



**INTERNATIONAL FOOD  
POLICY RESEARCH INSTITUTE**  
*sustainable solutions for ending hunger and poverty*  
Supported by the CGIAR



**ETHIOPIAN DEVELOPMENT  
RESEARCH INSTITUTE**

**ESSP2 Discussion Paper 13**

## **The Rural-Urban Transformation in Ethiopia**

Paul Dorosh and Emily Schmidt

Development Strategy and Governance Division, International Food Policy Research  
Institute – Ethiopia Strategy Support Program 2, Ethiopia

Ethiopia Strategy Support Program 2 (ESSP2)

ESSP2 Discussion Paper 13

June 2010

**IFPRI-Addis Ababa**  
P.O. Box 5689  
Addis Ababa, Ethiopia  
Tel: +251-11-646-2921  
Fax: +251-11-646-2318  
E-mail: [ifpri-addis@cgiar.org](mailto:ifpri-addis@cgiar.org)

**IFPRI HEADQUARTERS**  
International Food Policy Research Institute  
2033 K Street, NW • Washington, DC 20006-1002 USA  
Tel: +1-202-862-5600  
Skype: IFPRIhomeoffice  
Fax: +1-202-467-4439  
E-mail: [ifpri@cgiar.org](mailto:ifpri@cgiar.org)  
[www.ifpri.org](http://www.ifpri.org)

# THE ETHIOPIA STRATEGY SUPPORT PROGRAM 2 (ESSP2)

## DISCUSSION PAPERS

### ABOUT ESSP 2

The Ethiopia Strategy Support Program 2 is an initiative to strengthen evidence-based policymaking in Ethiopia in the areas of rural and agricultural development. Facilitated by the International Food Policy Research Institute (IFPRI), ESSP 2 works closely with the government of Ethiopia, the Ethiopian Development Research Institute (EDRI), and other development partners to provide information relevant for the design and implementation of Ethiopia's agricultural and rural development strategies. For more information, see <http://www.ifpri.org/book-757/ourwork/program/ethiopia-strategy-support-program> or <http://www.edri.org.et/>.

### ABOUT THESE DISCUSSION PAPERS

The Ethiopia Strategy Support Program 2 (ESSP2) Discussion Papers contain preliminary material and research results from IFPRI and/or its partners in Ethiopia. The papers are not subject to a formal peer review. They are circulated in order to stimulate discussion and critical comment. The opinions are those of the authors and do not necessarily reflect those of their home institutions or supporting organizations.

---

#### About the Author(s)

**Paul Dorosh** Ethiopia Strategy Support Program, International Food Policy Research Institute

**Emily Schmidt** Ethiopia Strategy Support Program, International Food Policy Research Institute

# **The Rural-Urban Transformation in Ethiopia**

Paul Dorosh and Emily Schmidt

Development Strategy and Governance Division, International Food Policy Research Institute –  
Ethiopia Strategy Support Program 2, Ethiopia

## **Table of Content**

1. INTRODUCTION .....	1
2. POLITICAL AND DEMOGRAPHIC DRIVERS.....	4
3. THE ETHIOPIAN ECONOMY .....	7
4. URBANIZATION AND ETHIOPIA'S CHANGING ECONOMIC LANDSCAPE .....	16
5. TRENDS IN RURAL AND URBAN INCOMES AND POVERTY .....	30
6. RURAL-URBAN MIGRATION.....	32
7. PUBLIC INVESTMENT POLICIES.....	35
8. CONCLUDING OBSERVATIONS.....	41

## List of Tables

Table 1: Political events and economic policies of three political regimes, 1960 to 2005.....	5
Table 2: Agricultural Share in GDP in East African Countries, 1980s-2000s .....	8
Table 3: Agro-Ecological Zones in Ethiopia.....	9
Table 4: Crop Area and Production (Meher Season) – 2004/05-2007/08.....	10
Table 5: Ethiopia: Total area cultivated by farm size and agro-ecology <sup>a</sup> .....	11
Table 6: Ethiopia: Cereal Production and Availability, 1961-62 – 2008/09.....	13
Table 7: Ethiopia: Cereal Area Cultivated, Decade Averages.....	14
Table 8: Sectoral Output and Growth in Ethiopia: 1999/00 to 2008/09 .....	15
Table 9: Agglomeration Index* – Percent of people considered urban by region.....	17
Table 10: Ethiopia: Alternative Urbanization Estimates .....	18
Table 11: Urbanization in East Africa 2000-2005 .....	19
Table 12: Urban Population by City Size (2007).....	20
Table 13: Percent population connected to a city of 50,000 people in 2007 .....	22
Table 14: Electricity Generation Capacity 1958 to 2011* in Ethiopia .....	23
Table 15: Ethiopia: Electricity Use, 2002/03 to 2006/07 .....	25

