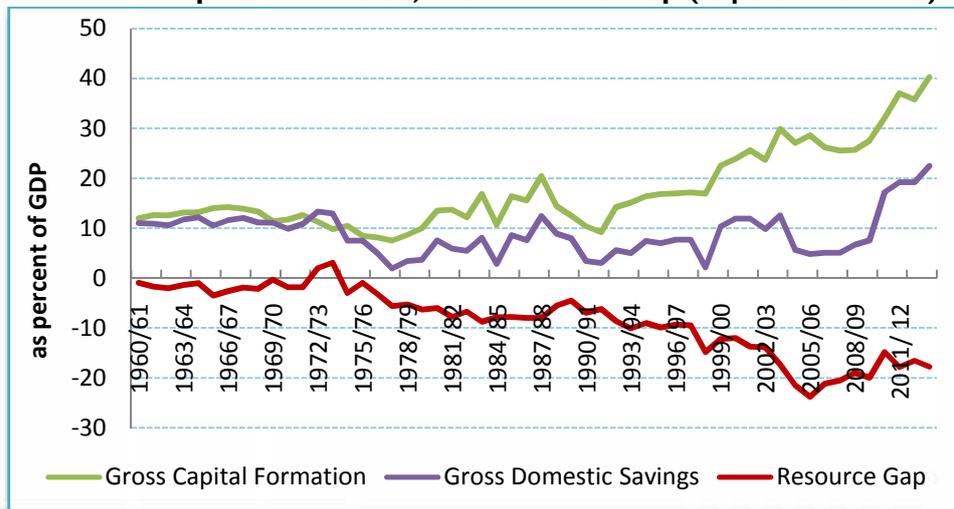
## 2.3. Accumulations

### 2.3.1. Physical Capital

The 1950s assessment of Lewis (1954) was that a poor country whose national saving was as low as 4 to 5 percent needed to transform into an economy capable of ensuring a national saving rate of 15 percent or more. Judged by the

amount of gross domestic saving. Ethiopia in 2009/10 was a typical poor country example of Lewis as the country had an average rate of gross domestic saving of 5.8 percent during 2005/06-2009/10. Fortunately, the national saving rate was much higher than gross domestic saving rate, and the rate of gross fixed investment was even higher than the national saving rate. Rate of gross fixed investment during the period 2005/06-2009/10 averaged 26.3 percent- a 6.3 percent margin over the average national saving rate during the same period. Remittances, foreign transfers, grants and loans, and foreign direct investments financed the resource gap which was 20.9 percent of GDP.

**Figure 6.6: Trends of Accumulations: Gross Domestic Saving, Gross Capital Formation, and Resource Gap (as percent of GDP)**



Source: MOFED and EEA staff computations using data from MOFED.

The growth and transformation plan witnessed an exceptionally aggressive domestic resource mobilization. The tax mobilization efforts, the Great Ethiopian Renaissance Dam Bond, the condominium housing schemes and social mobilization on saving efforts seem to have been paying off in terms of overall

increase in the rate of gross domestic saving as it stood at 22.5 percent in 2013/14. This has financed about half of the even greater rate of gross fixed investment. Rate of gross fixed investment in 2013/14 reached 40.3 percent which can only be paralleled by the South and South East Asian experience. An even more important quality of saving is that it can directly and indirectly finance the accumulation of human capital which this report does not cover.

## **6.4. The Dynamics of Structure of the Ethiopian Economy**

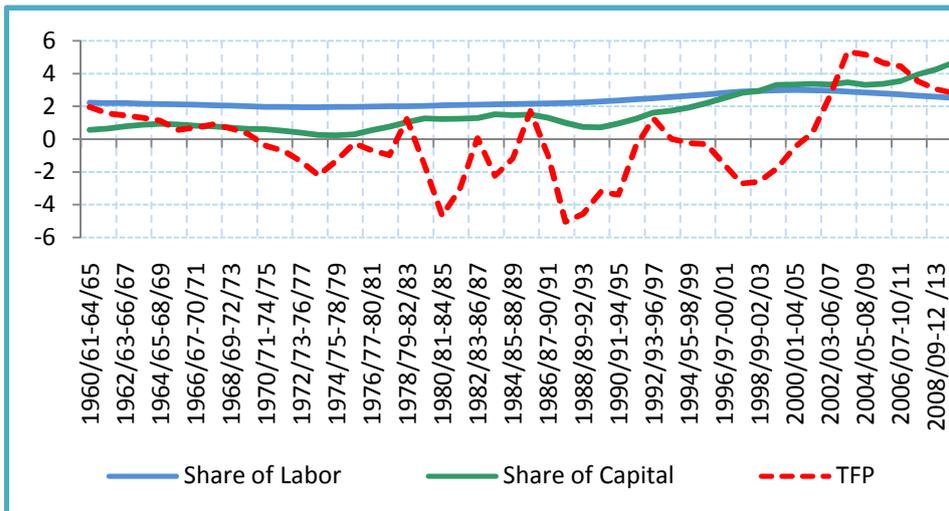
### **6.4.1. Structure of Sources of Growth**

Factor composition of an economy is one aspect of structural transformation. The last decade has witnessed an increasing share of capital in the GDP growth in Ethiopia. For long time, the contribution of capital to growth was modest. This is not surprising for a country in which more than 40 percent of the GDP comes from subsistent agriculture. After 2004/05, the contribution of capital to growth surpassed the usually stable contribution of labor force. (See Figure 6.7). In general, labor and capital had a respective share of 6.6 and 5.76percentage points of contribution to the 10 percent growth registered during 2009/10-2013/14. The balance 2.8 percent is the residual which usually is interpreted as total factor productivity in the case of modern economies.

A key indicator of signs of structural transformation is changes in productivity. In modern economies, total factor productivity is considered as a measure of factor productivity. Nevertheless, the efficacy of this indicator (which is also known as Solow's residual) as a measure of productivity is subject to debate even in developed economies because it could measure other shocks in the economy. In the case of developing countries such as Ethiopia, its application as a measure of average change in total factor productivity should be considered with caution. As it is shown in Figure 6.7, the residual (labeled as TFP) has been

very erratic depicting deep troughs during drought years and high crusts during bumper harvest following a good weather.

**Figure 6.7: Sources of Growth in Ethiopia**



Source: EEA staff computations using data from MOFED.

With this caveat in mind, TFP in the past decade has been positive and stable. Nevertheless, its magnitude has been contentious drawing dispute between Ethiopia and the International Monetary Fund (IMF) over the accuracy of the figure on GDP. The contribution of TFP in Ethiopian GDP growth ranged between 4.5 and 5.4 percent between 2003/04 and 2010/11. Country experience shows the maximum TFP that has been observed in some South East Asian countries is 2.5 percent. By this account- according to the IMF- the more than 5 percent TFP is considered to be on the higher side thus limiting the growth in Ethiopia to a maximum of 8 percent. The recent upsurge in gross fixed investment seems to avoid this anomaly. The 7.3 percentage point combined share of labor and capital out of the 10 percent growth leaves the share of TFP to

be 2.7 percent, which is not unprecedented. The question is rather how to sustain the high growth with such high rate of capital accumulation.

### Box 6.1: Methods Used in Calculating Capital Stock

Data on capital stock is not readily available for Ethiopia. It has been estimated for the purpose of this report using the fundamental equation of capital accumulation and the Harrod-Domar model. Physical capital evolves according to:

$$K_t = K_{t-1} + I_t - \delta K_{t-1}$$

where  $K_t$  = capital at period  $t$ ,  $I_t$  = gross fixed investment at period  $t$ , and  $\delta$  = depreciation rate. Data on gross fixed investment is available. Depreciation can be estimated to be 5 percent. However, a value for an initial capital stock is required.

The Harrod-Domar model relates growth in GDP ( $g$ ) with rate of investment ( $s$ ) and capital-output ratio ( $k$ ) according to:

$$g = \frac{s}{k} - \delta$$

where  $\delta$  = depreciation rate. This can be rearranged to give:

$$k = \frac{s}{g + \delta}$$

The initial capital stock can be approximated by:

$$K_0 = k_0 Y_0$$

The initial investment rate and growth rate are estimated as average values for the period 1960/61-1964/65 to give a capital-output ratio of 1.34. The initial capital stock is accordingly estimated for the year 1960/61 by multiplying the real GDP in 1960/61 by 1.34.

### Box 6.2: Method Used in Decomposing Growth into Factors of Production

The decomposition of growth into its factors of production is based on Solow's method. The aggregate production function follows the Cobb-Douglas technology with constant returns to scale relating output  $Y$  to labor  $L$  and capital,  $K$ :

$$Y_t = A_t L_t^\alpha K_t^{1-\alpha}$$

where  $\alpha$  is output elasticity of labor so that  $1-\alpha$  becomes output elasticity of capital, and  $A_t$  is considered to be a parameter of level of technology.

Taking the logarithm of both sides of the equation and differentiating with respect to time gives:

$$\frac{\left(\frac{dY_t}{Y_t}\right)}{dt} = \frac{\left(\frac{dA_t}{A_t}\right)}{dt} + \alpha \frac{\left(\frac{dL_t}{L_t}\right)}{dt} + (1-\alpha) \frac{\left(\frac{dK_t}{K_t}\right)}{dt}$$

This is equivalent to:

$$\frac{\dot{Y}_t}{Y_t} = \frac{\dot{A}_t}{A_t} + \alpha \frac{\dot{L}_t}{L_t} + (1-\alpha) \frac{\dot{K}_t}{K_t}$$

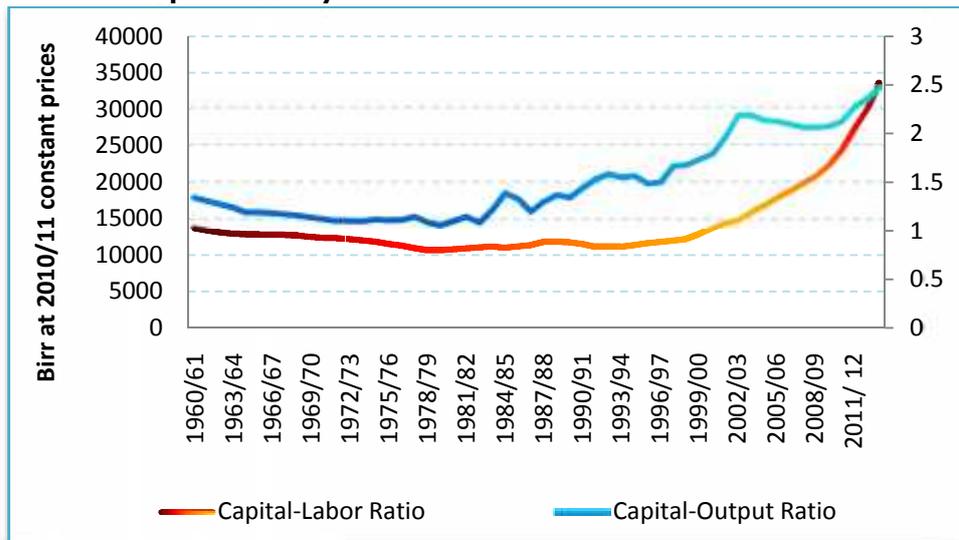
where  $\frac{\dot{Y}_t}{Y_t}$  = growth in output,  $\frac{\dot{L}_t}{L_t}$  = growth rate in labor,  $\frac{\dot{K}_t}{K_t}$  = growth in capital, and  $\frac{\dot{A}_t}{A_t}$  = residual or TFP.

Traditionally,  $\alpha = 2/3$  so that  $1-\alpha = 1/3$ .

As it has been exhibited in Figure 6.8, capital-labor ratio has been increasing. Leaving aside the nature of capital accumulated, such increasing trend in capital labor ratio indicates that at national level, a unit labor is being equipped with more capital than before. This is accompanied by a rising capital-output ratio which is a typical indicator of the occurrence of capital deepening-capital has a positive rate of expansion over and above the rates of labor and depreciation. According to basic growth theory, this is the stage where a country can benefit

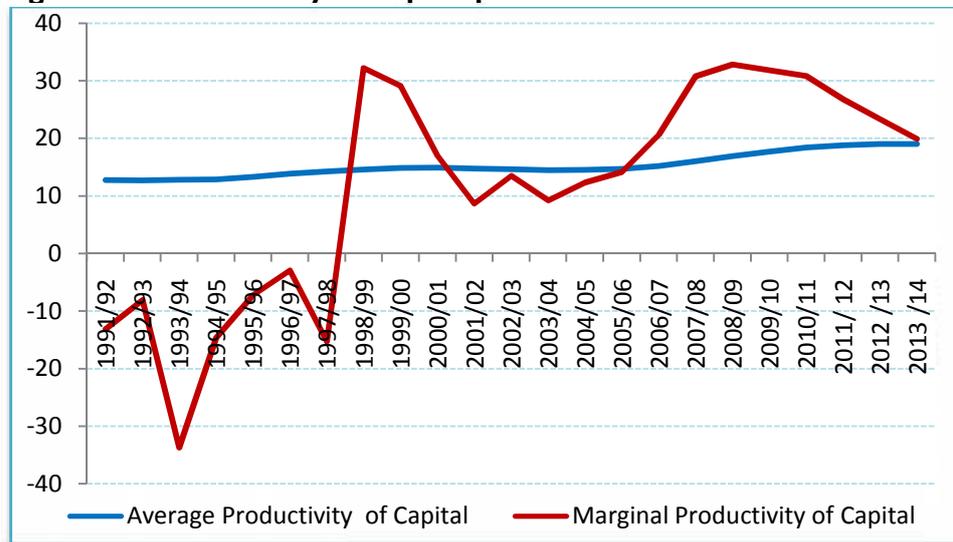
in expanding per capita income from accumulation of capital before it eventually heads to what is known as the steady-state level where only progress in technology brings about growth in per capita income [Solow, 1956].

**Figure 6.8: Increasing trends of capital in relation to labor and its productivity**



Source: EEA staff computations using data from MOFED.

Later stages of capital deepening are characterized by a declining average and marginal productivity of capital. Figure 6.9 shows that the average rate of capital tends to rise and the marginal productivity of capital is still above the average productivity of capital though it has a declining trend. Early declines in productivity of capital given the low level of per capita income and the high rate of capital formation may imply Ethiopia need to resort to quality of capital and sectoral shift of capital from less productive and "general purpose" infrastructure to key productive sectors such as the light and high-tech manufacturing sector.

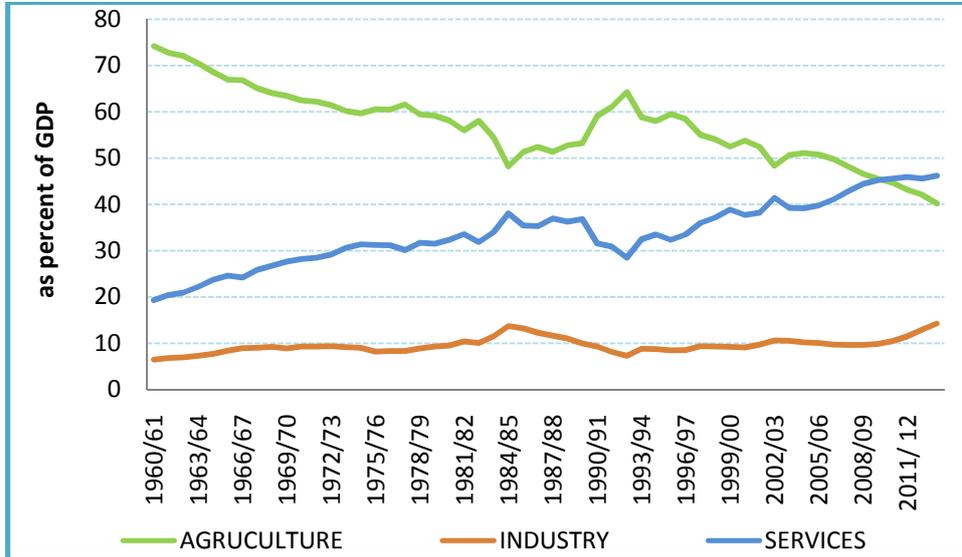
**Figure 6.9: Productivity of Capital per Worker**

#### 6.4.2. Changes in the Dynamic Composition of Sectors

One of the key indicators of intensity of structural transformation is the sector composition of growth. There are two broad indicators of sectoral composition of an economy from the supply side: the static and dynamic share of each sector in the GDP. Calculations and interpretations of the static shares of sectors in the GDP are straight forward. By this measure, the share of the agriculture sector in the GDP has been declining to have been overtaken its lead by the service sector in 2010/11. It still account for the major 40 percent of the GDP (in 2013/14).

The industry sector remained less vibrant for so long and its current static contribution to GDP stands at 14 percent. The marginal rise in the share of the industrial sector in GDP growth over the last three years is due to the aggressive expansion of the construction subsector instead of the manufacturing sector.

**Figure 6.10: Trends in the Share of Sectors in the GDP**



Source: EEA staff computations using data from MOFED, various issues.

More informative features about the structure of the economy emerge when the dynamic contributions of sectors are considered. Box 2.3 shows how to calculate the dynamic contribution of each sector and subsector to GDP.

In general, the service sector has been dominating the economic growth in Ethiopia for the last two decades. The period between 1991/92 and 2003/04 was characterized by a highly volatile agricultural performance and a stagnant industrial sector. The value-added in the service sector has been consistently growing fast during the period as if to compensate for the stagnant industry and illusive agricultural performance. Value-added in the agricultural sector had been growing at a lower rate than the population growth rate threatening the country's efforts to ensure food security. The period 2005/06 to 2008/09 witnessed a relatively stable high growth both in the agriculture and service sectors. The episode was, however, paralleled by a declining trend in the

contribution of the industrial sector to growth. Out of the 10.9 percentage points of growth in GDP, 9.97 percentage points (91.5 percent) was the contribution of agriculture and service. The period was also accompanied by high rate of inflation which threatened the sustainability of the high economic growth.

### Box 6.3: Methods Used in Decomposing Growth by Sectors from the Supply Side

The method used to show the general direction of the transformation process from the supply side is growth decomposition by sector. The exercise combines the growth dynamics of each sector and its share in the GDP. GDP by definition is the sum of the value added of the various sectors:

$$GDP \equiv Y = \sum_{i=1}^{\pi} v_i$$

where  $v_i$  = value-added in the  $i^{\text{th}}$  subsector. Growth in GDP is given by:

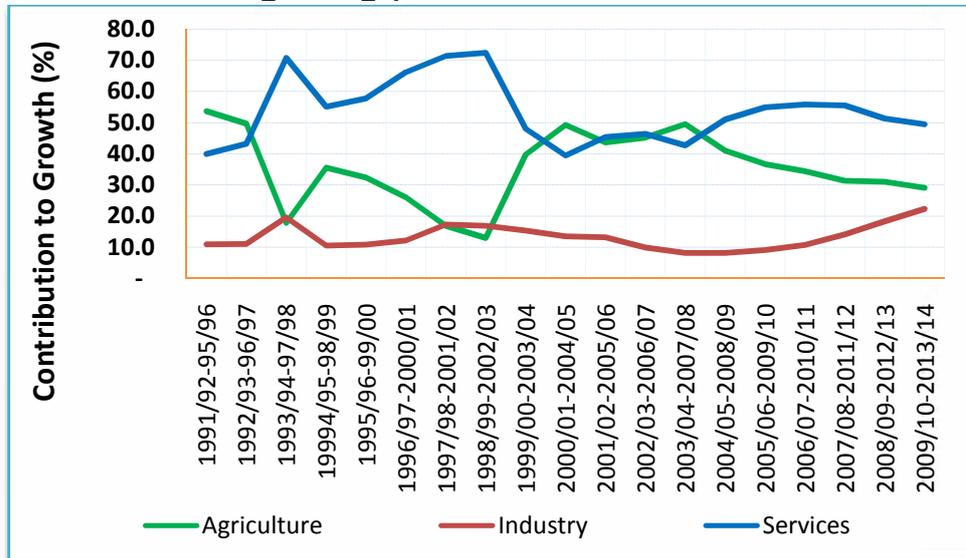
$$g = \frac{\sum_{i=1}^{\pi} \Delta v_i}{Y}$$

Multiplying every  $v_i$  by  $v_i/v_i$  gives:

$$g = \sum_{i=1}^{\pi} \left( \frac{\Delta v_i}{v_i} \right) \frac{v_i}{Y} = \sum_{i=1}^{\pi} g_i s_i = \sum_{i=1}^{\pi} g_i^*$$

where  $g_i = \frac{\Delta v_i}{v_i}$  is growth in the value-added of the  $i^{\text{th}}$  sector, and  $s_i = \frac{v_i}{Y}$  is the share of the  $i^{\text{th}}$  sector in the GDP. The proportion of the contribution of each sector to the overall growth in GDP can be computed as the ratio of the weighted growth in the value added of the sector ( $g_i^*$ ) to the growth in GDP ( $g$ ). Computations of contributions of sectors to growth give reasonable values for averages of relatively longer period. We used five-year moving average of the contributions of sectors and subsectors to growth for the period 1991/92-2013/14.

**Figure 6.11: Trends in the sectoral contributions to growth (five -year moving average)**

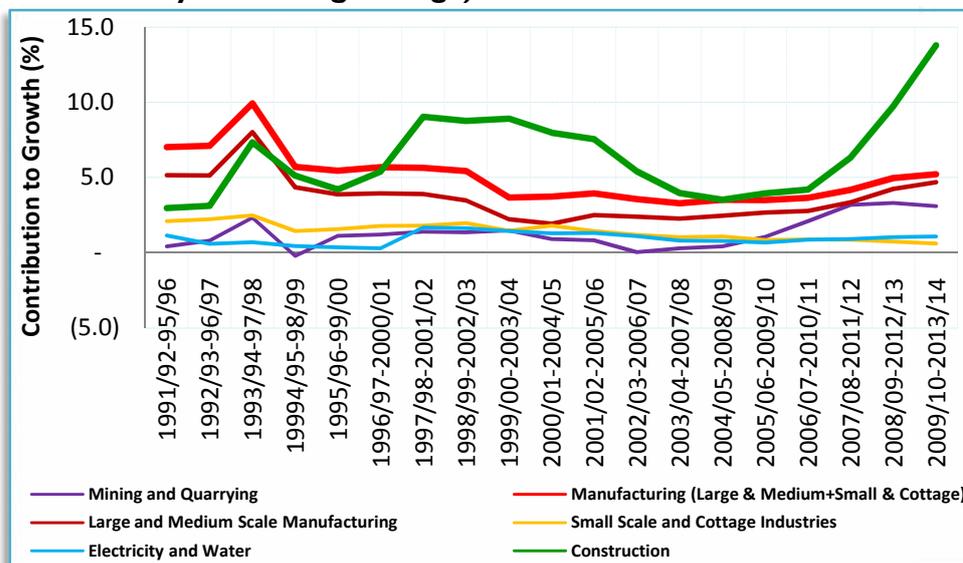


Source: EEA calculations using data from MOFED.

The growth and transformation plan that was introduced in 2010/11 had a primary goal of shifting the center of momentum of growth from service sector to the industrial sector in particular the manufacturing industry. The period since 2009/10 seems to display an important episode in which the contribution of the agricultural sector began to consistently fall while that of the industrial sector began to rise. The contribution of the service sector to growth seemed to be stable. Nevertheless, considering this trend as a sign of emerging transformation is tricky. Traditionally, the broader sector industry consists of a number of sectors in the International Standard Industrial Classification (ISIC). Those sectors are mining and quarrying; manufacturing; electricity, gas and water supply; and construction. The rise in the contribution of industrial sector to the overall growth in GDP was largely due to the boom in the construction sector. Out of the 22.3 percent contribution of the industrial sector to the

overall GDP growth observed during GTP, 14 percent was the share of the construction sector. If one adds the 3 percent contribution of the mining and quarrying sector to growth, construction and related activities accounted for 17 percent of the growth in GDP during 2009/10-2013/14. This leaves the contribution of the manufacturing sector to the overall growth in GDP at a modest expansion from 4 percent during PASDP to 5.2 percent during GTP.

**Figure 6.12: Trends in the sub-sectoral contributions to growth (five-year moving average)**



Source: EEA calculations using data from MOFED.

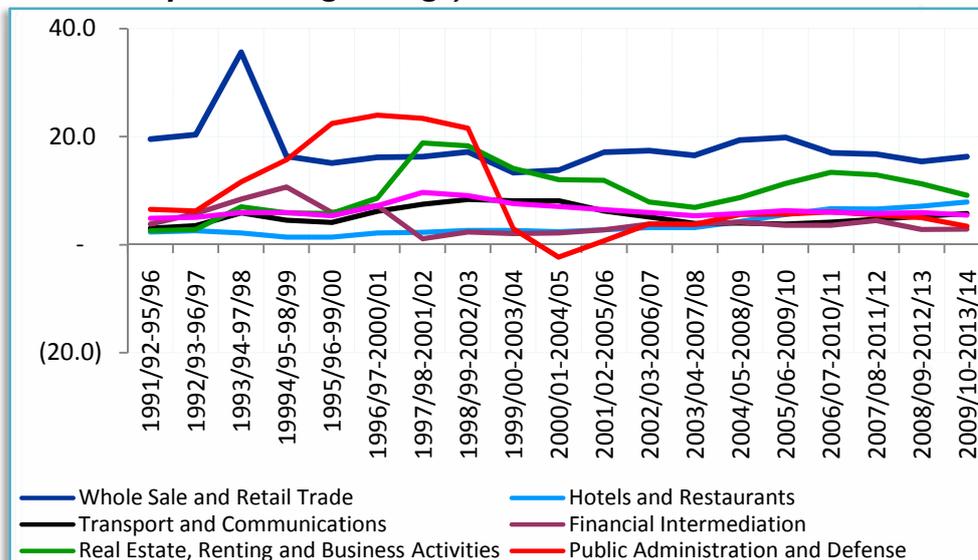
One of the tenets of GTP was to base the industrialization on broad based-micro and small scale enterprises. However, the objective was not verified by strong performance of the subsector in the last five years as its contribution to growth stood at less than 1 percent.

If signs of structural transformation have to be judged by a significant shift from agriculture to manufacturing industry in driving the economy, the Ethiopian economy has to yet witness a structural change. A successful completion of public projects in the manufacturing sector such as the sugar projects may contribute to the transformation process. Nevertheless, the decisive process of transformation is expected to come from the active participation of the private sector in the manufacturing industry. Important developments towards the industrialization process are also expected to emerge when major infrastructural projects such as the Great Ethiopian Renaissance Dam are completed.

The patterns, nature, and degree of dominance of the service sector in the Ethiopian economy require discussion. The service sector accounted for the growth in GDP in the range of 45 percent to 70 percent over the last two decades. Looking at the trend in the past four years of GTP, the contribution of the service sector to the dynamics of the economy stood well above 50 percent while that of agriculture has steadily declined to reach 30 percent. This may lead some observers to believe that agriculture is paving the way for the service sector to overtake in dominating the economy and hence witnessing some degree of transformation. Such expectations may not be justified for a number of reasons. First, while the takeover of the service sector in the economy in terms of its share in the total value-added is a recent phenomenon, its dominance in the growth dynamics of the economy has been there for the last two decades. Second, the service sector in Ethiopia is dominated by activities which trade locally basic agricultural commodities and imported goods falling short of financing the import bills of the country. Third, the mainly localized service sector is operating in the absence of a robust manufacturing sector that at least produces the basic industrial goods the country needs. Thus, for healthy structural transformation, either the service sector need to have enough locally produced industrial as well as agricultural products to trade or the sector need to export part of its products to cover the import bills of industrial goods it imports in the process of trading.

To this connection, it is usually observed that service sector has the largest share in the economic structure of rich countries. An important aspect of those economies is that first, they have a minimum level of industrial establishments capable of supporting the high rate of activities in the service sector. Second, most of the activities in the service sector in rich countries are internationally tradable either capable of fetching hard currencies or are backed by internationally traded currencies such as the US dollar, the Euro, and pound sterling.

**Figure 6.13: Trends in the sub-sectoral contributions to growth (five - year moving average)**



Source: EEA calculations using data from MOFED.

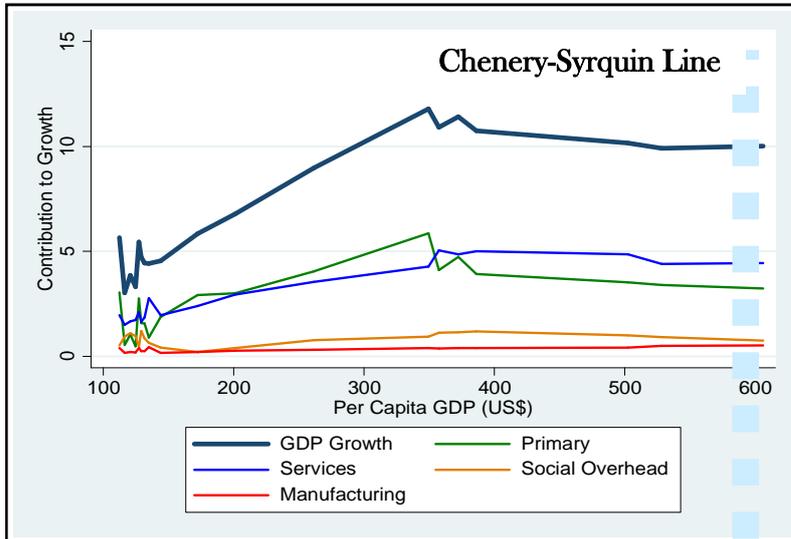
Among the various subsectors under the service sector, wholesale and retail trade alone accounted for 16.3 percent of the growth in GDP over the last five years. This is followed by the subsector real estate, renting, and business activities with a share of 9.1 percent in growth. The hotels and restaurants

subsector is the third area of activity within the service sector with an increasing trend of contributions to the growth dynamics of GDP. It had a share of 7.9 percent contribution to growth in GDP over the same period. That means, the three major subsectors alone accounted for a third of the 10 percent average growth of GDP registered over the last five years.

As it has been introduced in the literature part of this report, as structural transformation occurs, a rising level of per capita income goes with industrialization. The dynamic share of the manufacturing sector rises until industrialization reaches full scale while that of the primary sectors declines. The dynamic share of the service sector tends to be stable regardless of the intensity of transformation. High accumulation means that the contribution of social overheads to growth tend to rise.

How does this pattern look like in Ethiopian? The rapid growth in GDP in the last decade means that per capita GDP in Ethiopia more than tripled from US\$ 172 in 2005/06 to US\$ 606 in 2013/14 at the current official exchange rate. The 600 US\$ per capita has been the crossing line into the dynamics of structural transformation in the Chenery-Syrquin investigation of countries' experience of structural transformation. By this measure, Ethiopia has so far performed well registering an 8 percent growth in per capita GDP. The stable and high share of services in the growth of GDP is also consistent with international experience of structural transformation. The modest fall in the dynamic contribution of the primary sector is also what is expected during the beginning of structural transformation. What is not typically consistent with international experiences of structural transformation is the absence of appreciable rise in the dynamic contribution of the manufacturing sector in the GDP in Ethiopia. At the level of per capita GDP of US\$ 606, the contribution of the manufacturing sector in the 10 percent growth in real GDP stands at a mere 0.5 percentage points (only 5 percent of the growth in GDP). By this account, Ethiopia has yet to see a comforting sign of the start of structural transformation.

**Figure 6.14: Level of Transformation: Chenery-Syrquin Approach**



Source: EEA staff computations using data from MOFED.

#### 6.4.2. Domestic Demand, Import Substitution, and Export Diversification

An important question to ask at this point is that is high growth such as the one Ethiopia has registered consistent with a low share of the manufacturing sector in growth and does this rule out possibility of structural transformation? Primarily, high growth can occur without transformation depending on the comparative advantage and resource endowment of the country. More importantly, structural transformation could occur at a lower or higher level of per capita income than the normal average depending on the size of the country and trade policy (Syrquin, 1988]. While Ethiopia is a large country, the focus on primary production with less attention to import substitution, and the dominance of primary commodities in its export tends to delay the transformation process.

**Box 6. 4: Methods Used in Decomposing Growth by Sectors from the Demand Side**

Growth in GDP from the expenditure approach can be decomposed into its components in a number of ways. Decomposing the growth in total domestic demand into the growth of its components is straight forward. Total domestic demand or absorption is the sum of private consumption (C), government expenditure (G), and gross capital formation (I). Note that all the three components can include imports. Thus, the dynamic share of these components of total absorption can be calculated from:

$$g_A \equiv \frac{dA}{A} = \frac{dC}{C} \left(\frac{C}{A}\right) + \frac{dG}{G} \left(\frac{G}{A}\right) + \frac{dI}{I} \left(\frac{I}{A}\right) = \sum_{i=1}^k g_i^* s_i$$

where  $g_A$  = average growth rate in domestic demand,  $g_i^*$  = growth rate in each component of domestic demand, and  $s_i$  = share of the  $i^{th}$  component in the total domestic demand.

GDP in the Ethiopian case is lower than total domestic demand due to higher import bills over receipts of exports. Growth decomposition by the expenditure approach involves some accounting for export expansion and import substitution. Eysenbach (1969) based on the works of Lewis and Soligo (1965) suggested a method of decomposing output growth. Output Y can be defined as the sum of domestic demand for domestically produced goods (Z) and export (X):

$$Y = Z + X = \alpha A + \beta M^w$$

where  $\alpha$  is the share of domestic output in total domestic demand A, and  $\beta$  is the share Ethiopia's export in the total import of its major trading partners,  $M^w$ . The instantaneous growth rate of output is thus given by:

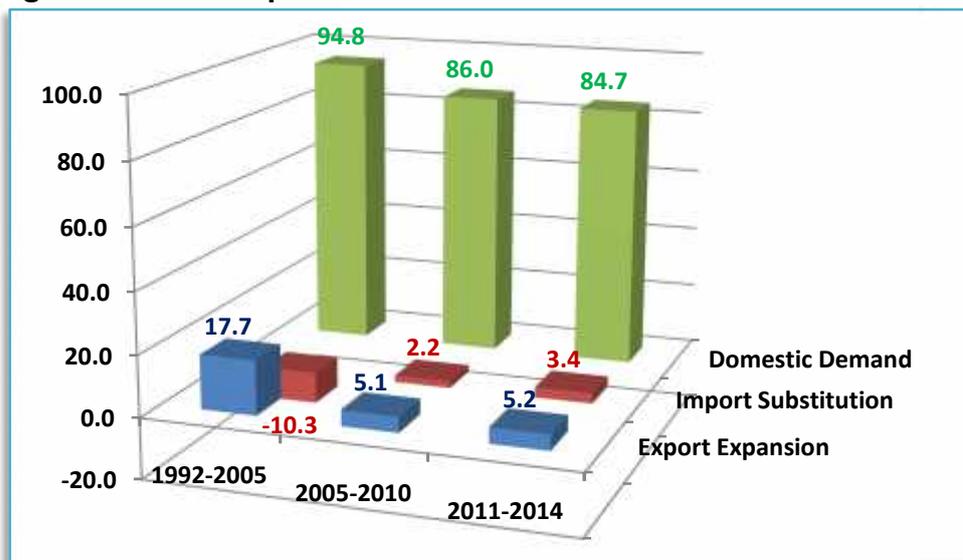
$$g \equiv \left(\frac{dY}{dt}\right) \frac{1}{Y} = \left(\frac{dZ}{dt}\right) \frac{1}{Y} + \left(\frac{dX}{dt}\right) \frac{1}{Y} = \left[\left(\frac{dA}{dt}\right) \left(\frac{Z}{Y}\right)\right] + \left[\left(\frac{dM^w}{dt}\right) \left(\frac{X}{Y}\right)\right] + \left[\left(\frac{d\alpha}{dt}\right) \left(\frac{Z}{Y}\right)\right] + \left[\left(\frac{d\beta}{dt}\right) \left(\frac{X}{Y}\right)\right]$$

where t stands for time. This way, growth in output is decomposed into growth due to domestic demand (the term in the first square bracket), due to export or foreign demand (the term in the second square bracket), due to import substitution (the term in the third square bracket), and due to competitiveness (the term in the last square bracket).

Similar exercise (Chenery and Syrquin, 1980) decomposes growth in total output (final sales plus intermediate consumption) into growths due to domestic demand expansion, export expansion, import substitution, and changes in input-output coefficients where the domestic expansion is further decomposed into growths due to expansion in final demand and intermediate consumption.

Decomposition of growth in GDP from the demand side shows that about 85 percent of growth in GDP is explained by expansion in domestic demand during the period 2010/11-2013/14. Export, and import substitution accounted for about 5.2 percent, and 3.4 percent, respectively, of the total growth in GDP during the same period. While the contribution of import substitution to growth increased by 1.2 percentage points during the period of GTP over the records during the period of PASDEP, export did not show an appreciable rise in its contribution to growth over the two planning periods. This outcome is expected given the structure of the Ethiopian export which is still dominated by primary commodities. The period of GTP in particular was characterized by unfavorable international market condition for coffee as its global price slumped.

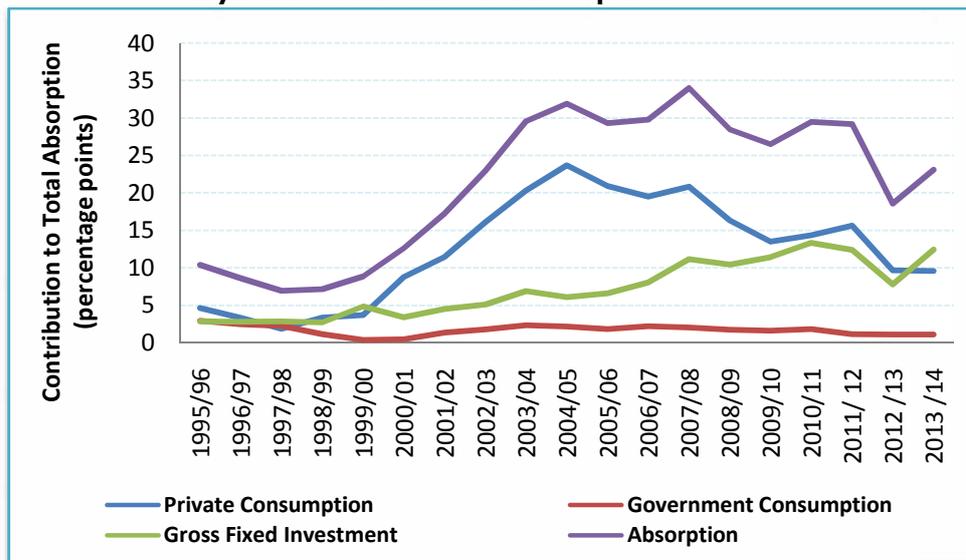
**Figure 6.15: Decomposition of Growth from the Demand Side**



Source: EEA computations using data from MOFED.

The total nominal absorption or domestic demand which, in the Ethiopian case, is greater than GDP by the size of imports net of exports has been rising since 1999/2000. A very noticeable development that has been emerged since 2005/06 is the dominance of gross fixed investment in the total demand. Gross fixed investment surpassed private domestic consumption in terms of their dynamic contribution to domestic demand. The major component of the gross fixed investment is public investment both in infrastructure and enterprises. According to the World Bank (2013), rate of private investment (as percent of GDP) declined from 13 percent to 10 percent while rate of public investment rose from 17 to 25 percent between 2007/08 and 2011/12. This shows that growth in Ethiopia has been largely driven by expansion in domestic demand primarily by private consumption and public investment in the last decade.