Table 16: Fixed Line and Cellular Telephones 2003 to 2010 in Ethiopia .....	26
Table 17: Net Primary School Enrollment in East African Countries.....	28
Table 18: Ethiopia Poverty Rates by Rural and Urban .....	30
Table 19: Trends in poverty headcount indices and changes in poverty headcount indices, by region, 1995/96-2004/05 .....	31
Table 20: Government of Ethiopia Expenditures (Rural, Urban and Other), 1999/00 and 2007/08...	37
Table 21: Subjective land rights, tenure security, and investment .....	39

## List of Figures

Figure 1: Ethiopia: Real GDP (2000/01 Birr): 1998/98 – 2007/08 .....	7
Figure 2: Agricultural Share in GDP in East African Countries, 1980-2008.....	8
Figure 3: Ethiopia: Agro-ecological Zones.....	9
Figure 4: Total area cultivated by farm size and agro-ecology, 2007/08 <sup>a</sup> .....	12
Figure 5: Ethiopia: Per Capita Cereal Consumption and Imports, 1961/62 to 2008/09 .....	13
Figure 6: Ethiopia: Alternative Urbanization Estimates .....	19
Figure 7: Travel time 1984 and 2007.....	21
Figure 8: Ethiopia: Electricity Generation Capacity 1958 to 2011* in Ethiopia .....	24
Figure 9: Fixed Line and Cellular Telephones 2003 to 2010 in Ethiopia .....	26
Figure 10: Ethiopia Hunger Index: 2000 - 2005.....	27
Figure 11: Net Primary School Enrollment in East African Countries (All Children) .....	28
Figure 12: Net Primary School Enrollment in East African Countries (Girls Only).....	29
Figure 13: Ethiopia Poverty (percentage): 1995/96 – 2004/05.....	30
Figure 14: Government of Ethiopia Expenditures (Rural, Urban and Other), 1996/97 to 2007/08.....	37

## **ABSTRACT**

Although Ethiopia's economy has grown rapidly over the past decade and urbanization is increasing, the country's economic and spatial transformation has only just begun. Ethiopia's share of agriculture in GDP in 2006 (48 percent) was the highest in the world, and more than double the average for low income countries (20 percent). Likewise, Ethiopia remains one of the least urbanized countries in the world (16 percent), compared to the Sub-Sahara Africa average of 30 percent.

Nonetheless, massive changes are underway. Agricultural growth accelerated in the second half of the first decade of the 2000s so that real agricultural GDP growth averaged 6.2 percent from 1998/99 to 2007/08. At the same time, Inflows of foreign aid, workers' remittances and private transfers that funded a surge in investment and boom in the construction sector. Measuring urbanization in terms of spatial agglomerations of people in and near cities of 50,000 or more, shows that urbanization growth rates between the population census years 1984 and 2007 are much higher (between 8 and 9 percent) than estimates based on official definitions of urban (4.2 percent).

A surge in public investment has also helped bring about a new era for economic development. Road investments, particular those in transportation corridors in the highlands, have greatly increased connectivity, so that the number of people residing in or within three hours of a city of 50,000 or more, rose from 6.24 million in 1984 (15.5 percent of the population) to 38.7 million in 2007 (48.5 percent of the population). Moreover, massive investments in hydro-electric power have revolutionized Ethiopia's economy and opened up the potential for significant increases in productivity and output. Electricity per capita is expected to soon reach a level nearly 9 times the level of the 1960s, though it still remains far below the sub-Saharan Africa average. Similarly, fixed telephone line infrastructure more than doubled from 2003 to 2008; and cell phone subscription catapulted to 3.16 million subscribers in 2008 from only 50,000 in 2003. Finally, improvements in education and health are making significant impacts on the country's wellbeing and productivity.