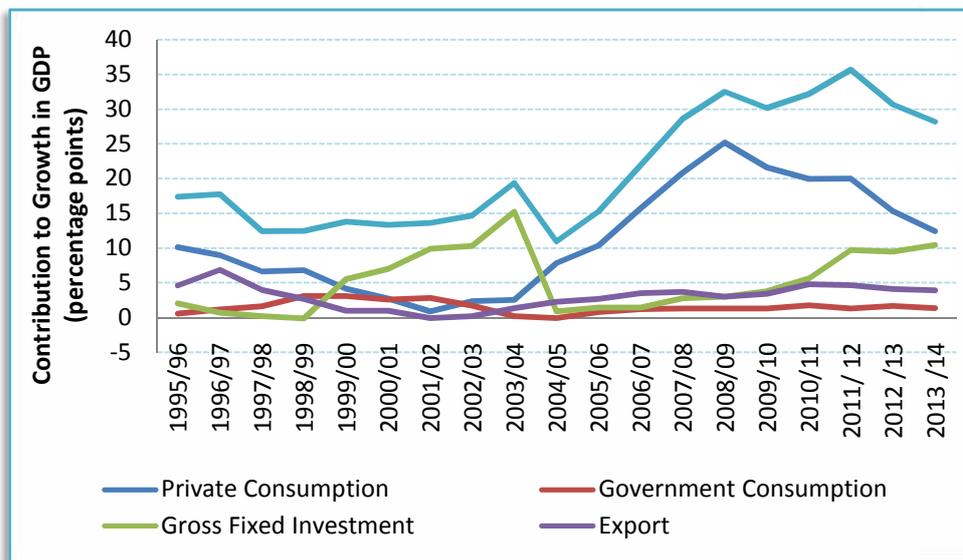
**Figure 6.16: The Contribution of Demand Components to the Dynamics of Domestic Absorption**



Source: EEA staff computations using data from MOFED.

A decomposing of growth in GDP into the demand-side components of GDP after netting out imports from each component suggests that the private consumption and gross fixed investment have been the major drivers of growth. In the last five years, private consumption and gross fixed capital formation accounted for 23 percentage points of the 28 percent growth of the nominal GDP. The balance 5 percentage points growth was accounted by expansion in export and government expenditure, mainly recurrent expenditure.

**Figure 6.17: Contribution of Components of the Demand Side to GDP Growth**

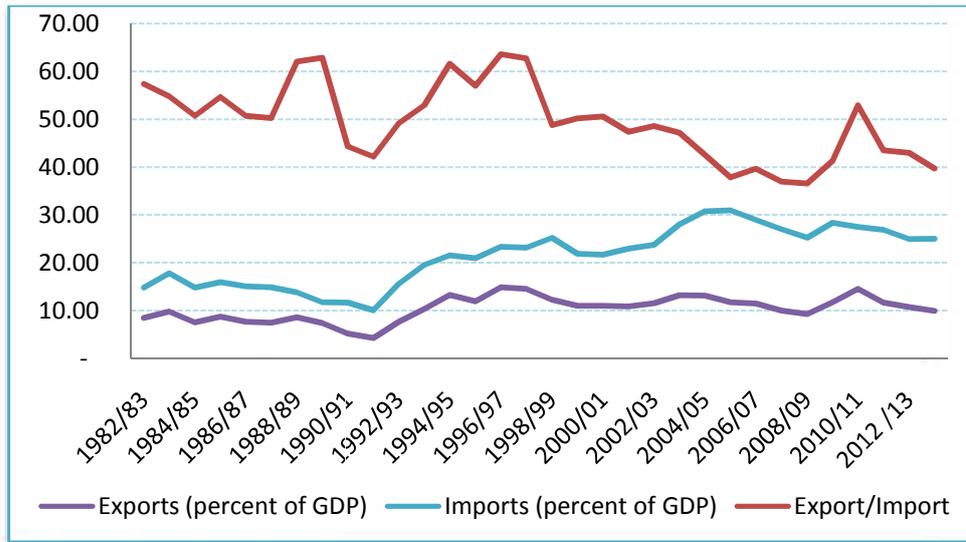


Source: EEA staff computations using data from MOFED.

In particular, the dismal contribution of the export component in the face of growing imports is not a good sign of a transformation process. From the previous discussions, one notes that Ethiopia as a large country with expanding domestic demand could either foster transformation through import substitution or by aggressive exports of light industrial goods. Figure 6.18 shows

that Ethiopia's export has been straggling to match the rising rate of import bills. The current account deficit as percent of GDP has in general been widening. This is also seen in the declining trend of the export to import ratio.

**Figure 6.18: Trends in Exports, Imports, and the Current Account Balance**



Source: MOFED and EEA staff computations using data from MOFED.

Receipts of exports financed in the range of 50 to 65 percent of the import bills of Ethiopia for the period between mid-90s to 2000. Since then, the export import ratio has been declining except in 2010/11 when coffee attracted high prices on the international market. Similar periods of better export performance due to coffee boom include 1994/95 and 1996/97. The period 2005/06 to 2008/09 exhibits a declining capability of exports to finance imports. Three major events might have contributed for the widening current account deficit during the period: a rising imports, poor performance in overall export due to the global financial crisis, and poor performance in the coffee export due

to the friction between traditional exporters and the newly introduced Ethiopian commodity exchange (ECX).

While accumulation of capital is important in deriving the Ethiopian growth, the quality of capital accumulated, and efficiency issues need to be scrutinized. The rising share of capital formation in growth is accompanied by an increasing capital-output ratio, and a declining contribution of private consumption to growth. The investment in the infrastructure so far is understandable. The rising capital-output ratio could be partly due to the type and quality of capital as well as the fact that Ethiopia is making transition from less capital intensive system of production in the sense that the economy is at the stage of capital deepening. Nevertheless, further sustainability of growth requires shifting capital accumulation from infrastructure to the manufacturing industry and keeping appropriate balance between accumulation and consumption.

## **6.5. Other Features of Structural Transformation**

Migration, urbanization, labor market structure, demographic compositions, and institutional transformation are elements of structural transformation that need to be researched. There are signs of fast rate of urbanization in Ethiopia. A rural-urban migration is expected to be facilitated by the significant investment in rural education. Nevertheless, rate of urbanization in Ethiopia remains to be one of the lowest at 18.3 percent according to the 2013 Labor Force Survey.

Unemployment in urban areas is still very high. And yet, firms complain about shortage of skilled labor. Many young Ethiopians migrate abroad mainly to the Middle East. The labor structure in Ethiopia is still characterized by primary agriculture. The boom in the urban infrastructure and construction sector might help to absorb migrants from rural areas while many from the rural origins migrated abroad. Given these general conjunctures, the structure of the labor market including the productivity, skill and wage structure requires a separate research.

Institutions are important means of assisting successful structural transformation and their change for the better is both a sign and a means of structural transformation. Institutions in the Ethiopian case need to demonstrate that a high growth in GDP is translated into both better quality of life and efficiency for further growth. The institutional transformation could help in converting the high growth into what many may think are trivial but are signs of transformation. Those include quality supply of utilities such as water, electricity, road, and civil services.

## **6.6. What Can Ethiopia Learn from Other Countries?**

Ethiopia has so far achieved important milestones in building capabilities and registering high economic growth. Infrastructure development is one of the necessary conditions for ensuring structural transformation of an economy. Endeavors in this venture have so far been successful in Ethiopia and in the process generated high economic growth. Nevertheless, accumulation and high growth in GDP per se are not the sufficient conditions for structural transformation to occur, which in turn determines the sustainability of high growth capable of lifting a country beyond the “middle income trap.” The country matrix of indicators of transformation on Table 6.1 based on the review of the performance of three countries may better explain the nature of inputs and outcomes of an economic take-off.

Botswana, China, and South Korea have been selected to inform the Ethiopia’s bid towards structural transformation. High growth rates in GDP and high rate of accumulation are common to all the three countries. Botswana and China are known to have one of the highest rates of capital accumulation. Ethiopia’s performance in terms of these indicators is fairly comparable to the performance of the three countries. What is peculiar to the Chinese economy at the start of the economic take-off is that the country had high initial manufacturing capability when value-added in the sector had accounted for over

40 percent of GDP. Modest efforts of liberalization were meant to help the agricultural sector fuel the growth of manufacturing sector and pave the way for the success in exporting manufacturing products. In effect, accumulations in the Chinese economy were basically targeted to manufacturing capabilities. The outcome is that the Chinese economy, which is the second largest in the world, is still in the process of transformation with per capita income of US\$ 6,807 in nominal terms or US\$ 3,583 at 2005 constant prices.

Unlike China, South Korea had a low share of the manufacturing sector as it began the process of structural transformation. Its accumulations of capital aided by inflow of foreign resources was targeted towards accumulation of capabilities in a knowledge based manufacturing sector that eventually accounted for the major portion of the countries merchandise export. In 2013, South Korea's per capita GDP was US\$ 25,977 in nominal values or US\$ 23,893 in 2005 constant dollars.

Botswana during the economic take-off had a high rate of growth and high rate of capital accumulation both of which exceeding that of South Korea. Both Botswana and South Korea had low share of the manufacturing sector in the economy. The process of high growth and high rate of capital accumulation continued until early 1990s. What was not in common with South Korea was that the Botswana's economy was dominated by export of primary commodities and its capital accumulations were geared towards extractive industries. Beyond 1991, there was a stark difference between the two economies. Botswana has still low share of the manufacturing sector in its economy and the per capita income hovers around US\$ 7,315 at current prices. The economy is currently facing volatile commodity prices in the global market.

**Table 6.1: Country Matrix of Indicators of Transformation**

Country Matrix on the Process of Transformation				
	Botswana	China	Ethiopia	South Korea
<b>Botswana</b>	<b>Extractive Industry</b>			
<b>China</b>	<ul style="list-style-type: none"> <li>• High Growth</li> <li>• High Rate of Accumulation</li> </ul>	<b>High Initial Manufacturing Capability</b>		
<b>Ethiopia</b>	<ul style="list-style-type: none"> <li>• High Growth</li> <li>• High Rate of Accumulation</li> </ul>	<ul style="list-style-type: none"> <li>• High Growth</li> <li>• High Rate of Accumulation</li> </ul>	<b>High Rate of Public Investment</b>	
<b>South Korea</b>	<ul style="list-style-type: none"> <li>• High Growth</li> <li>• High Rate of Accumulation</li> </ul>	<ul style="list-style-type: none"> <li>• High Growth</li> <li>• High Rate of Accumulation</li> <li>• Larger contribution of manufactures to the economy (static and dynamic shares, export, employment)</li> </ul>	<ul style="list-style-type: none"> <li>• High Growth</li> <li>• High Rate of Accumulation</li> <li>• Effective use of foreign capital</li> </ul>	<ul style="list-style-type: none"> <li>• Effective use of foreign capital</li> <li>• A transformation from low to high share of manufactures in the economy</li> </ul>
<b>Outcomes of the process so far</b>				
<b>Per capita income at current US\$, 2013</b>	7,315	6,807	505	25,977
<b>Status</b>	Middle income country	On transformation	Preparation for transformation	Developed

Where does Ethiopia fit into? The structure of the Ethiopian economy in terms of low share of the manufacturing sector has similarity with the economic structure of Korea and Botswana at the beginning of the economic take-off. Both Ethiopia and South Korea benefited from foreign inflow of resource. If one considers the performance of the Ethiopian economy so far as a preparation towards transformation, then Ethiopia can emulate South Korea for its future efforts of ensuring viable structural transformation. If one dares to consider the performance of the Ethiopian economy over the last decade as a process of

transformation, then the Ethiopian economy as it stands now is best compared to the structure of the Botswana's economy. The difference is the driver of the high growth in Botswana was the extractive industry while the driver of the high growth in Ethiopia was public investment. Common to both sources of growth is that sustainability of high growth based on such sources is at stake and at best a middle income trap is likely.

In view of this research, the socio-economic achievements in Ethiopia over the last decade are preparatory measures for structural transformation. Ethiopia rightly aspires for industrialization where the manufacturing sector is expected to play the leading role in driving high growth. While the country is still working on the necessary conditions<sup>9</sup> towards achieving structural transformation that would eventually lead to the prospect of high level of per capita income, the type, and quality of capital need to be redirected into forming manufacturing capabilities. The culture of industrialization among entrepreneurs may be cultivated in the process. Ethiopia, unlike Botswana and even South Korea, has an advantage of large domestic market. Success in light manufactures does not necessarily have to be followed by aggressive export of those goods. As a large country with prospect of bigger domestic market, import substitution pays off for Ethiopia. Successful export of light manufactures would also be a bonus in facilitating the desired transformation.

## **6.7. Summary and Conclusions**

Structural transformation is the critical phenomenon in an economy that ensures sustainable growth with the leverage to transform a country from low to high capabilities. High economic growth, high rate of accumulation of capital

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<sup>9</sup> Basic infrastructure such as power supply, mass transport is still inadequate to initiate investment in the manufacturing sector.

and shifts of economic activities from sectors of low productivity to sectors of high productivity are the major pillars of structural transformation.

The growth and transformation plan of Ethiopia that has been launched in 2010/11 had a purpose of laying foundations for industrialization. The growth and transformation plan of Ethiopia that has been launched in 2010/11 had a purpose of laying foundations for industrialization. The country has succeeded in achieving high economic growth and high rate of capital accumulation. Public investment in the infrastructure sector and social overheads has created better capability and in the process generated high rate of economic growth. Nevertheless, high economic growth and high rate of capital accumulations are the necessary but not the sufficient conditions for structural transformation to occur. In particular, it appears that there is a long way to witness the shift of economic activities from sectors of low productivity to sectors of high productivity. The low share of the manufacturing sector in the economy and the lack of change in the structure of exports stand out as major hurdles of transformation. Judged by the performances in the last decade, Ethiopia is still in the preparatory stage that paves the way for structural transformation.

Investment in key infrastructure in a bid to lay foundations for sustainable transformation is expected to continue in the second phase of the growth and transformation plan. As the return to the type of capital Ethiopia had been accumulating so far tend to wane even before reaching a middle income status, one way of sustaining high growth is through revisiting the quality of capital and redirecting the use of capital to more productive sectors. Not only the size of infrastructure the economy has accumulated but also its quality and the cost at which it is acquired do matter for sustainability. The opportunity for Ethiopia in this regard is that the low share of the manufacturing sector in the economy means a potential for other rounds of high growth periods.

Thus important task ahead of the GTP-II includes redirecting the use of capital to ensure a shift in the economy form public investment-led demand driven

growth to private sector-led supply driven growth. In particular investment in the manufacturing sector in the magnitude and quality that can trigger a change in the sectoral composition of the growth momentum in favor of industrialization becomes critical.

Such a transition to a knowledge based economy requires institutional transformation. In addition to investments in physical infrastructure, issues such as service delivery, policy coordination, technology prioritization, and efficient labor market need to be revisited. At the heart of supply side constraints of the economy is the labor market. Labor market reforms and rewarding educational excellence through hierarchical incentives may prove essential to boost skill and motivation for work in a modern economy which Ethiopia is envisaging.



## **Chapter VII**

### **Raw Materials for Feasible Industrialization**

#### **7.1. Introduction**

Structural transformation is linked to reallocating resources from low- to high productivity activities between and within, especially manufacturing and modern services. This leads higher economy-wide productivity and progressively raises income. This is also considered as the shift from the dominance of largely subsistent agriculture to industry in an economy.

The role of industrialization is significant in achieving structural transformation. The economic arguments point to the deterioration in the terms of trade for poor countries' raw material and agricultural exports, differing income elasticity of demand for agriculture and industry (Engel's curves), and more generally, the fact that high productivity growth, considered the basis of rising per capita income, is only attainable through industrialization.

The history of industrial development acknowledges the factors that have contributed to the industrialization of early and newly industrialized countries. It has also shown how the key factors underpinning industrial achievements and influencing location of industries have been changing over time, at least by the degree of their importance.

In the nineteenth century, the key factor for locating industries was proximity to basic raw materials. This can be illustrated by the fact that the first industrial regions of Europe were coal districts. This is because steam power could only

be distributed *mechanically*, i.e by shaft or belt drive. It could not be transferred over long distance as later became possible with electricity. Besides, coal was expensive to transport relative to its price and it was therefore essential for all "heat using" manufacturing activities (not just steam power using) to be located close to coal deposits.

Since the twentieth century, however, proximity to raw materials source has ceased to be the sole indispensable factor due to better transportation facilities that have permitted the international movement of natural resources at falling costs. This can be evidenced by the achievement of today's "tiger economies" in South East Asia, which owe little to the local availability of industrial raw materials.

Although the importance of proximity to raw material sources for critical manufacturing industries as a localization factor has declined over time, it has not lost this importance equally across all countries. The degree of importance differs by stages of industrialization, degree of value added (primary versus processed commodities), transport infrastructure development, land locked versus coastal land, and foreign exchange availability.

In light of the above arguments, one can categorize Ethiopia under countries where the importance of local availability of raw materials is still indispensable to locate and promote industrial development. Obviously, the country is in its early industrialization phase, promoting low technology and local resource based manufacturing industries. This situation establishes the importance of the local availability of raw materials for the industrialization of the country.

This chapter highlights the role that raw materials availability has been playing in promoting industrial development, especially in influencing decision in locating industries. With regard to Ethiopia, further assessment is made here to

illustrate the importance of raw materials for three key priority agro-processing industries in location decision making and their overall development.

## **7.2. Conceptual Framework**

### **7.2.1. The Need to Focus on Raw Materials<sup>10</sup>**

There are three major reasons for focusing on an in-depth analysis of industrial raw materials.

1. The availability of raw materials has the power to influence industrial plant location (including FDI flow into the country) and hence fostering of the country's industrialization process.
2. Serious supply disruptions in the flow of raw materials compels existing manufacturing industries to closure (and discourage new entrants) and creates undesirable adverse effects on the sector in particular and economy in general.
3. To bring to light about the crucial role of raw materials in the industrialization process of the country so that policy maker may prepare raw materials supply securing strategy on essential industrial raw materials for the priority manufacturing industries of the country.

In LDCs, like Ethiopia, despite the apparent abundance of raw materials for manufacturing industries (especially agro-processing industries), under capacity operation has been reported by manufacturing industries every year attributing it partly to shortage and bad quality of domestic raw materials. This study, therefore, is aimed at tackling the problems of shortage of raw materials in agro-processing industries. To that end, the study attempts to assess the potentials current production, import, problems of realizing the potentials of

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<sup>10</sup> This section draws heavily on a study by Masood A. Badri 2007. Dimensions of Industrial Location Factors: Review and Exploration, Journal of business and public affairs, Volume 1, Issue 2, <http://www.scientificjournals.org/journals2007/articles/1178.pdf>

raw materials and put forward recommendations. A vast body of literature discusses the factors influencing locations of industries. The extent to which availability of raw materials especially in agro-processing industries determine location of industry and whether this is still valid varies from country to country depending on stages of industrialization achieved.

Of these studies, Von Thunen (1826) as cited in Fujita Masahisa 2011, for instance, developed a basic analytical model on the relationships between markets, production, and distance. He looked upon the agricultural landscape and asserted that the relative costs of transporting different agricultural commodities to the central market determine the agricultural land use around a city. The most productive activities will thus compete for the closest land to the market and activities not productive enough will locate further away.

Most often cited factors of industrial location are distance to market, and materials, prevailing wage rates (labour costs), productivity of workers, availability of labour, adequacy of transportation, closeness to producers, industrial climate, taxes, anticipation of market growth, transportation costs, availability of land for future site expansions, cost and availability of utilities, political climate toward business, population growth, and income levels of consumers.

Some new factors that influence industrial location have also emerged. These include, type of linkage between vertically linked industries (Venables, 1996; Carod, 2005), changes in the location of users (Hansen and Roberts, 1996), amount of expected development potential in the region (Wojan and Pulver, 1995), level of wages (Manders, 1995; Ma, 2006), changes in transport rates (Mai and Hwang, 1994; Leitham et al., 2000; Mazzarol and Choo, 2003), location of other competitors (Serra and ReVelle, 1994; Cieslik, 2005; Siebert, 2006), types and availability of resources (Vaughn, 1994; Chan, 2005), and hazardous

waste and pollution laws (Groothuis and Miller, 1994; Balance, 1987) also analyzed the effect of incentives in making international industrial location decisions<sup>11</sup>.

Economic reasons, such as tax incentives, cost of operations, and sales growth are usually seen as paramount for a decision to locate abroad. Social and political factors may also be important; for example, multinational corporations may spread their risks by setting up manufacturing plants in different countries (Vernon, 1968, 1971 and Belli, 1970 as cited Masood A. Badri 2007). Even personal reasons may dictate where a plant should be located (Bass, McGragor and Walters, 1977). More recent studies also consider location as a vital dimension in corporate environmental strategies (Vastag et al., 1996). Shove (1996) identified the effect of product-life-cycle and firm's size on location and suggested that the spatial patterns of industrial location are a result of a product's input and competition for each stage of its product cycle.

In an attempt to explain the determinants of FDI flow, Dunning (1993) has identified three variables: ownership-specific (O), location-specific (L), and internalization (I), in short referred to as the OLI framework. The key assertion is that all three factors (OLI) are important in determining the extent and pattern of FDI.

Ownership-specific variables include tangible assets such as natural endowments, manpower, and capital as well as intangible assets such as technology and information, managerial, marketing, and entrepreneurial skills, and organizational systems. Location-specific (or country-specific) variables refer to factor endowments as well as market structure, government legislation and policies, and the political, legal, and cultural environments in which FDI is

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<sup>11</sup> The whole authors in the paragraph are as cited in masood A. Badri, 2007.

undertaken. Finally, internalization refers to the firm's inherent flexibility and capacity to produce and market through its own internal subsidiaries.

The generalized predictions of the eclectic theory are that a firm can only capture a foreign market through FDI if it has the capacity to exploit simultaneously all the three advantages. The ownership and internalization advantages are firm specific features while the location advantages are country specific characteristics which the host country can influence directly. In general, countries that have location advantages can attract more FDI. But firms do not undertake FDI only for location specific advantages in the host country. Their location choice decisions consider the profitability with which the ownership and internalization advantages can be combined with that obtained from the location.

From the above discussions, the agro-processing industries are preferably located close to the raw materials; at least in the country the raw materials are produced. In this perspective, industries processing raw materials which lose weight in the process of manufacture or which cannot bear high transport cost or cannot be transported over long distances because of their perishable nature be located near the source of raw materials.

Moreover, the advantages of processing agricultural goods at point of production or source are well established (i.e. higher quality goods, lower cost of transport, improved handling, improved market performance, etc). Processing improves the value added of raw materials. Depending on the techniques involved, processing may also reduce bulk (e.g. by lowering moisture content, grading for quality, etc.), remove unwanted materials or contaminants such as fibre or soil, provide uniformity and remove spoiled or sub-standard factions.

Because of the generally perishable and bulky characteristics of agricultural products, many agro-industries tend to be located close to their major sources of raw materials. Consequently, their immediate socio-economic impacts tend to be exerted in rural areas.

In a nutshell, there are geographical and non-geographical factors influencing the location of industries. Geographical factors are of relative significance, e.g., availability of raw materials, power resources, water, labour, markets and the transport facilities. In some cases, for instance, industries which use heavy and bulky raw materials in their primary stage in large quantities are usually located near the source of the raw materials. Besides geographical reasons, historical, human, political and economic factors have started to emerge tending to surpass the force of geographical advantages.

### **7.2.2. Raw materials availability<sup>12</sup>**

In analyzing industrial raw materials, it is important to clearly define availability, especially from the economic feasibility perspective. Otherwise, it affects industries which move to a locality or country believing there is an abundant supply of raw materials.

In the literature, there are two key indicators of raw materials availability: "reserves" and "resources". "Reserves" mean the stocks at known sites that are technically and economically feasible to extract, i.e. presently being mined or likely to be. "Resources" refer to stocks which may become technically and economically recoverable in the future.

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<sup>12</sup> This section draws heavily on Raimund Bleischwitz \* International Raw Materials Markets: Rising Prices and Growing Conflict Potential Published in "Global Trends 2007", edited by Tobias Debiel et al. and by the Foundation for Development and Peace (SEF). Bonn 2006, pp. 65 – 78.

Availability can be static or dynamic. Static availability relates to current reserves to total annual consumption, while dynamic availability presupposes specific growth and adaptation processes. The lower the availability, the more urgent the problem of raw materials availability appears to be.

Availability of raw materials extends from local availability secured access to international raw material markets. However, access to foreign raw materials is constrained by international raw material markets structures. Very few large producers of raw materials dominate the world market and hence set the price.

The geology of the earth is extremely heterogeneous and thus mineral deposits are unequally distributed across borders. The mineral wealth of a country, i.e. the geological availability, is therefore predetermined by nature, although the actual use of this wealth depends on attractiveness for economic activity within a political and social framework. Given that only a few percent of the earth's surface and subsurface have been explored in detail, the potential for discovering new mineral deposits is high and the geological availability is indefinite.

In order to support sound policy and investment decisions, forecasts of mineral availability must be based on clear, unambiguous and, wherever possible, standardised terminology. A mineral deposit is any accumulation of a mineral or group of minerals that may be economically valuable. The value of a deposit depends on the quantity of the mineral, what it costs to mine and process (either locally or internationally), its current and future market price, and the political and social framework to access it. Mineral deposits occur only at locations where geological processes have concentrated specific minerals in sufficient quantities to be potentially mined. Consequently, unlike most other forms of development such as homes, commercial areas, farmlands roads and

other infrastructure, the possible sites for a mine or quarry are tied to a particular location and restricted to a few, relatively small areas.

Increased attention to substitution was strongly related to concerns about the steady and secured supply of (critical) raw materials. There are many technological sectors that are potentially threatened by supply disruptions and thoughts that they would find solutions by substituting vital functions through innovative materials, components, products, processes or services.

A raw material is labelled “critical” when the risks of supply shortage and their impacts on the economy are higher compared with most of the other raw materials. Two types of risks are considered: a) the "supply risk" taking into account the political-economic stability of the producing countries, the level of concentration of production, the potential for substitution and the recycling rate; and b) the "environmental country risk" assessing the risks that measures might be taken by countries with weak environmental performance in order to protect the environment and, in doing so, endanger the supply of raw materials.

Given the scale of global demand for mineral raw materials it is important to consider whether adequate resources exist in the earth's crust and technically available to meet future needs. Increased recycling, improved material efficiency and demand management will play important roles, but for the foreseeable future it is likely that new stocks of ‘virgin’ raw materials will continue to be required.

The uncertainties associated with resource estimates are very large. Nevertheless, in the past the reserves have been constantly replenished from undiscovered and unidentified resources. As a consequence, over the past 50 years, the extractive industries sector has succeeded in meeting global demand and the calculated life time of reserves and resources has continually been

extended further into the future. This is the result of normal economic behaviour. Mining companies normally invest only in what they require for their short-term needs to proven reserves and thus to justify commercial investment decisions over a period of, for example, 20 years. They do not necessarily aim at proving the full ore body. There is no indication that the extractive industry would fail to continue to maintain this record. It can thus be concluded that published reserve figures do not reflect the total amount of mineral potentially available and compilation of global reserve figures are not reliable indicators of long-term availability.

The key driver that has enabled supply to keep up with demand in the past had been the technological progress in exploring, mining and processing mineral raw materials. Current reserves represent only a small portion of the mineral resources. Additional reserves are continually identified at existing mines and known deposits, and through the discovery of unknown deposits. Such deposits may occur in frontier areas, such as the seafloor, deserts, at extreme depth, the arctic region or even in areas previously regarded as not prospective thereby opening up the chance for new exploration potential.

In addition, technological advances throughout the remainder of the mineral commodity life cycle (processing, manufacturing, recycling and substitution) also have important roles to play. More efficient processing methods, enabling improved yields on by-products in particular, can have a highly significant impact on future availability of certain metals. More efficient use of resources and recycling can also be very effective in supplementing existing reserves.

Of the factors which determine the supply risks, the political-economic stability of the producing countries and the level of concentration of production and the potential to substitute and the recycling rate are essential. Hence, the supply

risks of a certain raw material will only fully impact on an economy if the raw material cannot be substituted.

The other dimension relates to the environmental country risk, more precisely the risks that measures might be taken by countries with the intention of protecting the environment and by doing so endanger the supply of raw materials.

The supply of raw materials is not only a matter of availability of primary but also secondary raw materials. Hence the recycling rate is also considered. As recycled raw materials are another source of supply, the more a material is recycled the lower the supply risk and vice versa.

Hence, there seems to be no grounds to justify that supplies of some raw materials will soon be wholly depleted.

It is important to adhere to a more dynamic model rather than to a static view of geological availability. Such a dynamic model not only takes into consideration the general trends in reserves and technological developments, but also considers changes in the geopolitical-economic framework that impact supply and demand of raw materials.

Ethiopia is endowed with a variety of natural and agricultural resources that can be put to use as raw materials for different industries, especially agro-processing manufacturing industries. And some of its rising industries are those directly associated with the resources that are abundantly available in the country.

In fact, it is not essential for a country to have a wide material inputs-base to establish the relevant industrial firms. Some countries, for instance, Japan and

the Netherlands among others, have managed to develop without having a vast domestic resource base. But resource disadvantages were compensated by their technological advantages and assured access to foreign raw materials.

However, the steady supply of raw materials, whether produced locally or imported from overseas, is vital for the development of the priority manufacturing industries and their achievement of competitiveness in the global market.

### **7.3. Priority Manufacturing Industries**

Industrial development experiences show that a country has rarely succeeded by promoting all kinds of manufacturing industries. It rather witnesses the identification of selective critical and viable manufacturing industries which are based on a country's resource potential, at least, during its initial industrialization stage, as the determining factor in achieving faster industrialization. Based on variety of considerations, Ethiopia has identified key priority manufacturing industries. These include food processing, textile, leather, chemical and metal, and engineering manufacturing sub-sectors. Technology wise, the country promoted more labour intensive (low technology/knowledge/capital intensive) industries. The selected industries can be categorized as agro and non- agro processing industries. The focus of this report is on agro- processing industries.

Identification of the above priority manufacturing industries by the country was, among others, based largely on the local availability of critical raw materials. Yet existing priority industries have been complaining about the dire shortage of raw materials evidenced by long time capacity under utilization. Thus, it is important to assess raw material potentials, current production and factors constraining the realization of the potentials.

### **7.3.1. Agro-Processing Industries**

#### **7.3.1.1. Definitions**

The agro-industrial sector is defined as the subset of a manufacturing sector that processes raw materials and intermediate products derived from agriculture, fisheries and forestry. Thus, the agro-industrial sector is taken to include manufacturers of food, beverages and tobacco, textiles and clothing, wood products and furniture, paper, paper products and printing, and rubber and rubber products, FAO (1997).

According to the UN International Standard Industrial Classification (ISIC), agro-industrial production includes manufacture of food, beverages and tobacco; textile, wearing apparel and leather; wood and wood products, including furniture; paper and paper products, printing and publishing; and rubber products.

Agro-industries are taken here as a component of the manufacturing sector where value is added to agricultural raw materials through processing and handling operations. With their forward and backward linkages, agro-industries have high multiplier effects in terms of job creation and value added. The demand pull created by an agro-industrial enterprise stimulates businesses well beyond the closest links with its direct input suppliers and product buyers; a whole range of ancillary services and supporting activities in the secondary and tertiary sectors of the economy are also positively impacted.

#### **7.3.1.2. Nature of agro-processing**

The roles that agro-industry plays are changing over time, and the distinction from other sectors is becoming less clear as technologies cut across industries (e.g. biotechnology). Moreover, agro-industries are increasingly using inputs that

they have not traditionally employed, while non-agro-industries are beginning to use raw materials from agriculture, fisheries and forestry. The key defining characteristic of the agro-industrial sector is the perishable nature of the raw materials it employs, the supply and/or quality of which can vary significantly over time.

Under uncertain raw material supply, planning of production and transformation processes and achieving economies of scale can be fraught with difficulty, especially where there are very specific quality parameters (e.g. canning of fruits and vegetables). Thus, there is an incentive for agro-industries to engage in primary production themselves (as with plantation systems) or to develop longer-term supply relations with producers, aimed at improving efficiency in production, securing a reliable supply, promoting the adoption of varieties that are best suited to processing operations, and so on.

The manufacture of food products, especially in the context of a developing country, typically involves a relatively limited range of technologies that do not differ widely across product categories. In most cases the level of value added is relatively limited, showing that raw materials account for a significant proportion of end-product prices. In contrast, a great variety of raw materials are used in the manufacture of non-food agro-industrial products, while there are diverse product end uses. The level of transformation undertaken in the non-food agro-industrial sector is usually considerable, indicating that the level of value added is high and raw materials account for a smaller proportion of the end-product price. Across both the food and non-food agro-industrial sub-sectors, however, there is a trend towards greater levels of transformation and value added, and the employment of more advanced technologies.

### 7.3.1.3. Raw materials for Agro –processing Industries <sup>13</sup>

In this section, among the agro-processing manufacturing industries, the critical raw materials used in the three agro-processing manufacturing industries, namely wheat for food processing, cotton for textile and hides and skin for leather are discussed in detail.

Agro-processing industries are broadly classified into food and non- food. Under food, we focus on industries which use wheat as their raw material including the grain mill, and spaghetti and macaroni producing industries. Of the non-food industries, textile and leather producing industries are considered for close scrutiny.

#### i) Food- Agro-Processing Industries

##### ***Food Processing: Wheat Grain***

The food industry is highly diversified, ranging from small, traditional, and family-run activities that are highly labour intensive, to large, capital-intensive and highly mechanized industrial processes. Many food processing industries depend almost entirely on local agriculture or fishing. The raw materials used are generally of vegetable or animal origins.

Of the various development constraints of the food processing industries, this study discusses agricultural raw materials, and the backward linkages to the food manufacturing industry sub-sector.

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<sup>13</sup> Asfaw Negassa and Mohammad Jabbar, Commercial Off-take of Cattle under Smallholder Mixed Crop-Livestock Production System in Ethiopia, its Determinants and Implications for Improving Live Animal Supply for Export Abattoirs, Paper to be presented at the 4<sup>th</sup> International Conference on Ethiopian Development Studies , August 2-4, 2007, Western Michigan University, Kalamazoo, Michigan, USA.

This study has selected wheat grain using large and medium scale manufacturing industries since it would be difficult to get data on all materials used by food processing industries. Only large and medium scale manufacturing is picked for analysis for there is no reliable time series data on the small and cottage industries. Wheat grain is a very critical raw material for flour mills, macaroni, pasta and biscuit processing industries.

In order to show the importance of raw materials for the growth of manufacturing industries, industrialization and hence economic transformation, the study tries to assess wheat grain production potential, and its constraints, the total local production trends, consumption ( especially local manufacturing industries), import and give some recommendations.

#### ***Production Potential<sup>14</sup>***

There is the potential to produce wheat in the intermediate altitudes, the highlands and lowlands of the country. The low land production areas require the utilization of irrigation since they suffer from insufficient rainfall.

According to CIMMYT, a study on the potential of wheat growing in Africa based on 12 countries, Africa is producing only 10 to 25 % of the production capacity both biologically possible and economically profitable.

With rain-fed agriculture alone and proper use of fertilizer and other investment 20 to 100% of the farmlands in the 12 nations (Angola, Burundi, DRC, Ethiopia, Kenya, Madagascar, Mozambique, Rwanda, Tanzania, Uganda,

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<sup>14</sup> Based on Negassa, A., B. Shiferaw, Jawoo Koo, K. Sonder, M. Smale, H. J. Braun, S. Gbegbelegbe, Zhe Guo, D. Hodson, S. Wood, T. Payne, and B. Abeyo. 2013. The Potential for Wheat Production in Africa: Analysis of Biophysical Suitability and Economic Profitability. Mexico, D.F.: CIMMYT.

Zambia and Zimbabwe) are ecologically suitable for wheat farming based on the analysis Provided.

According to the CIMMYT study, the aggregation of potential wheat area and production was made under different assumptions:

Firstly, the aggregation was made for pixels with strictly positive net economic returns (NER). However, in order to narrow down to the most profitable production areas, the study took a more conservative approach in estimating the potential wheat area and production of wheat by using  $NER > 200$  US \$/ha as the cut-off point value to make wheat profitable in the system. This value is expected to be higher than the average NER for other competing crops currently being grown in the potential wheat-growing areas (e.g. highland maize, barley, potatoes, etc).

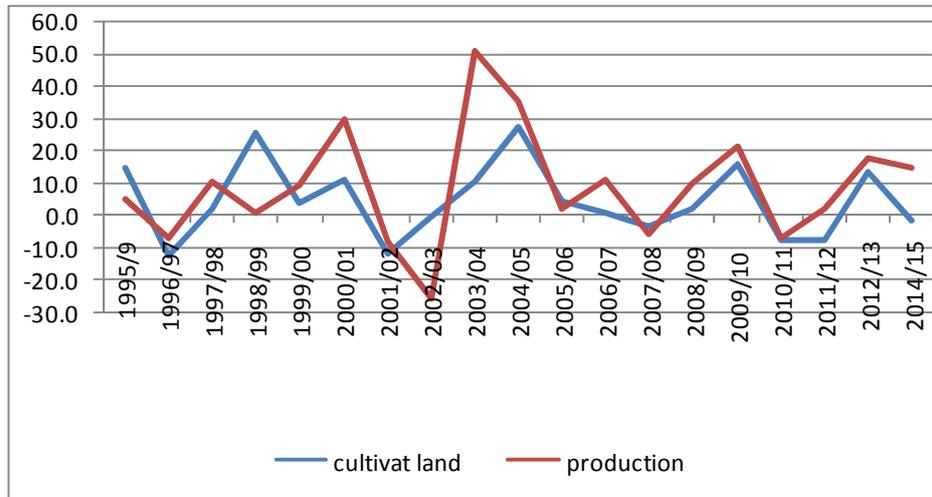
Secondly, due to lack of detailed data to mask the uncultivable areas within each grid cell that was considered suitable for profitable wheat production (e.g. settlements, roads, slopes, townships, marginal lands, natural water bodies, etc), the study adjusted the total area for profitable pixels using three different proportions, i.e., if only 5%, 10% and 25% of the total pixel area for most profitable pixels were used for wheat production. Using these assumptions, under the medium level of intensification of the pixel areas, the highly profitable land area ( $NER > US\$200/ha$ ) potentially suitable for wheat production (in million ha) is 6.5 for Ethiopia). If one uses only 10% of the most profitable pixels (with  $NER > 200$ ), the average profitability area will be 2.6 for Ethiopia). Similarly, the potential wheat productions from these highly profitable production areas (pixels) if 25% of the suitable land is planted with wheat will 23.5 for Ethiopia. Using the 10% conservative estimates of the most profitable ( $NER > USD200$ ) pixel area under wheat, the average product will be 9.42 for Ethiopia. Clearly, the currently reported wheat area and production for the study countries are

generally less than 10% of the simulated economically most profitable and competitive wheat area and production under different levels of fertilizer use. The current consumption requirements of the country are also less than the economically profitable simulated wheat production indicated. In Ethiopia, for instance, where wheat is a common traditional crop, the current wheat area and wheat production are less than 20% of the simulated highly profitable (NER >200/ha) wheat area and production (Negassa et al, 2013).