As Ethiopia moves forward, it faces key development policy decisions. Since the late 1990s, the country has followed an Agriculture Development Led Industrialization (ADLI) policy emphasizing investments to increase agricultural productivity and spur growth linkages with the rest of the economy. At the same time, government policy has effectively slowed rural-urban migration through regulations prohibiting sale of land, loss of land rights for those who leave rural areas, and registration requirements for new migrants. Allocation of public investments across sectors and across rural-urban space, together with land policies and various regulations on labor mobility, will be major determinants of the growth path of Ethiopia's economy and the extent of poverty reduction in the coming decade.

**Key Words:** Rural-urban transformation, economic development, infrastructure, poverty



# 1. INTRODUCTION

With the share of urban residents in the total population at 16 percent<sup>1</sup>, Ethiopia remains one of the least urbanized countries in the world (the Sub-Saharan Africa on average is 30 percent urbanized). The limited extent of the country's urbanization can also be detected in the relatively small, though growing, contribution of urban activities to national output – an estimated 43 percent of GDP. These statistics imply that the rural-urban transformation in Ethiopia is still in its early stages. Countries urbanize at different rates for various reasons, however. Examining the underlying biophysical and economic geography, as well as specific market forces of agglomeration (including incentives for migration), and government policies that help or hinder these transformations may give insight to future policy challenges and opportunities.

Ethiopia's unique geography continues to play a major role in determining the country's economic transformation. The landscape includes semi-arid highlands that comprise most of the agricultural production activities, and pastoralist lowlands that are prone to drought with variable rainfall. The development of rural areas and agricultural production is characterized by fragmented and dispersed land holdings (average plot size is 0.5 hectares<sup>2</sup>), limited irrigation potential<sup>3</sup>, and a high share of farms generated only small surpluses for market sales. Moreover, the complexity and fragility of mountain environments, limited accessibility, small landholding size and population growth pressure in the highlands of Ethiopia continue to challenge poverty reduction strategies and food security (FAO, 2002). The rugged terrain does not only affect rural development, but since most urban areas are located in the highlands, jagged topography, vulnerable ecological environments, and limited access to water often constrain the form and features of city development, as well as linkages to towns and rural areas.

Related to Ethiopia's biophysical geography is the challenge of building transportation infrastructure within a mountainous landscape. Given the limited infrastructure during the eighties and early nineties, the Ethiopian government prioritized transportation infrastructure investment in order to enhance linkages between cities in the highlands. Since 1994, the Ethiopian government continues to invest in key road infrastructure, but low density of all-weather road systems and dispersed rural populations are major factors influencing market access and rural – urban linkages. In 2007, almost 40 percent of the population was further than 5 hours travel time from a city of at least 50,000 people (Schmidt and Kedir, 2009).

---

<sup>1</sup> The percentage share of the urban population derived from the latest population census is 16.2 percent. Source: FDRE Population Census Commission (December 2008). *Summary and Statistical Report of the 2007 Population and Housing Census - Population Size by Age and Sex*, Federal Democratic Republic of Ethiopia (FDRE).

<sup>2</sup> EASE, 2000-01

<sup>3</sup> Highland systems in Ethiopia tend to have smaller catchments and feed from gravelly rivers in the upper part of basins. Flash floods are more common and difficult to predict than are floods in lowland systems. Command areas are relatively small, defined by fluctuating topography.

The level of development of Ethiopia may also play a role in defining rural-urban linkages, and perhaps is also a function of urbanization. As an economy grows, its structure and the location of its economic activity tends to change from a rural agriculture-based economy to a more diversified economy with much larger urban industrial and service sectors. This transition from agriculture to industry and services, first documented by Simon Kuznets in his studies of economic growth in the 1950s, is the usual pattern of economic development, and typically involves growth in the economic output of cities relative to small towns and rural areas. Initially, increases in agricultural productivity may precede the growth of urban settlements. But as new innovations take place in the urban sector, urban labor productivity and wages rise, making secondary cities and urban centers an attractive supplement (or substitute) to on-farm income generation. For Ethiopia, however, the challenging biophysical landscape (mountainous highlands enveloped by drought prone lowlands<sup>4</sup>), limited transportation and communications infrastructure, and current level of development, as well as the past and current political regimes have resulted in a relatively slow transition<sup>5</sup>.