**Production**

In Ethiopia, wheat is one of the major cereal crops grown between 6 ° and 14 ° N latitudes; and between 35 ° and 42° E longitude ranging in altitude from 1500 m to 3200 m. The most suitable regions, however, fall between 1900 m and 2700 m. This area is limited to the intermediate altitudes and the highlands despite a potential for irrigated wheat production in the lowlands.

**Figure 7.1: Trends in wheat production and land under cultivation, growth in %**



Source: CSA, Various issues

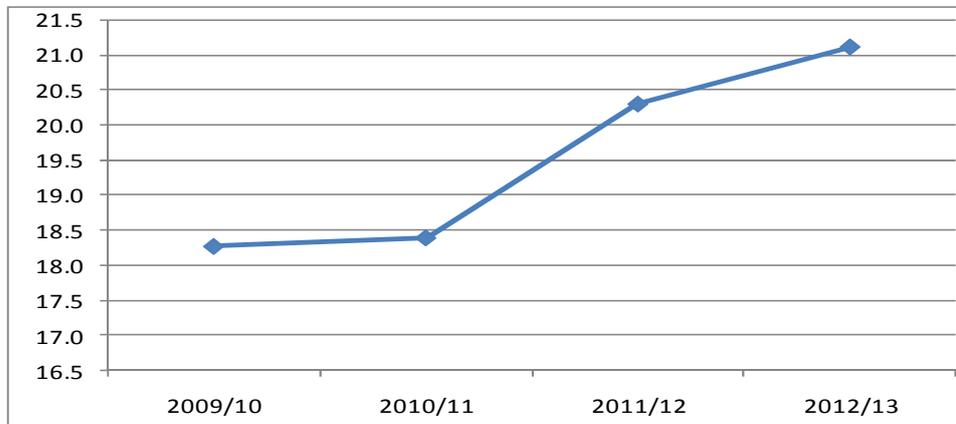
The growth in wheat production has been fluctuating from time to time. It mimics the growth in land under wheat cultivation. According to Figure 7.1, production and land under wheat cultivation grew, on average, by 8.6 percent and 4.5 percent respectively over the period (1995/96-2014/15).

**Productivity**

Another important performance indicator for realizing potential is productivity. Currently, the average national yield of wheat is estimated at less than 21 quintal s/ha. Depending on climatic and soil conditions the potential yield could range from 40quintals /ha to 80 quintals /ha. Some farmers participating in the national extension package program have reported considerably higher yields in different parts of the country thereby showing the chance to raise productivity to far higher level.

The yield per hectare has been increasing slightly over the last few years. In 2012/13, the yield per hectare reached about 21 quintals per hectare. The increase is however less than in the demand for wheat (Figure 7.2).

**Figure 7.2: Wheat yield per hectare (quintal/ha)**



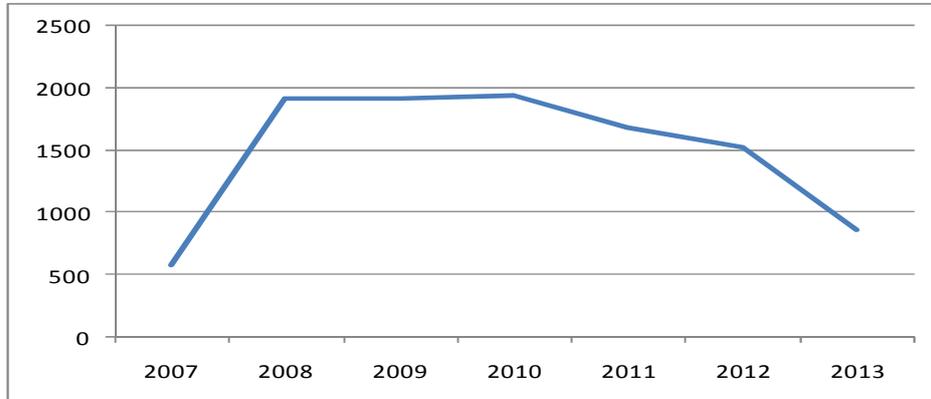
Source: Calculated based on data from MOA

***Production- Potential ratio***

The ratio of current wheat production to the wheat production potential is estimated to be about 20 percent implying the existence of a huge opportunity to increase the production of the crop by 4 times. It is only when wheat grain production is made to triple the current production level and approaches the potential that wheat using food processing industries operate at full capacity and hence achieve competitiveness and substitute import.

***Imports***

Wheat grains have been imported to be used as raw material for food processing industries and distributed to households. They are imported partly because of lack of sufficient quantity of local production or poorer quality of local produce to be used by manufacturing industries. In 2012/13, for instance, the country imported 257.8 thousand tonnes, which is about 39.6 percent of the total wheat used by local food processing manufacturing industries. This depicts the extent to which food processing industries are dependent on import for their critical raw materials supply, i.e., wheat grain. In fact, it is only part of the imported wheat which is channelled to food processing industries since import comprises commercial shipments and food aid.

**Figure 7.3: Total Wheat Imports To Ethiopia, In '000 MT**

Source: Shahidur Rashid and Solomon Lemma, 2014, *Public Wheat Imports to Ethiopia since 2008: The Rationales and Cost-Effectiveness*, International Food Policy Research Institute, *Research for Ethiopia's Agriculture Policy (Reap): Analytical*

### **Demand and Consumption**

Wheat is demanded by various entities. The focus here is on the demand by food processing manufacturing industries. The quantity demanded of raw material by an industry is determined, among others, by the installed capacity. Therefore, using the level of capacity utilization, it is possible to estimate the total raw material demanded.

A large proportion of the domestic consumption from the total supply was demanded by household agricultural producers and consumers for their household consumption. It is also demanded by food processing industries (micro and small scale and, large and medium scale food processing manufacturing) to prepare flour, pasta and macaroni, biscuits and bread and other fabricated food types.

Moreover, a significant amount of wheat is also demanded by the government and international organizations for emergency food aid and safety net programs. The need for household consumption (For food, seeds, feeds and others) and micro and small scale food processing industries (as an input of production), constitutes about 64.2 percent of the total demand of wheat in the country. The demand pattern also shows that there has been an increasing trend since 2002/03.

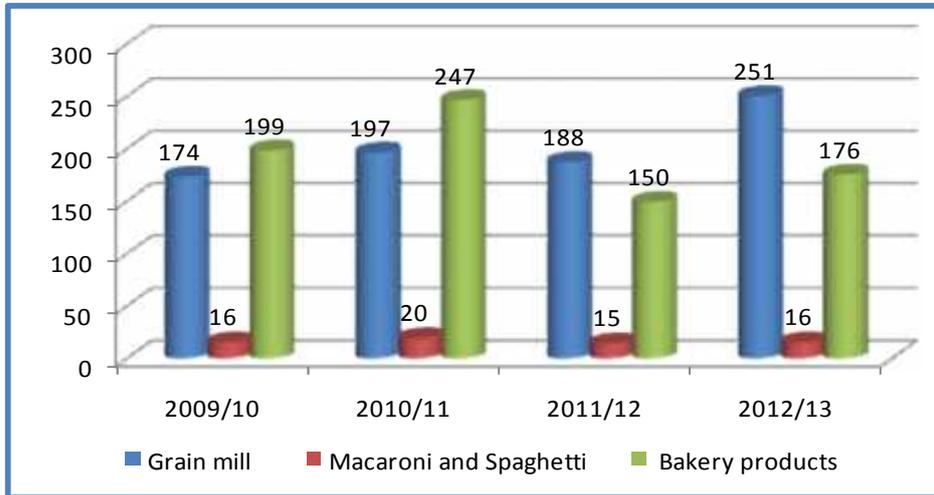
With respect to food processing industries, except for large and medium scale manufacturing industries, no statistical data is available for micro and small scale manufacturing industries for their input consumption demand and production activities. The manufacture of grain mill products and that of macaroni and spaghetti are the two entities in large and medium scale manufacturing industries that use wheat as an input of production.

The increase in the demand for wheat by the manufacturing industry emanates from increased capacity utilization expansion and increasing number of industries. The proportion of wheat demand by this sector constitutes about 7.1 percent of the total wheat demand of the country.

The number of grain mills and macaroni and spaghetti producing industries has increased from 174 and 16 in 2009/10, to 197 and 20 in 2010/11, respectively. The number of grain mills increased in 2012/13 but that of macaroni and spaghetti industries declined compared with 2010/11. Given the increasing demand for processed food as income increases and urbanization, grows the decline is attributable partly to the shortage of supply (Figure 7.4)

In total, the volume of wheat used by LMSMI increased from 544.3 thousand tonnes in 2010/11 to 651.3 thousand tonnes in 2012/13 indicating an average increase of 6.6 percent per annum. Given the focus for the sub-sector, the registered growth is insignificant.

**Figure 7.4: Trends in the Number of Wheat using Food Processing Industries**



Source: CSA, various issues

The share of imported wheat grew from 5.4 percent in 2009/10 to 39.6 percent in 2012/13. This depicts how much food processing manufacturing industries are dependent on import for their critical raw material. Given the potential to produce wheat the situation is worrisome. Therefore, efforts should be made to increase domestic production of wheat through increasing productivity and improving product quality so that food processing industries could get sufficient quantities that help them operate at their full capacity, and improve their competitiveness (Figure 7.5).

The share of import in the total supply of wheat to LMSMI has kept increasing from 5.4 percent in 2009/10 to 39.6 percent in 2012/13 thereby indicating increasing share of import but decreasing share of local production share.

**Figure 7.5: Quantity of Wheat Consumed by Food Processing Industries, in 000 tons**



Source: CSA, various issues

### **Capacity Utilization**

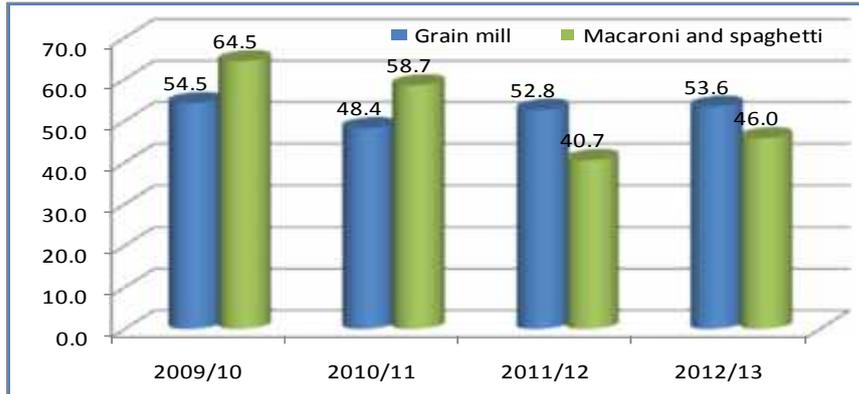
There are a number of flour milling industries, biscuit spaghetti and macaroni producing manufacturing industries. These food processing industries have been facing severe shortage in both quantity and types of wheat required for producing different products. As a result, the manufacturing industries have been operating far below their installed capacity.

There is a slight improvement in capacity utilization in 2012/13. However the overall capacity utilization rate in the food processing sector is slightly over 50 percent of its yearly capacity thereby challenging the very market presence of the sector’s industries in the face of cheap import.

The capacity utilization of the grain mill, and macaroni and spaghetti producing manufacturing industries are, on average, slightly over fifty percent. This low level capacity was achieved even through importing wheat. Unless wheat supply

to industry is doubled full capacity utilization cannot be achieved. Under this condition if new industries enter in the same sector, they may end up sharing existing capacity or lead to increased importing of wheat.

**Figure 7.6: Capacity utilization, as % of yearly capacity**



Source: CSA various issues

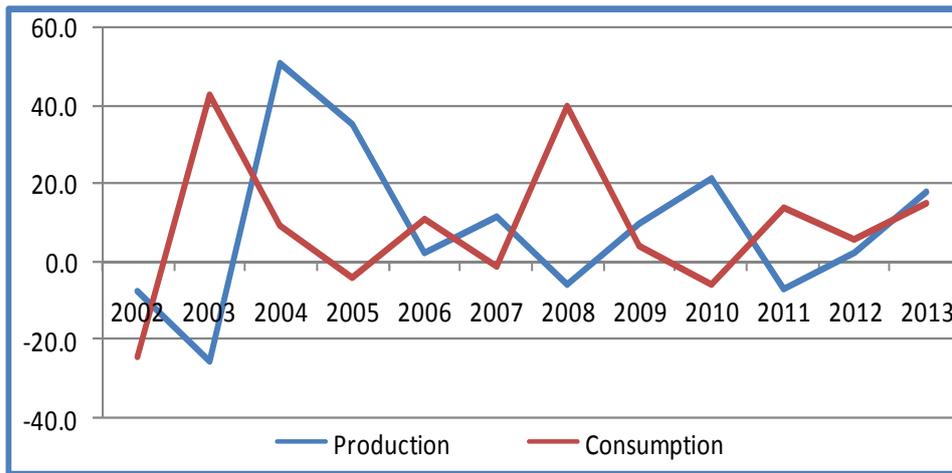
Given its potential, Ethiopia could increase wheat production by producing locally through increasing productivity, increasing land under cultivation and using irrigation. By doing this it is possible to save foreign exchange that could be spent on importing technology which would increase the productive capacity of the country and helps move the country from low technology based manufacturing industry to those of medium and high based ones.

**Production to consumption ratio**

According to the data, Ethiopia’s domestic production covered only about 67 percent of the total consumption, the balance being covered by import. Consumption of wheat, on the average, had been growing by 8.6 percent per annum over the period (2002-2013), which showed slightly higher than the average growth of production by 8.5 percent per annum over the same period.

The increasing demand has been attributable to growing urbanization, growing population, and increased women’s participation in the labour force (Figure 7.7).

**Figure 7.7: Trends in Wheat Production and Consumption, Growth in %**



Source: Production data is obtained from MOA; Consumption data is obtained from US department of agriculture.

<http://www.indexmundi.com/agriculture/?country=et&commodity=wheat&graph=domestic-consumption>

**Problems and Constraints**

Despite having a high potential to become self sufficient and even export, wheat production level is lower than the estimated potential; and the average productivity witnessed for average smallholder farmers is far behind model farmers. Besides, the potential due to irrigation scheme has been unutilized.

Of the constraints, low production, low productivity, poor quality and post harvest loss are the major ones affecting the sector.

**Recommendations**

- Efforts must be made to increase productivity and reach the world average in the short to medium terms.
- Expand production to potential areas, including the use of irrigation for the production of wheat, and
- Improve product quality and post- harvest management.

**ii) Non-food Agro-processing Industries****Textile Industry: Cotton**

The textile industry is the other strategic sector that plays a key role in economic growth and poverty reduction in Ethiopia. It is one of the major sources of foreign exchange and employment. Cotton is the major raw material for the industry. Thus, performance in the cotton sub-sector affect performance in the textile sector. Therefore, an assessment of the cotton sub-sector is necessary to achieve the planned structural change in the manufacturing industry of the country. To this end, this section tries to see the cotton production potential, current production, productivity, the problems affecting the development of the sub-sector in terms of realizing its potential and put forward recommendations.

**Potential**

Given favourable growing conditions, and availability of land, Ethiopia has a great potential for cotton production. Cotton chiefly grows in low-to-mid-altitude areas (i.e., sea level to about 1000m). According to the Ministry of Agriculture and Rural Development (MOARD) Ethiopia possesses 2.6 million hectares of land which is suitable for growing cotton. Ethiopia's major potential cotton growing areas include Omo-Ghibe, WabiShebele, Awash, Baro-Akobo, Blue Nile, and Tekeze river basins.

## **Production and Productivity**

### ***Production***

There are three major groups of cotton producers, the smallholder/peasant farms, large state farms and private commercial farms. Anecdotal evidence indicate that 40% and 60% of the total production comes from smallholder and private commercial farms, respectively. Afar is the major production region, followed by SNNP and Gambela regions.

According to MOARD (2004), the area suitable for cotton production in Ethiopia is estimated at 2575.8 thousand hectares. This figure is used to estimate the cultivated land to the potential for the period 2007/08- 2012/13. Overall, the size of land under cotton production has been increasing from time to time. In 2007/08, for instance, about 42.1 thousand hectares (1.6 percent of the potential) was brought under cultivation. In 2012/13, it has increased to about 114.5 thousand hectares (4.4 percent of the total suitable land). Yet the performance registered relative to the potential has been minimal. Despite the importance of cotton to the textile industry since the latter is considered as a priority manufacturing industry, such insignificant utilization rate may lead to examine the issues including the need to check the reliability of figures for potential land size for cotton production, the problems hindering investors from investing in cotton production in areas where suitable land is available and others. (Table 7.1).

**Table 7.1: Cultivated Area, Production of Cotton, and Productivity, Growth in %**

Fiscal Year	Cultivated Area in Hectares	Total Production, in quintals	Productivity, (quintal/ ha)	growth in %			Cultivated /Potential land (Share in %)
				Cultivated Area	Production	Productivity	
2007/08	42056.1	823412.3	19.6				1.6
2008/09	51673.0	465057.0	9.0	22.9	-43.5	-54.0	2.0
2009/10	56882.2	649962.3	11.4	10.1	39.8	27.0	2.2
2010/11	75048.8	906885.7	12.1	31.9	39.5	5.8	2.9
2011/12	71356.6	567876.3	8.0	-4.9	-37.4	-34.1	2.8
2012/13	114542.9	897387.7	7.8	60.5	58.0	-1.6	4.4

Source: Computed based on data from CSA, various reports,

### Productivity

The productivity (yield per ha) varies considerably from farm to farm and time to time due to a variety of reasons. The productivity has declined from 19.6 quintals per hectare in 2007/08 to 7.8 quintals per hectare in 2012/13 indicating a significant loss in the level of productivity. Evidence shows that the yield per hectare at smallholder farmer land is very low compared with the productivity level at private and state commercial farms due to the following of reasons. These include poor land preparation, lack of access to improved plant varieties and inputs, use off primitive mechanization, and knowledge gap in crop management techniques.

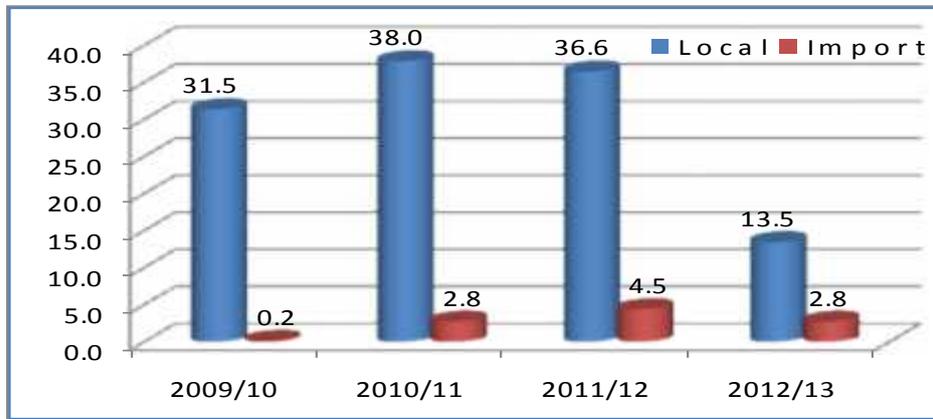
Increasing productivity of land under cotton, or returning to its 2007/08 level, alone can more than double the volume of production from the current land under cotton cultivation. Therefore, due emphasis should also be given to productivity.