This paper reviews Ethiopia's development strategies, particularly those affecting rural-urban linkages and urbanization, and explores reasons for the country's slow urban growth and implications of alternative development strategies. The next section discusses the broad political and demographic drivers that have shaped development policies and outcomes. Section 3 describes Ethiopia's agricultural economy and its performance. Section 4 then discusses urbanization and investments in infrastructure that have brought about great improvements in connectivity and linkages between rural and urban areas. Trends in rural and urban incomes and levels of poverty are presented in Section 5, and levels of rural-urban migration and their determinants are reviewed in Section 6. The final section concludes with a discussion of key development policy choices facing policy-makers today.

---

<sup>4</sup> The relatively small lowland humid lowlands in southwestern Ethiopia (mainly in Gambella region) are the exception to this general pattern.

<sup>5</sup> Ethiopia experienced three distinct political regimes from 1950 to present day, each of which redesigned agricultural development objectives and legislation governing land rights and land tenure.

## 2. POLITICAL AND DEMOGRAPHIC DRIVERS

Ethiopia's rural – urban transformation may be slow, but it is not static. Changes in government during the last fifty years have shaped development objectives and outcomes, and in doing so affected the economic and demographic geography of the country. Ethiopia experienced three distinct political regimes during the last half of the 20<sup>th</sup> century (Table 1). The monarchic regime (1950-1974) oversaw a complex land tenure system, and the state and church maintained control over a majority of agricultural land. After 1974, the Derge government nationalized rural land, abolished tenancy, took state control of commercial farms, and redistributed lands. After the fall of the Derge regime in 1991, the new government adopted structural adjustment programs, abolished agricultural price control, and emphasized Agricultural Development Led Industrialization (ADLI), but landholders in Ethiopia are still not allowed to sell, exchange, or mortgage land. Land tenure laws remain vague and vary from one region to another. Given continued restrictions on land ownership and unclear regulations on land tenureship, labor mobility may be hindered, many government controls have been relaxed, which in some cases has released agricultural capital and labor for non-agricultural activities.

Population growth in rural areas and insufficient demand for agricultural goods in urban areas has slowed per capita agricultural and rural income growth and Ethiopia's economic transformation. Increasing land pressure (within the context of already small land holdings that primarily allow for subsistence agriculture), as well as environmental degradation will limit and diminish per capita on-farm incomes. Relatively thin markets for agriculture in urban areas are also of concern. Ethiopia lacks a sufficiently large urban (non-farm) population to generate enough demand for its own agricultural products.

Much of the urban economic theory contends that urbanization emerges from the transformation of agriculture. A region where agricultural productivity is quickly increasing is often where urban centers are growing the most rapidly as well (Montgomery et al. 2003). But agricultural growth could ultimately be constrained by inadequate demand. Hine argues that much of Ethiopia's development problems are due to the low percentage of urban population: "58 million rural dwellers will not get rich trying to compete to sell food to 11 million urban dwellers" (World Bank 2005). Small cities and rural towns also provide important inputs to agricultural processes. Unless farmers are able to respond to demand from urban consumers, through access to natural resources, credit, labor and inputs, local markets are limited to very low-level transactions (Tacoli and Satterthwaite, 2003). The issues for Ethiopia may be much more complex than suggested by these basic calculations, but nonetheless, there appears to be ample room for expanded urbanization to accelerate economic growth.