**Demand and Consumption**

The demand for cotton has been increasing since recently due to increased number of investors entering the textile sub-sector. It is the perceived cotton production potential and availability of cheap labour, among others, which has been attracting FDI and local investors into the sub-sector. However, the growth in local production of cotton has not been keeping pace with increasing demand for cotton by local large scale industries. The industries have started importing raw cotton from abroad so as to keep their business operational.

Until it was banned in November 2010, in pursuant of the value added policy and the provision of priority for domestic industries, the country has been exporting cotton to the rest of the world earning some amount of foreign exchange. Although the ban was lifted following the attainment of production level which was in excess of the amount demanded by local industries, a bigger leap in export was not witnessed. This could probably be due to stringent requirements and procedures attached to exporting of raw cotton.

**Figure 7.8: Raw Cotton Consumed by Textile Industries, quantity in 000 tons**



Source: CSA, various reports.

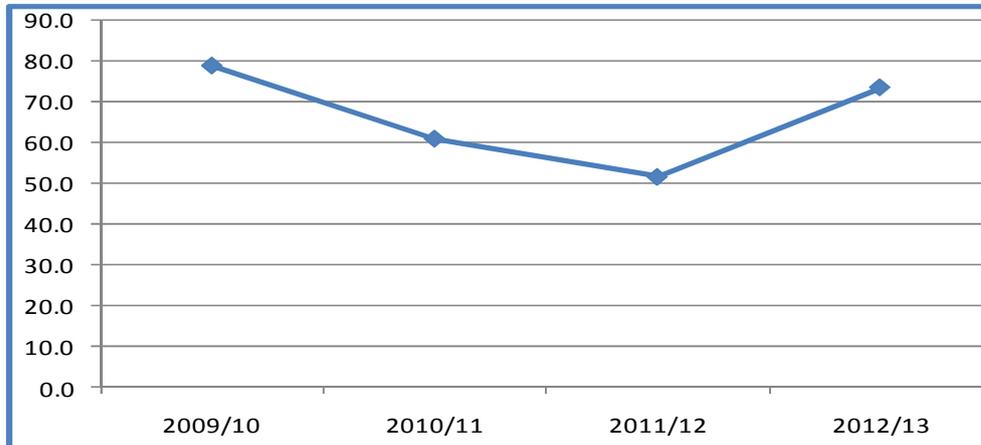
Cotton is consumed by different entities in the domestic economy. Cotton produced by smallholder farms are largely used by the hand: crafts industry, while the cotton produced by large scale private and state commercial farms are channeled to the modern textile manufacturing sector. Figure 7.8 shows increasing trends in the quantity of imported raw cotton into the country for use by textile industries. One of the reasons for continued importing even during good domestic harvest season could be to search for better quality cotton which meets the tastes of foreign buyers of some particular textile products.

The main factors for the greater demand for cotton are the increasing number of textile industries operating in the country and the plan of increasing capacity utilization due to the existence of a huge export potential following the AGOA policy of the United States and that of the EBA of the European Union which allow Ethiopian made textile products to enter their markets free from quotas and tariffs.

#### ***Capacity utilization***

The capacity utilization of textile industries declined from about 79 percent in 2009/19 to about 50 percent in 2011/12 but recovered significantly to about 72 percent in 2012/13 (Figure 7.9). The major reason for the low capacity utilization has been shortage of raw materials, both in quantity and quality.

**Figure 7.9: Recent trends in capacity utilization by textile industries, in %**



Source: CSA

#### **Problem and Constraints**

In sum, the cotton production level has been far behind its estimated potential; and the productivity level has been far behind the global average. Besides, the potential production that could have been realized by using irrigation has been wasted.

Despite the existence of huge potential, the area under cotton plantation and the production are low due to the following reasons. These include,

- practicing of traditional farming by most smallholder cotton farmers,
- lack of good quality seeds, and poor input supply system,
- poor post harvesting techniques,
- lack of integration among actors in the sub-sector,
- limitation of cotton research in all cotton growing agro-ecologies, and
- limitation of irrigation facilities.

## Recommendations

In an integrated global world, events in some countries are passed to some others immediately depending on the country's degree of integration. Raw materials availability should also be seen in global settings and requires the inclusion of the major global players.

A serious attention should be given to address the various problems discussed above which have been hampering the development of the cotton and textile industry.

Of the major factors affecting the sector is the volatility of cotton prices. Price volatility has implications for both farmers and manufacturing industries. Thus, the government has to develop a system which would help stabilize the prices of cotton so that both growers and manufacturing industries are insulated from the adverse impacts the volatility of prices.

The value added policy objective should be carefully designed and implemented. For instance, the primary objective of banning the exporting of raw cotton should not lead to reducing farm gate prices which are lower than the export parity. Instead, the purpose should be to secure sufficient quantities of raw materials for local industries, not extracting surplus from growers and passing it to industries. Therefore; policy makers have to consider their decisions from different angles, because measures planned to benefit one may hurt others and the net effect could be negative.

## Leather and Leather Products: Hides and Skin

### **Potential**

The production of hides and skins, raw materials for the tanning industry, are dependent on the rearing, management and disposal of the livestock population. Hides and skins could be obtained from fish, birds, and reptiles as well as wild and domestic animals. The most important sources are, however, cattle, sheep and goats.

The livestock population is not evenly distributed throughout the country. Cattle are found throughout the highlands while sheep and goats are reared in both highlands and lowlands. There are two major cattle production systems within Ethiopia: the highland crop-livestock system, and the lowland pastoral systems; and that there are variations within each system.

Overall, livestock population has been growing during the last decade but varying from one type to the other. The total livestock population has been growing, on average, by 5 percent per annum over the decade (2004/05-2013/14) (Table 7.2).

The total hides and skins potential can be considered as the sum total of the number of slaughtered and dead animals per year. The data shows that there is a high livestock death rate and is much higher than the slaughter rate. Since this study is interested in hides and skins, it takes into account dead animals since we can recover hides and skins of the dead bodies. The causes of death, such as skin diseases and attack by wild animals may limit the recovery rate of hides and skins.

**Table 7.2: Trends in Livestock Population, Growth in %**

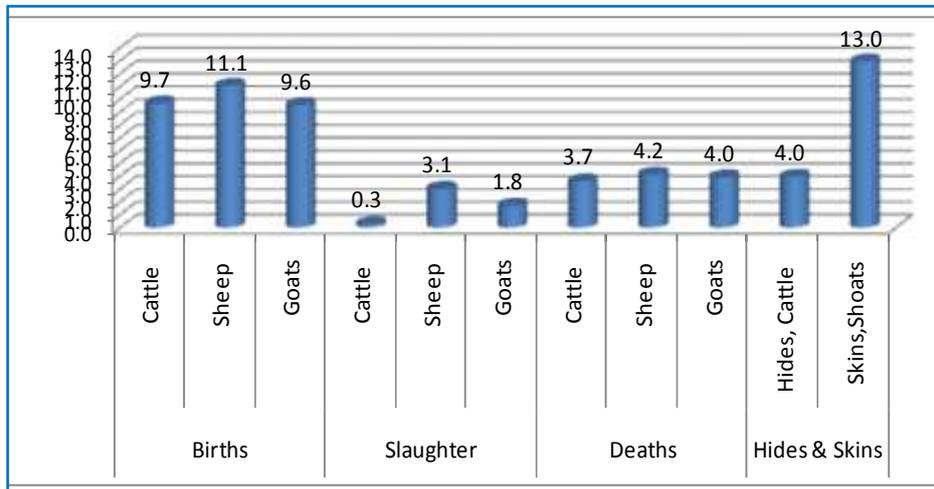
Livestock type	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
<b>Number in '000</b>											
Cattle	38,103	38,749	40,380	43,125	47,571	49,298	50,884	53,382	52,129	53,990	55,027
Sheep	16,575	18,075	20,734	23,633	26,117	25,017	25,980	25,509	24,221	25,489	27,348
Goat	13,835	14,859	16,364	18,560	21,709	21,884	21,961	22,787	22,613	24,061	28,163
Camel	471	459	438	616	1,009	760	808	1,102	979	916	1,098
<b>Total</b>	<b>68,984</b>	<b>72,141</b>	<b>77,916</b>	<b>85,934</b>	<b>96,406</b>	<b>96,959</b>	<b>99,632</b>	<b>102,780</b>	<b>99,943</b>	<b>104,456</b>	<b>111,637</b>
<b>growth rate, in %</b>											
Cattle		1.70	4.21	6.80	10.31	3.63	3.22	4.91	-2.35	3.57	1.92
Sheep		9.04	14.71	13.98	10.51	-4.21	3.85	-1.81	-5.05	5.23	7.29
Goat		7.40	10.13	13.42	16.97	0.81	0.35	3.76	-0.76	6.40	17.05
Camel		-2.67	-4.57	40.86	63.70	-24.71	6.30	36.47	-11.14	-6.51	19.97
<b>Total</b>		4.58	8.00	10.29	12.19	0.57	2.76	3.16	-2.76	4.52	6.87

Source: MOA

NB: Note that the data does not include the slaughter size in Addis Ababa which is significant and would raise the total size of hides and skins

However, the practice of removing hides and skins off the dead animals is considered as unacceptable act among the community and thus widely left to decompose thereby denying the economy the chance of recovering significant number of hides and skins from dead animals. In 2012/13, close to 12 million animals are reported to have died. Thus, it is estimated that 12 million pieces of hides and skins could have been recovered. In fact, the number of hides and skins may not be exactly equal to the number of dead animals because it impossible to recover hides and skins from dead infants, those attached by wild animals, those died of skin and communicable diseases (Figure 7.10).

**Figure 7.10: Births, Slaughters, Deaths and Potential Hides and Skins, in million for 2012/13**



Source: CSA, Agricultural Sample Survey 2012/13 2012/13[2005e.C.] Volume II Report on Livestock and Livestock Characteristics (Private Peasant Holdings)

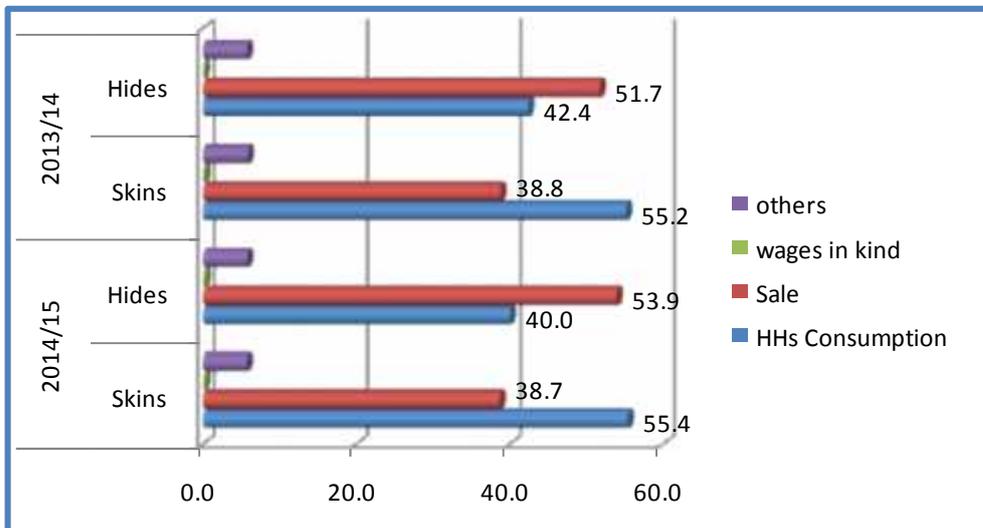
In the absence of a willing community attitude, the decision to remove hides and skins from dead animals depends on the market price of hides and skins and the cost of flaying. If the cost of flaying a skin is higher than the market price of the skin (which is the case in urban areas), it is not viable to flay skin off the dead animals.

**Production**

The major supply of hides and skins is in rural areas where the greater proportion of slaughtering is carried out at the household level or in backyards that are not equipped with any amenities for undertaking following proper slaughtering, ripping and flaying procedures. A considerable number of the raw material is derived from slaughter slabs municipal slaughterhouses, local and export abattoirs meat and meat products processing plants are other sources.

Although the total production of hides and skins is significant to bring the tanning industries to their full capacity, the livestock products utilization survey report tells a sad story. According to Figure 7.11, on average, only about 38.75 percent and 52.7 percent of the total skins and hides, respectively, go to the market to reach tanneries while the substantial share of the balance is consumed by households. This trend has continued to the present day without showing a significant structural change.

**Figure 7.11: Hides and Skin Utilization, in %**



Source: CSA, Agricultural Sample Survey 2014/2015, Volume VII Report on Crop and Livestock Product Utilization (Private Peasant Holdings, Meher Season)

**Production-potential ratio**

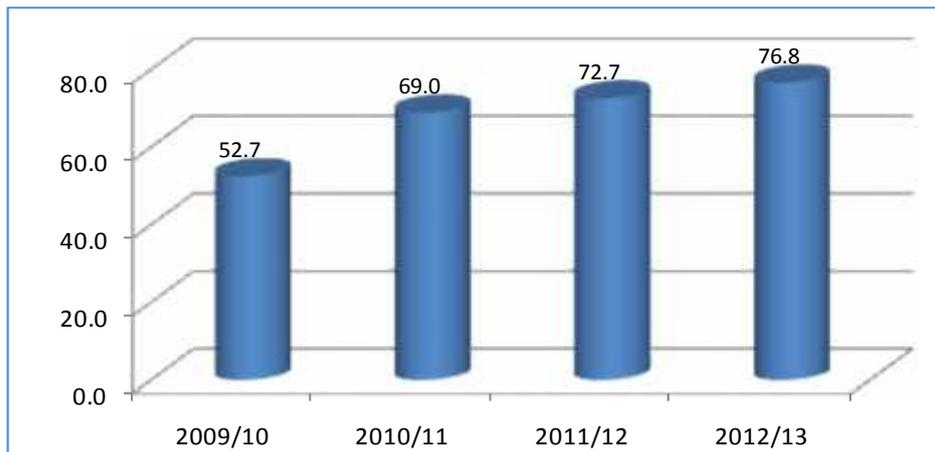
In the light of the huge potential, the actual products, i.e., hides and skins that reach the tanning industries are very low.

**Demand and Consumption**

The demand for raw materials is based primarily on the number of enterprises in the sector and their installed capacity. According to evidences the demand for raw hides and skins remained higher than its supply for a long time. This can be supported by the persistent under capacity utilization by leather tanning industries throughout the country.

Since recently, the capacity utilization by leather industries has been improving. It improved from about 52.7 percent in 2009/10 to about 76.8 percent in 2012/13 registering significant performance over the years (Figure 7.12)

**Figure 7.12: Recent trends in capacity utilization by leather industries, in %**



Source: CSA, various issues

Leather is one of the sub-sectors which fully gets its major raw materials, hides and skins, from local source. In 2012/13, for instance, the sub-sector consumed 12,329 thousand pieces of skins of which 62 thousand pieces were imported. This shows that there was import of raw skins, though, insignificant. During the

same year, the industry consumed 5,392 thousand tonnes of hides, wholly supplied from local sources.

#### ***Problems and constraints***

- In the face of emerging market opportunities, the methods of production (nearly the entire supply of marketed animals come from the smallholder households in mixed crop-livestock, agro-pastoral and pastoral production systems) and marketing practices (the absence of specialised commercial ranches and feedlots) have changed very little.
- The leather industries have been suffering from shortage of raw hides and skins despite the high potential.
- Promoting structural changes should have been undertaken for raw material production and supply system as was done for manufacturing industries. High hides and skins utilization rate at household level.
- The wide dispersion of the slaughtering points across the country, along with the lack of proper slaughtering amenities has a negative impact on the volume and quality of hides and skins. As a result, all available raw materials have not recovered; a considerable proportion has been wasted before reaching the tanneries.
- The quality of the already available raw hides and skins is very poor due to animal skin disease, poor skin removing practice, low care while transporting and storing, etc, and
- high animal death rate and the culture of not removing skins of dead animal.

#### ***Recommended measures***

In order to address the problems of raw materials and promote the local manufacturing industries utilizing these raw materials, the following recommendations are forwarded:

- Realize the potential by taking the necessary measures in terms of animal rearing, recovering all hides and skins and reducing the wastages;
  - An isolated measure does not lead to success, therefore, while promoting particular industries, efforts should be made to promote all activities along the whole value chain.
  - Assurance of raw materials supply (local or international sources) is critical for the development of priority manufacturing industries. Assurance requires involvement of the government since access to raw materials, especially foreign sources, requires political decisions.
  - It is domestic agriculture which is the main supplier of raw materials to agro-industries; therefore, increasing the efficiency of domestic agriculture should be an integral part of the promotion of agro- processing industries.
  - An in-depth analysis is constrained by lack of data in the area. Therefore, the relevant body has to organise reliable data on the key raw materials and provide to researchers and others who need it.
- 
- The smallholder producers of livestock cannot support the growing leather processing industry as required; therefore, commercial rearing and other systems be put in place by designing attractive incentive schemes so that investors could join the sector.
  - The promotion of agro-processing industries has to be seen within a broader framework through which the agriculture sub-sector is linked to industry in supplying the necessary input (both required quantity and quality) for the industry in. The present small holder farmers are not in a position to supply the required volume and quality input unless they are organized under some scheme such as out grower scheme.
  - Cognizant of the importance of critical raw materials for their industrialization objectives, countries have been taking various measures which are deemed to ensure sustainable supply to their industries. Therefore, drawing on countries' experiences, Ethiopia has to design and

implement raw material supply ensuring strategy for its priority manufacturing sectors such as agro processing industries which are considered as a spring board for the industrialization of the country.

- The preparation of a raw materials strategy should be in consultation with all actors along the supply chain to safeguard sustainable supply (both from local and foreign sources) of its critical raw materials, especially for priority agro-processing manufacturing industries.
- The measures may include subsidizing the production of critical raw materials especially wheat, cotton and hides and skins.

#### **7.4. Conclusion**

Availability and access to sustainable supply of raw materials plays critical role for the industrialization of a country. In order to achieve economies of scale and become competitive in the global market place, manufacturing industries have to produce in large quantities. This, in turn, requires, among others, secured supply of quality industrial raw materials.

Countries promote industries based on their comparative and competitive advantage. Ethiopia's promotion of agro-processing manufacturing industries, among others, draws largely on availability of agricultural raw materials from local sources. However, agro processing industries such as food processing, textile and leather have not fared well over the last several years due to mainly shortage of sufficient quantity and quality of agricultural raw materials. As the result, the domestic manufacturing industries have not been able to operate at their full capacity.

The report, however, shows the existence of immense agricultural raw materials potential in the form suitable land, water for irrigation, diverse agro-ecology, etc which would help to produce sufficient quantity of the required

raw materials. However, the country has exploited only about 20 percent of its wheat grains, less than five percent of cotton and lower hides and skins production potentials. As the result, the agro-processing industries have not been able to attract new industries as the potential indicate into the sector. Therefore, in order to make the agro-processing manufacturing industries expand and operate competitively in export market, the country has to work hard in ensuring the supply of the critical raw materials by tapping into its agriculture resource potential. To this end, the country has to prepare industrial raw material strategy, especially for priority manufacturing industries, which is aimed at securing the supply of industrial raw materials.

## **Chapter VIII**

### **Value Additions to Foster Industrialization**

#### **8.1. Introduction**

The global trading system has changed significantly since recently. The expanding global value chains (GVCs) have fragmented production processes across different countries and continents and boosted network trade. Linking with the GVC per se is increasingly considered as the new development challenge by policy makers in many developing countries. Industrial policies are being reshaped in order to adjust to this new trade system; and foreign direct investments are being encouraged with the hope of raising the possibility of linking with the value chains.

Developing countries' exports that depend on GVC have become significant as a result of upstream links (foreign value-added or imported inputs in exports) or downstream links (exports that are incorporated in other products and re-exported). In particular, the East and South-East Asian countries have benefited greatly from participation in global value chains. Countries and firms in this region have used global value chains to increase local productive capacity and drive the export-led growth of the region over the past couple of decades (Niall Condon, 2014).