**Table 1: Political events and economic policies of three political regimes, 1960 to 2005**

Political Regime	Major Political Events	Broad Economic Policies	Agricultural Sector Policy		Food Security
			Input Market	Output Market	
<b>Monarchic Regime (1950-1974)</b>	<ul style="list-style-type: none"> <li>• Conquered many southern regions; Failed coup attempt in 1960</li> <li>• Insurgencies by the Eritrean Liberation Front</li> <li>• Land tax bills opposed by aristocracy and reduced monarch power base</li> <li>• Administrative change in 1955 constitution</li> </ul>	<ul style="list-style-type: none"> <li>• Export promotion in the 1950s with elaborate incentive package including tax holidays to attract FDI;</li> <li>• Import substitutions in the 1960s with prohibitive taxes; import tax rates (ad-valorem) range from 5% -100%;</li> </ul>	<ul style="list-style-type: none"> <li>• In the south, land equally distributed between churches, state, and local people. Granted more land to military and coup sympathizers;</li> <li>• Communal lands non-transferable</li> <li>• Large and privileged state farms exist</li> <li>• Farmer's rent as high as 50 percent of the produce</li> </ul>	<ul style="list-style-type: none"> <li>• Prices determined by the market forces locally, but the import taxes were prohibitively high for selected import competing commodities</li> </ul>	<ul style="list-style-type: none"> <li>• Famine broke out in 1972 and lasted until the regime fall in 1974; claimed approximately a half million Ethiopian lives;</li> <li>• Average food gap was 2-3 million tons.</li> </ul>
<b>Derge Regime (1974-1991)</b>	<ul style="list-style-type: none"> <li>• Intense power struggle between 1974 and 1977. Within six months, the Derg state chief was killed. Mengitsu came out as the Derg leader in February 1977</li> <li>• Due to civil strife, Derg was forced to introduce short-lived mixed economy in 1990</li> <li>• When Soviet support decreased in the late 1980s, Mengitsu's Derg regime collapsed in May 28, 1991.</li> </ul>	<ul style="list-style-type: none"> <li>• Aligned with the Soviet; and adopted central planning policies</li> <li>• In 1987, the nation officially became peoples' democratic republic of Ethiopia (PDRE).</li> <li>• Tightly controlled foreign exchange and the difference between official and black market rate reached as high as 250 percent</li> <li>• Import tax rates (ad-valorem) range from 5% to 200%.</li> </ul>	<ul style="list-style-type: none"> <li>• Land reform: nationalization of private and church properties</li> <li>• Labor sales and mobility prohibited</li> <li>• Fertilizer import, distribution, and pricing controlled by government in 1984</li> <li>• Agricultural inputs distribution controlled by public enterprises</li> <li>• No tariffs on import of agricultural inputs, but high tariffs on others</li> <li>• Cooperatives favored in terms of access to inputs.</li> </ul>	<ul style="list-style-type: none"> <li>• Enforced production quota, set prices of most commodities</li> <li>• Restrictions on goods and labor movement across regions</li> <li>• Marketing controlled by the state owned enterprises;</li> <li>• Agricultural income tax rate was progressive and as high as 89 percent</li> <li>• High taxation on exports of main crops, as high as 100 percent of farm gate price.</li> </ul>	<ul style="list-style-type: none"> <li>• Chronic food insecurity throughout 1980s;</li> <li>• Devastating famine in 1984: nearly a million people died.</li> <li>• Average food gap increased to 5.47 million tons;</li> <li>• Ethiopian Relief and Rehabilitation commission was established to handle relief and disaster management.</li> </ul>

<p><b>Current Regime (1991 - Present)</b></p>	<ul style="list-style-type: none"> <li>• Eritrea becomes independent in 1993 and Ethiopia is land locked</li> <li>• A new constitution adopted and first multi-party election held in 1994</li> <li>• War with Eritrea began in 1998 and lasted until 2000;</li> <li>• National assembly election held in 2000;</li> <li>• Second multi-party parliamentary election held in 2005.</li> </ul>	<ul style="list-style-type: none"> <li>• Agricultural Development Led Industrialization (ADLI) was announced in 1992</li> <li>• Decentralization in 1992</li> <li>• The currency was devalued by more than 100 percent in 1993 (2.5 to 5.5 ETB / US\$) and further devaluation in 1996 (6.50 ETB/US\$)</li> <li>• Ethiopia became member of the COMESA in 1994</li> <li>• Harmonization of tariffs in line with COMESA agreements in 2002</li> <li>• In 2002, Sustainable Poverty Reduction Strategy (PRSP) was introduced.</li> </ul>	<ul style="list-style-type: none"> <li>• Agricultural input market liberalized in 1992, while land remained public in the hands of the Government (no sale or exchange except lease and rent);</li> <li>• Agricultural input marketing is dominated by a few types of inputs; fertilizer and seed, still dominated by the public sector</li> <li>• Maximum duty rate in 1993 reduced from 230% to 80%.</li> </ul>	<ul style="list-style-type: none"> <li>• Output market liberalized and quota system lifted</li> <li>• Major price collapse for agricultural products in 2002</li> <li>• Public marketing enterprise (EGTE) established in 1992 with responsibility to stabilize the national grain market.</li> <li>• Government cancelled all taxes levied on export of goods, including major export products while a 5% sales tax is paid on selected agricultural products.</li> <li>• The maximum tariff on import was reduced to 50% down from 230%.</li> <li>• Agricultural income tax is allocated by regional states</li> </ul>	<ul style="list-style-type: none"> <li>• The food insecurity situation is worsened and food insecure population reached about 14 million in 2003</li> <li>• The RRC became DPPC in naming, with additional function to handle early warning systems</li> <li>• Food deficit has widened and drought cycles shortened</li> <li>• Safety net programme introduced in 2003.</li> </ul>
---	---	--	---	--	---

Source: Adapted from Rashid et al. (2009).