Africa's involvement in the GVC, however, has remained typically as producers and exporters of primary commodities (lower value downstream activities). Their participation in the upper end of the value chains have been limited mainly due to the under development of their manufacturing industry base.

Linking with GVCs could either be through forward linkages (where the country provides inputs into exports of other countries) or through backward linkages (where the country imports intermediate products to be used in its exports). Participation in GVCs, for a particular country, could be measured as the sum of 'foreign value added in its gross exports' (backward linkage or imports of foreign value-added) and its 'domestic value-added which goes into other countries' gross exports' (forward linkage of export of domestic value-added).

If gains that go to a country from its participation in GVCs are measured in terms of 'net value-added' by participation in GVCs, then the higher the forward linkages compared to backward linkages, the higher will be the gains. This would imply that by its participation in GVCs, a country is creating and exporting more domestic value-added than the foreign value added which it is importing.

The sectoral analyses of value-added, which are created under GVCs, showed that high-tech industries have much higher fragmentation of production processes compared to low-tech industries. Domestic value-added in high-tech industries in developing countries may not be very high because a significant share of value added may be imported. In industries where developing countries, like China, have the highest share in global exports, e.g., electrical and optical equipment, a large part of value-added is sourced from developed countries. In low tech industries, like textiles and leather, although the comparative advantage of developing countries is higher, the backward linkages with developed countries in terms of foreign value-added used in exports is higher as compared to developing countries. Thus, though the gains from exports are shared among different players along the GVC the balance of power favours advanced countries.

When raw materials are exported as unprocessed primary commodities, without economic value being added, it contributes very little to the exporting economy; while the substantial share of the benefit from final value of the product is being harvested by value adding importing countries.

Ethiopia is endowed with abundant natural resources, especially agricultural resources. Over 90 percent of its export earnings have been generated from primary commodities. On the other hand, the country has been importing a significant volume of processed goods, especially goods which could be processed locally using agricultural raw materials. Importing of consumer goods have claimed significant scarce foreign exchange, which could have been spent on importing machinery and technology that would, in turn, help develop building of industrial capability of the country. Developed industrial capability could have been engaged in value addition activities.

This chapter discusses the need for promoting value addition to exports of a country, the extent of value addition, and policies for promoting value addition and strengthening agriculture-industry linkages.

## **8.2. The Need to Engage in Value Addition**

The success story of high performing Asian economies that experienced substantial increases in exports, and specially exports of manufactures goods, and high growth rates of their GDP over many decades has prompted many analysts to view export development and diversification as the new engine of growth. In light of the experience of successful exporting countries, there is a growing consensus in the economic literature that outward-oriented policies combined with selective market friendly interventions can help countries grow more, and reap the benefits of trade liberalization. There is also a growing consensus that patterns of economic development are associated with

structural change in exports and increased export diversification. In virtually all regions of the world, the patterns of trade have changed from primary exports to manufactured exports of labour intensive types and subsequently to more resource intensive manufactures (Salomon S. 2010).

Export diversification is variously defined as the change in the composition of a country's existing export product mix or export destination (Ali, Alwang and Siegel, 1991), or as the spread of production over many sectors (Berthelemy and Chauvin, 2000). For many developing countries, and as part of an export led growth strategy, export diversification is conceived as the progression from traditional to non-traditional exports. By providing a broader base of exports, diversification can lower instability in export earnings, expand export revenues, upgrade value-added, and enhance growth through many channels. These include: improved technological capabilities via broad scientific and technical training as well as learning by doing, facilitation of forward and backward linkages within outputs of some activities which then become inputs of some other activities; increased sophistication of markets, economies of scale and externalities, and substitution of commodities with positive price trends for those with declining price trends (Salomon S. 2010).

In the trade literature, export diversification can take several dimensions and can be analyzed at different levels. There are two well known forms of export diversification, horizontal and vertical. Horizontal diversification takes place within the same sector (primary, secondary or tertiary), and entails adjustment in the country's export mix by adding new products on existing export baskets within the same sector, with the hope to mitigate adverse economic (to counter international price instability or decline) and political risks. Vertical diversification into processing of domestic manufactured goods entails a shift from the primary to the secondary or tertiary sector. It involves contriving further uses for existing products by means of increased value added activities

such as processing, marketing or other services. Vertical diversification can expand market opportunities for raw materials and help enhance growth and stability since processed goods generally have greater price stability than raw commodities (Salomon S. 2010).

It is now generally held that comparative advantage is natural and fairly static for natural resources and agricultural products, but can be induced and dynamic for most industrial, technological, and services sectors. It is also generally admitted that countries' patterns of specialization vary considerably. Because comparative advantage changes over time, the gains from trade in the mainstream trade literature are maximized when: (i) a country specializes in products for which it has a comparative advantage rather than trying to produce everything, and then (ii) exports the surplus of its specialization in exchange for imports, with greater efficiency of resource use. It is also understood that when a country specializes to seek "gains from trade", it must restructure and adjust its economy, and this restructuring can involve short term financial, personal and social costs. These short term costs should be subtracted from overall long term gains from trade, but could be mitigated with appropriate accompanying complementary and compensatory policies (Salomon S. 2010).

The relatively low vulnerability of value added compared to raw materials exports is another key factor for promoting value addition.

It is widely acknowledged that an economy's vulnerability to exogenous economic shocks is largely determined by its degree of exposure to the global economy — that is, by its degree of economic openness (Rodrik 2010, World Bank 2010, Briguglio 2009 as cited in UNDP). Since economic openness is measured as the ratio of international trade to GDP, the transmission channels

by which economic openness impacts vulnerability can be import-or export-related.

From an economic perspective, a country's exposure to external economic shocks generally depends on its reliance on exports because export earnings finance imports besides contributing directly to investment and growth. Production structures primarily oriented towards export-led growth expose countries to external shocks more than production structures reliant on domestic demand (Foxley 2009 as cited in UNDP).

Economic openness explains the fact that an economy may be vulnerable to external economic shocks (as reflected by losses in export revenues and growth slowdowns), but the scale of impact depends largely on the degree of concentration of a country's export portfolio. By all accounts, higher degrees of export concentration are strongly correlated with greater volatility in export earnings and economic growth rates.

Moving up the value chain concerns the process of shifting productive activity of a nation, an industry or a firm towards the production of goods and services that generate higher value added. Moving up the value chain is an inherently complex undertaking. However, moving up the value chain should not be confused with merely producing the same mix of goods and services in more efficient ways and with shifting the composition of output from low-tech to high-tech goods and services. How much value added a country generates is much more important than whether the final product is classified as low-tech, medium-tech, or high-tech. If value added is high, even resource-based exports can translate into higher profits, better-paid jobs, and higher standards of living. But if the value added is low, even a high percentage of high tech exports need not provide a sufficiently large boost to per capita income. For instance, Argentina, Mexico, Chile and Brazil have all much higher per capita income

levels than several Asian countries with much higher levels of high-tech exports (measured as a percentage of total manufactured exports).

Malaysia has a higher share of high-tech exports than the United States, Singapore, South Korea, and Finland. Yet Malaysia's per capita income level is significantly lower. The reason is that Malaysia historically specialized in low-wage, low-value added assembly operations whereas Singapore, the United States, South Korea, and Finland specialized in higher-value added, knowledge-intensive design, engineering, branding, and marketing functions. The critical task for Malaysia is therefore not necessarily to switch the sectoral composition of what it does but rather to extract greater value from whatever it does. In other words, what matters most for moving up the value chain is not whether the final product is high tech, low tech, or natural resources, but the amount of value added generated in an economy.

Why does moving up the value chain matter? In almost every developed country, a dramatic shift occurred in the composition of production and exports. The goods and services that dominated their export basket at the beginning of their growth spurts were simpler and lower-value added products. By the end of their growth spurts however, they were exporting more complex, higher value added goods and services. In other words, these countries did not generate sustained growth by producing ever increasing quantities of the same goods and services but by moving up the value chain.

Moving up the value chain has both direct and indirect benefits. It increases returns to raw material producing economy and it also results in other multiplier benefits such as generating additional employment on the upper value chain, strengthens forward and backward linkages with other service and complementary raw material suppliers, helps acquire experience and exposure, and enhance technology transfer, especially to the rural economy. Processing

and value-adding activities also provide economic advantages through elongating shelf life of products, and reducing the risk of perishability, a problem of many raw farm products.

The rationale for embarking on value addition to exports of a country has long been a point of discussion among economists. According to trade theories, countries have to export commodities in which they have a comparative advantage but import commodities in which they have a disadvantage.

During the 1950s, there was an argument that developing countries' barter terms of trade would increase due to the relative rapidity of technological progress in the industry sector which would push down on the relative prices of manufactured exports of advanced countries. However, this view was challenged by Prebisch and Singer. According to Prebisch and Singer, the growth of LDCs is largely constrained by the long-term structural tendency of the decline of commodity prices relative to manufacturing goods. They argued that the terms of trade declines for developing countries' exports owing to:

First, the income-elasticity of demand for the goods produced by low-income economies was less than for those products embodying higher technology. Second, the demand for lower-technology commodities and basic goods would be much less price-sensitive. Hence, an increase in the demand for low income countries' exports would only come from a large and disproportionate fall in prices.

Third, many of the commodities exported by low income countries are subjected to synthetic substitution in the developed world, and hence such substitutes make the demand for products of low income countries to decline.

Finally, the products of low income economies are generally goods with low barriers to entry. Thus these products would be subject to a greater squeeze on prices and margins than products produced under high barriers to entry.

After six decades of the introduction of Prebisch and Singer's model, some of its underlying principles are still valid for explaining the biased nature of technological progress and uneven development performance across developing countries (Katz, 2004).

Underdevelopment and long term stagnation of LDCs has partly been attributed by many development economists to their continued dependence on unprocessed primary commodities exports.

The role of value addition in the development of a country can be seen from the experiences of the now developed countries. According to Amsden, (2001), economic development is achieved by the process of moving from a set of assets based on primary products to those based on skills, technology and knowledge. This has been the development strategy pursued by today's developed countries, and most recently, newly industrialized economies in East Asia.

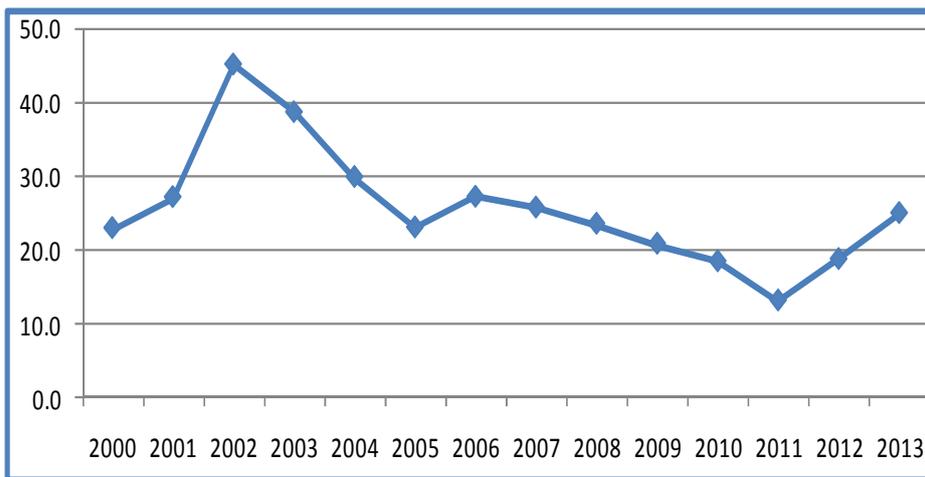
Raw materials are important for they serve as the bedrock for economic development but it is the move to higher-value added activities, through technology application, which sustains it.

Lastly, in order to make a strong case for value addition, it is sufficient to look at the factual information on the value gaps between raw materials and processed products.

**Price disparity between raw and processed products: The case of coffee**

There has been a huge gap between the prices paid for raw materials and finished products, the latter taking a disproportionately high share from the final product price. For instance, the retail price paid by consumers for one lb of soluble coffee (coffee powder that can be prepared instantly by adding hot water) in UK is, on the average, 25.6 times higher than the price that a grower in Ethiopia receives for exporting one lb raw coffee bean. The figure fluctuates from year to year ranging from a high of 45 times in 2002 to 13.1 times in 2011 (Figure 8.1). The same evidence can be presented on the unfair processed/raw material price for other export items of developing countries.

**Figure 8.1: Retail price for soluble coffee in UK to price paid to growers in Ethiopia, No of times**



Source: Computed based on data from International Coffee Organization Database

Partly due to the underdevelopment of its manufacturing industry Ethiopia has been exporting primary commodities constituting over 90 percent of the total merchandise export. The progress on value addition on export items has remained low except on leather and recently textile sub-sector. Given the advantages discussed above, the country has to work hard towards shifting to the export of processed goods in the medium term.

The constraints hampering the country from moving up the value chain can be broadly classified into both supply and demand sides. For instance, although Ethiopia is among the top producers and exporters of the best Arabica coffee in the world, but it has not been taking advantage of the commodity's full potential in the export market due to exporting it in raw forms.

The exporting of processed coffee to any meaningful degree has not been apparent partly owing to demand-side constraints. This is because the business of roasting, packaging, retailing and other work in the coffee value chain has long been monopolized by big companies and they have been working against any producing country to moving up the chain. Although, a company exporting roasted coffee has emerged recently, but its small scale operation is insignificant in the face of the huge quantity of raw coffee export per annum from the country.

However, to make the move towards value addition successful, the country has to design and execute a value addition strategy, enhancing the processing capability of the manufacturing industries of the country and modernizing farming system as well as improving all issues along the whole value chain.

### **8.3. The State of Value Addition**

Under this section, attempt is made to show the state of the linkage between agriculture and industry which is an indicator for the direction of value addition and assess the extent to which Ethiopian exports contain processed items.

#### **8.3.1. The Linkage between Agriculture and Industry**

The linkages between agriculture and industry have been well established in a vast body of literature. One direction of linkage is that the agriculture sector provides the industry with raw materials, surplus labour and market. Yao (2000) refers to the first as product contribution, the second as the factor contribution, and the third as the market contribution. On the other hand, industry provides the necessary inputs to the agricultural sector such as farm tools, fertilizers, pesticides, etc. These indicate the forward and backward linkages between the two sectors.

Various studies show inter-sectoral linkages with varying degrees. A study on Côte d'Ivoire, Ghana, and Zimbabwe by Blunch and Verner (2006), for instance, point to the existence of a high degree of interdependence in the long-run. The most robust findings across the three countries are the positive long run relationship and short run dynamics between the agricultural and the industrial sectors. The results with an alternative specification by disaggregating industry into four sub-sectors (manufacturing, construction, gas and water, and mining) came up with same findings.

The agriculture-industry linkage in Ethiopia is loose due to a variety of reasons. The marketable surplus of agriculture products are generally low, estimated at about 20.5 percent of the total production. Besides its low share, half of this marketable surplus also fails to meet the quality requirements of the processing

manufacturing industries. This, in turn, has been leading local manufacturing industries to import agricultural raw materials from abroad. Agricultural commodities which have higher marketable surplus such as coffee and sesame are totally exported as raw materials and by pass the local industries.

Therefore, both as a supplier of raw materials for the local manufacturing industry and as a demander of inputs from the manufacturing industry, the two sectors have maintained a very loose link. It is therefore,

possible to conclude that both the Ethiopian agriculture and manufacturing industries have been integrated more to the rest of the world than to each other thereby suggesting the need for policy measures aimed at strengthening their linkage and foster value addition.

### **8.3.2. The State of Value Addition**

Sectoral linkages and value addition are related issues. There is a strong linkage between agriculture and industry, especially with agriculture supplying raw materials which means that industry is adding value on the raw materials it gets from agriculture. Thus, value addition grows.

The study of value chains comprises of two key concepts: value and chain. The term value is synonymous with “value added” in the Value Chain Analysis (VCA) as it characterizes the incremental value of a resultant product produced from processing of a product. The term chain refers to a supply chain indicating the process and the actors involved in the life cycle (from conception to disposal) of a product (Hawkes and Ruel, 2011).

The state of value addition can be assessed at economy wide (what percent of the economy is processed) and export sector (what percent of export is processed).

Ethiopia has abundant natural resources, especially in agriculture that can provide valuable inputs for processing by manufacturing industries for both domestic and export markets. Among its abundant resources are land and water, which can be used to produce grains as industrial raw materials; livestock which can be processed into leather and meat products; cotton, which can be processed into finished textile product; etc.

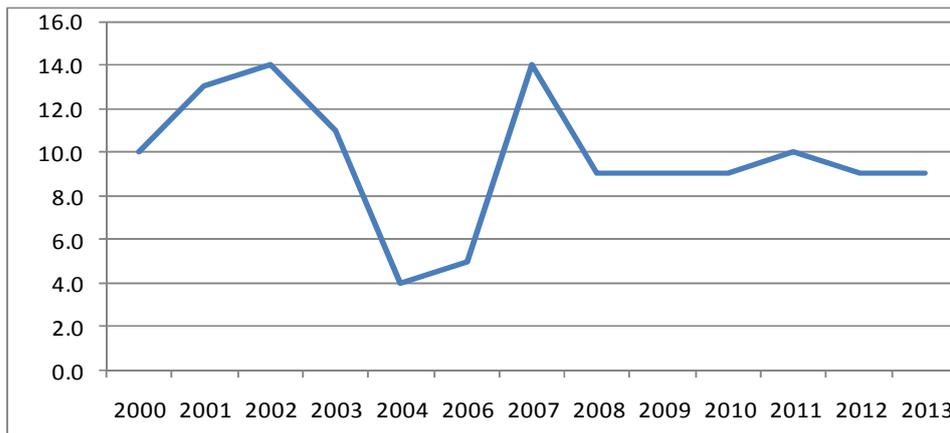
However, these resources have not been passing adequately through local manufacturing industries for value addition for domestic consumption and export markets. The value addition to the raw material has been largely very low. Many of the consumer goods in the total consumption basket, especially in rural areas, are produces that have not passed through modern processing manufacturing industries. For instance, of the total milk consumption in the country, only a meagre share has passed through modern processing industries- the bulk being consumed raw. This is an indicator of the economy's predominantly subsistence nature. In fact, most of the rural households of Ethiopia still derive a substantial part of their income and consumption from own production ('subsistence consumption' or 'auto-consummation').

Over 90 percent of the country's exports earnings have been from unprocessed primary commodities, while a substantial share of imports have been manufactured goods. Of the majority of imported non-consumer goods, the majority are those that Ethiopia can produce locally by channelling its agricultural resources towards local industries. This, however, has not been realized to date to a required level due to mainly insufficient and poor quality

agriculture raw materials supply and low local processing capacity of domestic manufacturing industries.

The extent of value addition in the export of the country can be seen from Figure 8.2. According to the data, the share of value added export in the total merchandise export earnings has remained low. However, the share has been fluctuating but has remained slightly below 10 percent, especially since recent years indicating the relative declining share of the value added in export. The share was about 14 percent in 2007 but declined since then mainly due to the relative faster increase in the raw materials export and low growth of processing manufacturing industries.

**Figure 8.2: Manufactured Export (% of Merchandise Exports)**



Source: World Bank, Database:

<http://data.worldbank.org/indicator/TX.VAL.MANF.ZS.UN?>

## 8.4. Fostering Value Addition

The realization of economic transformation hinges on development which may be the result of industrial development. During the initial industrialization phase, manufacturing industries in developing countries start focusing on the types of industries which add value on the raw material resources that they have a relative comparative advantage.

Under this section, an attempt is made to discuss ways which would help foster value addition and policies that promote value addition.

### 8.4.1. Ways of Fostering Value Addition

#### 8.4.1.1. Joining the GVC (Global Value Chain)<sup>15</sup>

The concept of adding value or “economic upgrading” is a central part of the GVC analysis. Most studies on GVCs focus on the economic dimensions of upgrading, which is referred to as economic upgrading. Economic upgrading can be achieved by:

- improving the efficiency of the production processes (process upgrading);
- adding new product lines that are of higher value-added because of improvements in designs or technical specifications (product upgrading);
- increasing value addition by moving up the value chain and taking on new functions which are of higher skills and knowledge intensity (functional upgrading); or
- switching to a different sector whose final products are more technologically sophisticated and of higher value-added (inter-sectoral

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<sup>15</sup> This section draws heavily on Takahiro Fukunishi, Kenta Goto and Tatsufumi Yamagata (2013). Aid for Trade and Value Chains in Textiles and Apparel, OECD/WTO/IDE-JETRO 2013

upgrading) (Kaplinsky and Morris, 2005 as cited in Takahiro Fukunishi et al, 2013).

In the textiles and apparel industry, firms from developing countries usually find their ways into GVCs through labour intensive functions of relatively low knowledge intensity; cutting, making (sewing), and trimming (CMT). Under these arrangements, international buyers supply manufacturing firms with most of the input materials including yarns, fabrics and accessories, free of charge. Firms in developing countries use these inputs to produce apparels based on specifications from buyers, and export the products under buyer arrangements in exchange for processing fees. In the CMT production modality, firms in developing countries assume no responsibility for the more knowledge-intensive functions, such as product design, sourcing decisions of input materials, distribution arrangements, and marketing (Takahiro Fukunishi et al, 2013).

Process upgrading in the apparel value chain can be achieved by applying new technology or rearranging existing production systems. Innovation in production technology has occurred mostly in the pre-assembly stages such as pattern making and fabrics cutting. Sewing operations remain labour-intensive as substitutability between labour and capital is limited (Jones, 2006). Transfer of advanced technologies through linkages with production and distribution networks coordinated by international buyers have become important in process and product upgrading (Goto, Natsuda and Thoburn, 2011; Schmitz and Knorringa, 2000 as cited in Takahiro Fukunishi et al, 2013).

Product upgrading involves a shift into higher value-added product lines, which are normally more difficult to produce because of differences in technical specification and input materials. For instance, a supplier may upgrade a product by shifting from the production of casual woven shirts to expensive suits. The

suppliers' ability to produce products of higher value-added is highly correlated to the extent of upgrading in production processes.

In essence, functional upgrading has to do with shifting towards more knowledge and skill-intensive functions in the GVC, which enables reaping higher value-added and also embeds more risks in its transactions (Goto, 2012; Nadvi and Thoburn, 2004a as cited in Takahiro Fukunishi et al, 2013).

When the sourcing and procurement functions are added to the assembly function, this production modality is often referred to as original equipment manufacturing (OEM): When product design functions are integrated by suppliers, this is referred to as original design manufacturing (ODM), and when suppliers further integrate branding and marketing functions, it is called original brand-name manufacturing (OBM) (Takahiro Fukunishi et al, 2013).

Moving up the chain into higher value-added functions, or functional upgrading, entails organizational changes in distribution and production, which is probably the most difficult to achieve. The CMT modality consists of functions that are mostly dependent on unskilled or semi-skilled labour and, therefore, is also one with the lowest value-added contents. Suppliers can functionally upgrade and shift to OEM, ODM and OBM, by integrating higher knowledge-intensive functions such as sourcing, designing, branding and marketing. The possibility of functional upgrading is dependent on the suppliers' capacity to handle these increasingly complex and risky functions, and also to some extent on their buyer's willingness to delegate them to these suppliers (Takahiro Fukunishi et al, 2013).

Realizing functional upgrading, i.e, moving into branding, designing and marketing functions in the textiles and apparel industry has proved very difficult, with very limited cases of success within an export-oriented value chain.

Alternatively, the domestic market could play larger roles when it comes to functional upgrading for textiles and apparel firms in developing countries (Goto, 2012 as cited in Takahiro Fukunishi et al, 2013).

In the current global environment the following ways can help achieve integration into the global trading and keep gains from the system:

**Entering the GVC at the basic level** Bangladesh for example entered the chain at the most basic level where sewing plants were provided with imported inputs for local assembly. Today, the country engages in the full range of garment making that include yarn manufacturing, accessories and textiles. Similarly, Indonesia, Vietnam and Cambodia also industrialized through GVC participation in the garment sector (Takahiro Fukunishi et al, 2013). These examples illustrate how promoting GVC participation in commodities for which Ethiopia has positive initial endowments could revolutionize the country's industrialization drive.

**Technology upgrade** This implies ability to capture a higher share of value added in the GVC. It is widely acknowledged that learning and innovation are important determinants of competitiveness and growth of either firms or countries to improve efficiency. Although the state of technology is still relatively rudimentary, a country should not refrain from entering GVC because it has been shown empirically that establishing linkages with the GVC is one sure and steady way to access and upgrade technological know-how, innovation and learning. This process exposes local participants to improved technology through either overseas training or technology imports by establishing turnkey plants in the local economy or both. Thus, exposing the country's technology to the gamut of channels through which technological diffusion and upgrading do take place such as labour mobility, technical assistance, franchise and turnkey

plants which would radically transform the structure of the economy and its production processes (Takahiro Fukunishi et al, 2013).

Integration with GVC allows participants within the value chain to interface with superior technology that would further refine domestic skills. Workers are also likely to learn new “soft skills” that would make them more efficient in the production processes or in new and emerging production activities (Takahiro Fukunishi et al, 2013).

#### **8.4.1.2. Strengthening Sectoral Linkages**

Relations between agriculture and industry exist in a framework either of an industrialization strategy within an internal dynamic directed toward economic self-development, or a strategy with an external dynamic, tending to integrate the economy with the international global system.

Sustained economic growth in a country is usually accompanied by changes in the structure of production and employment. The direction of the structural change is a shift of employment from agriculture to industry and services, accompanied by a declining share of agricultural output in the total national output but a rise in the shares of industry and services.

Importance of strong linkage between agriculture and industry for the overall industrialization of a country and the modernization of the agriculture sector are well established in the literature. Having reviewed the state of agriculture-industry linkages, it is found that the link in Ethiopia is very loose and in order to achieve the industrialization objective, it has to be strengthened.

Therefore, value addition requires a strong linkage between agriculture and industry since it is the latter sector that helps to add value on the raw material provided by the former.

#### **8.4.1.3. Transforming Agriculture and restructuring Industry**

##### *i) Agricultural Transformation*

Agriculture is the mainstay of the Ethiopian economy in terms of generating income, employment and foreign exchange for the country. Agriculture is dominated by subsistent smallholder farmers which consume a substantial share of their produce leaving only a small share as marketable surplus.

Subsistence is a widely used concept with varying meanings and definitions. Sharif (1986) comprehensively surveys the concept, its importance in the context of different theories, and its measurement. Subsistence as a mode of production can be distinguished from subsistence as a mode of consumption. The first is usually defined as mostly agricultural production for home-consumption, while the latter denotes a standard of living that allows for the satisfaction of the minimum physical and mental basic needs of life.

Despite some progress, the country's industrialization remains a challenge mainly because agriculture has not been sufficiently modernized to serve industry by supplying raw materials to industry in required quantities and quality.

Thus, for agriculture to meaningfully contribute towards industrialization it has to be transformed to make it generate sufficient quantities and quality of raw materials that the industry, especially the agro processing industries requires. Otherwise, in its current state the sector cannot support the growth of industries and would remain subsistent for another century.

In order to reach wholesale volumes, most small-scale producers need to aggregate their products with that of other growers. This poses challenges for product quality, consistency and traceability, all of which have significant implications for food safety and marketing.

There are many ways of transforming the subsistence smallholder agriculture. The two major ways are commercialization of smallholders and shifting to the production of industrial raw materials.

#### **a) Commercialization of Agriculture**

- **Definition**

Commercialization of agricultural is a complex issue and is defined in different ways. Agricultural commercialization is different from agricultural marketing. According to Pingali, (1997), agricultural commercialization is attained when household product choice and input use decisions are made based on the principles of profit maximization.

A farm household is considered commercialized if it produces a significant amount of cash crops, allocates a proportion of its products to market or sells a considerable proportion of its agricultural outputs (Immink and Alarcon, 1993; Strasberg et al., 1999).

Commercialization may be defined as the proportion of agricultural production that is marketed. As such, the degree of commercialization can range from zero (total subsistence oriented production) to unity (total market orientation). Thus, commercialization of agriculture involves a transition from subsistence oriented to increasingly market oriented patterns of production and input use. Thus, commercialization not only helps agriculture to modernize but also support the development of the other

sectors, especially manufacturing industry. Commercialization of smallholder agriculture is one means of boosting exports or stimulating local economies.

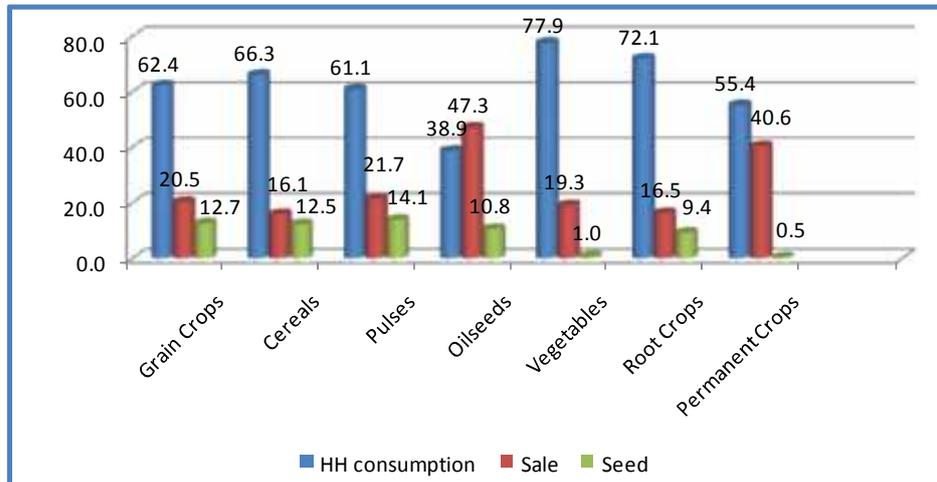
The success of commercialization efforts, according to (Bernard et al., 2007, depends on the presence of efficient markets. Otherwise, the shift from subsistence to commercial crop production may have an adverse consequence by exposing households to volatile food market prices and food insecurity unless rural markets are well-integrated and risks are low to influence household decision behaviour.

- **The State of Commercialization in Ethiopia**

By using the share of sales of the total production of small holder farmers (i.e., marketable surplus), attempt is made here to show the state of commercialization of Ethiopian smallholder agriculture.

The state of commercialization can be examined by looking at the degree of the HH's integration into the output and factor markets. Figure 8.3 shows the proportion of the marketed output of agriculture commodities produced by smallholders. Of the total grain crops (cereals, pulses and oilseeds) produced in 2013/14, about 20.5 per cent was marketed, while 62.4 per cent was used for own consumption by the farming HHs, and about 12.7 per cent was set aside for use as seed input and the balance is used for animal feed, payment of non-HH labour in kind, and other unspecified purposes. The marketable surplus for cereals is 16.1 percent which is lower than the average for total grain. Of the already low marketable surplus of the sector, a substantial share goes to urban households for consuming leaving only a small amount to be used by the domestic manufacturing industry.

**Figure 8.3: The Degree of Commercialization, 2013/2014**



Source: CSA, Agricultural Sample Survey 2013/2014, Volume VII, Report On Crop and Livestock Product Utilization (Private Peasant Holdings, Meher Season)

**b) Shifting to the Production of Industrial Raw Materials**

Another option for transforming agriculture is shifting smallholder farmers from producing staple food to industrial raw materials. This move leads to increased product supply of raw materials for agro-processing priority manufacturing industries. This will, in turn, improve capacity utilization, increase production scale and hence scale advantage thereof, and at the end improve the competitiveness of the sector. However, given the age old farming tradition of smallholders and their risk averting nature, a plan of shifting may not be achieved in the short to medium run.

Cash crop production has been advocated as part of a broader strategy of comparative advantage. The underlying argument is that markets allow households to increase their incomes by producing that crop which provides the highest returns to land and labour, and then use the cash to buy household

consumption items, rather than be constrained to produce all the various goods that the household needs to consume.

In addition to the need for restructuring the traditional subsistent agriculture, with the objective of commercializing it and making it produce quality raw materials for industries, the manufacturing industries have to also undergo restructuring. Since processing of agricultural raw materials, especially food staff require great care and stringent sanitary and safety condition, industries have to restructure to come to this standard.

The restructuring should aim at improving capability of the manufacturing industries towards the resource potential of the country, meeting the global standards and finding its entry point into the GVC.

To this end, some of the key interventions include:

- directing the manufacturing industry towards value adding activities on resources that the country has been exporting in raw forms;
- upgrading the existing value adding agro-processing manufacturing industries so that they can meet the global standards; and
- establishing new agro-processing manufacturing industries and encouraging the establishment of such industries by the private sector

## **8.4.2. Policies to Foster Value Addition**

### **8.4.2.1. Agriculture –Industry Linkages**

The loose agriculture–industry linkages, lead to low value addition in the whole production system at large and exporting in particular. Therefore, in order to strengthen the linkage between the two sectors, the following key interventions are recommended:

- prepare value adding strategies, especially for the export sector ;

- discourage, by a market friendly mechanism, the exporting of unprocessed raw materials;
- improve the productivity and quality of agricultural products;
- promote industries which are based on the country's abundant resources;
- promote the substitution of imported manufactured inputs that the agriculture needs for domestic production; and
- prepare special incentive packages for strengthening the linkage between the two sectors;

#### **8.4.2.2. Promotion of Value Added Export**

In the second half of the 20th century, a strong political commitment towards export promotion and the application of appropriate policies together with efficient institutional mechanisms helped the "four tigers", South Korea, Taiwan, Hong Kong and Singapore, countries to attain a higher growth rate of exports and hence of the overall economy.

Policies to promote value addition on raw materials for export will clearly depend in the first instance on a comprehensive analysis of the country's specific position in the international division of labour, its position in the global supply chain and the prospects of world demand. Typically, the policy reforms necessary to foster value addition require a multi-faceted approach including trade, investment and industrial policies, as well as institutional reforms.

Among measures to promote export value addition targeted industrial and investment policy to develop potentially new areas of comparative advantage and establish the conditions needed for local firms to access export markets is paramount. Increasing market access usually involves a reduction of trade barriers for exporting firms; the setting up of marketing and distribution firms that provide local producers with the necessary know-how to gain access to

world markets; an institutional and regulatory framework that supports export diversification; improved communications technology; and infrastructure investments which increase productivity and enable local firms to compete in global markets. Specific measures include:

- **Financing:** An export value addition strategy should make available financing facilities for export-oriented industries on a priority basis. A more developed financial sector will allow more financing opportunities for new and innovative entrepreneurs who might have the potential to develop new export products.
- **Infrastructure development:** Efficient infrastructure is a precondition for good export performance. Transport infrastructure and port facilities that ensure that goods arrive on time, in good condition and with the least delivery time are crucial elements in any successful export diversification policy. The inadequate functioning of infrastructure may harm enterprises in many ways including hampering production activities, delaying the movement of goods and passengers, and leading to a delay in the delivery of goods. It also adds to business uncertainty and risk and imposes additional costs.
- **Communication and technological infrastructure:** The development of an adequate and accessible communication infrastructure enhances firm productivity and allows more efficient and speedy communication with the rest of the world. Access to the internet and telecommunications is usually essential for the success of new export firms.
- **Institutional and regulatory framework:** The regulatory and institutional environment prevailing in an economy can either promote or hinder export. Complicated or cumbersome government rules and regulations relating to exports can undermine efforts to export. Simplified and harmonized export regulations are thus necessary.

Devising selective measures to stimulate export value addition such as fiscal and direct credit incentives, selective subsidies and local content requirements are needed. Such interventions can help firms improve their export competitiveness and can encourage a more balanced export mix. Many developing economies have used selective measures to stimulate export growth and diversification. Selective measures include:

- export subsidies: prioritizing the tax and subsidy export promotion programmes for new potential export sectors. This will help promote diversity of exports; and.
- local content requirements: multinational firms should use a certain proportion of locally made parts and components. Such a policy can be used to promote value addition by emphasizing the local procurement of parts and components from non-traditional export sectors.

Investing in human capital development is essential since a lot of research has shown that a diversified export portfolio (and high-value manufacturing) is correlated with a more educated work-force (Carrere, Strauss-Kahn and Cadot 2007). Lack of skilled manpower is a key constraint on the ability of an economy to diversify its export basket (Gullstrand 2000, Parketa and Tamberi 2008). Countries aiming to move to value addition need policies on technology assessment, technology acquisition, adoption, adaptation and development and technology diffusion to raise worker (and firm) productivity in potential export sectors..

Integration into the Global Value Chains: Technological advances and organizational changes in the global economy and within transnational corporations (TNCs) have fundamentally altered the way goods and services are produced. Participation in global value chains, however, requires an ability to produce specialized goods or services at a demanding level of quality and quantity and within tight timelines. Thus, identify and develop the capacity required to produce special goods or services.

Designing incentive systems that, for instance, encourage FDI flows into non-traditional sectors such as manufacturing,

Upgrading existing primary or semi processed goods exporting companies to graduate into finished products exports

Excess trade procedures create additional transaction costs incurred by participants in trade. Therefore, under take measures which facilitates:

- Prepare a clear value addition export strategy, within the broader economic transformation strategy of the country,
- Revise the existing incentive package, update it to match with present day needs and the value addition objective;
- A special and incremental incentive system should be prepared and provided to value adding exporters that is different from primary commodity exporters;
- Prepare an incentive system which is recursive, i.e., which depend on the export performance of a particular processed goods exporting industry;
- Attract export-oriented foreign direct investment, particularly in manufacturing; and
- Set a realistic exchange rate regime, which moves to reflect movements in the costs of domestic factors of production and trends on international markets.

## 8.5. Conclusion

Industrialization has been identified as one of the pillars that drives structural transformation since it promotes economic diversification, inclusive growth, efficient utilisation of abundant physical, mineral and human resources and in the process eliminate poverty and hence structurally transform economies. Industrialization with its capability to generate direct and indirect employment, strong forward and backward linkages with other sectors of the economy not

only promises to transform economy but also to ensure that growth translates into sustainable development.

Industrialization and trade have a bi-directional relationship: industrialization facilitates trade, and trade also facilitates industrialization. Trade plays a major role in economic growth and it has the potential to promote trade-induced industrialization of the country provided it is deliberately directed at industrialization.

The state of value addition through processing is very low underpinned; among others; by the country's low level industrialization stage, dominance of subsistent agriculture in the economy and low share (less than 5 percent) of manufacturing industry in the GDP. Besides, the economy has been characterized by a loose agriculture-manufacturing industry linkage and heavy reliance on primary commodity exports, accounting for over 90 percent of its merchandise export earnings.

Since continued dependence on unprocessed primary commodities for its export cannot sustain the country's recent growth performance, promote industrialization and attain the required structural transformation, it has to diversify vertically into higher value-added processed agricultural products. In this regard, the country could exploit its comparative advantage in commodity based industrialization and add-value to these resources using its abundant human capital.

To this end, introducing structural change on the domestic manufacturing industry production system and trade has paramount importance. This includes, building the domestic processing capacity of manufacturing industries, strengthening agriculture-industry linkages and issuing and effectively implementing trade policy, which recognise the developments in the global production system, especially internationalisation of production system, and promote value addition through processing and manufacturing.

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