Another leading driver for economic transformation in the Ethiopian economy is the increasing demand of public service provision. Given the overwhelming percentage of people living in dispersed, inaccessible areas, public services such as schools and health centers are very expensive to provide and maintain, especially in rural areas. Although education has expanded to rural areas considerably during the last two decades, in 2005 approximately 75 and 50 percent of women and men respectively in rural areas had no formal education; 97 percent of women in rural areas gave birth at home<sup>6</sup> (DHS, 2005). Ethiopia may need to facilitate increases in economic density in order to create networks of small towns and urban centers that provide a framework for rural service provision.

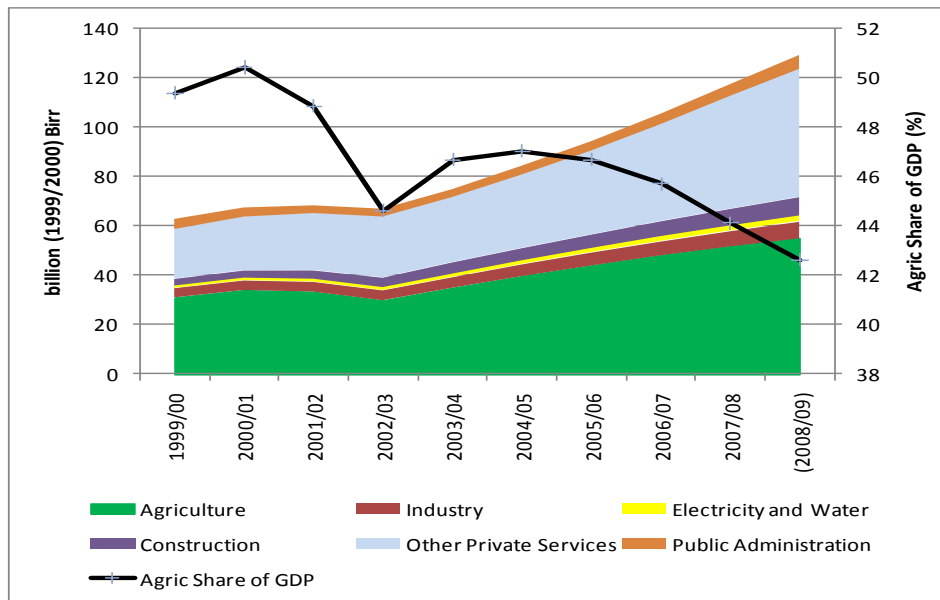
Given current development levels and population growth, it is clear that Ethiopia's economy will continue to experience dynamic transformations in order to address geographic and demographic pressures and challenges. The evolution of Ethiopia's economic structure and its accompanying agricultural development policies will form a major component to how fast and at what costs these transformations will occur.

<sup>6</sup> Access to school / education and cultural preferences of education attainment and childbirth practices are not disaggregated in these data.

### 3. THE ETHIOPIAN ECONOMY

In spite of rapid growth in the past decade, Ethiopia remains one of the world's poorest countries with a per capita gross national income of only \$1,190 in 2006, less than half the average of low income countries (\$2,698). Moreover, Ethiopia's share of agriculture in GDP in 2006 (48 percent) is the highest in the world, and more than double of the average for low income countries (20 percent).<sup>7</sup> In 1998/99, this share was even higher (51 percent), but it declined steadily from 1998/99 to 2007/08 even though real agricultural GDP growth averaged 6.2 percent over this period (Real GDP growth was even higher, at 7.7 percent per year<sup>8</sup>) (Figure 1). Thus, the structural transformation of Ethiopia's economy has begun, but there remains a striking difference between Ethiopia's overwhelmingly agriculture-dominant economy and the economies of most other developing countries.

**Figure 1: Ethiopia: Real GDP (2000/01 Birr): 1998/98 – 2007/08**



Source: Ministry of Finance and Economic Development (MoFED) from CSA website [http://www.csa.gov.et/surveys/National%20statistics/national%20statistics%202008/Scetion%20J\\_National%20Account.pdf](http://www.csa.gov.et/surveys/National%20statistics/national%20statistics%202008/Scetion%20J_National%20Account.pdf)

Ethiopia's share of agriculture in total GDP has been consistently about 10 percentage points above the average for East Africa (Table 2). Agriculture accounted for 56.5 and 58.4 percent of GDP in Ethiopia in the 1980s and 1990s, respectively, before declining to 35.4 percent in the 2000s. Other countries in East Africa experience much more rapid decline in the share of agriculture in GDP, particularly fast-growing Uganda, which reduced this share from 57.6 percent in the 1980s to only 26.2 percent in the 2000s (Figure 2).

<sup>7</sup> World Bank (2007). [WDR 2008]

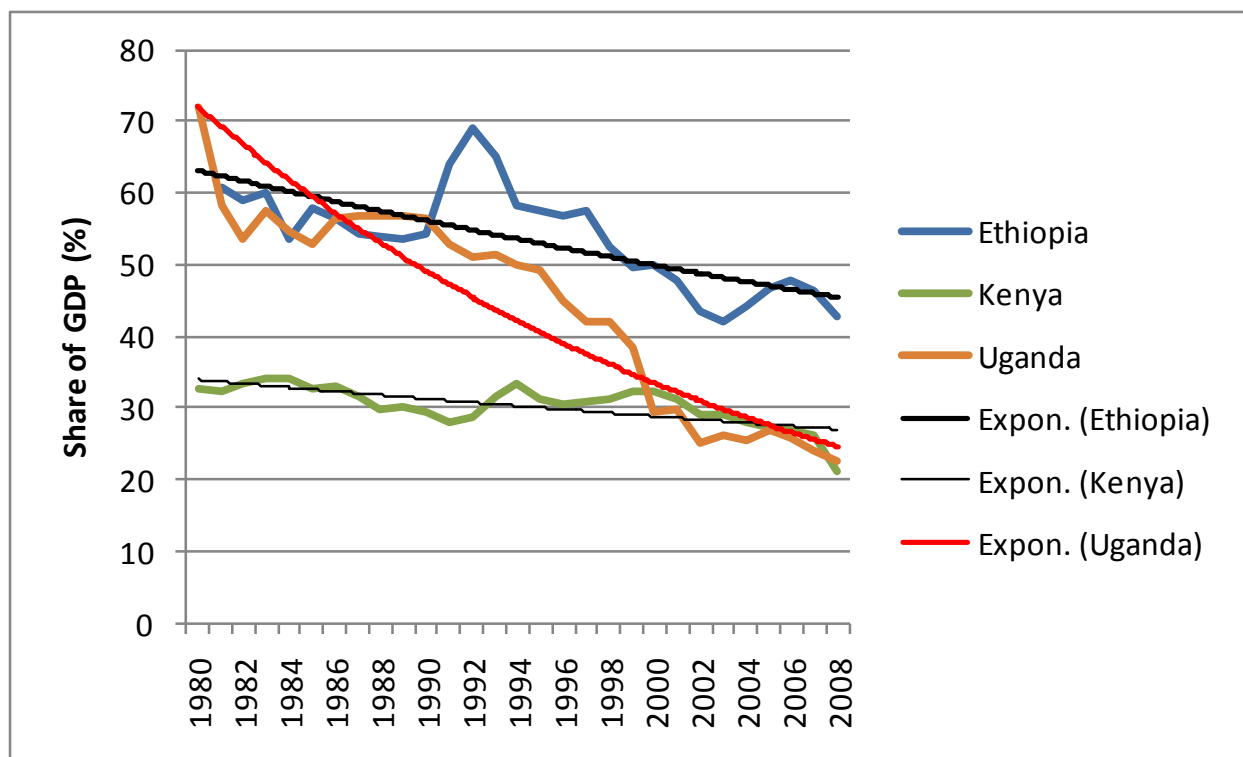
<sup>8</sup> These growth rates are estimated using logarithmic trend regressions.

**Table 2: Agricultural Share in GDP in East African Countries, 1980s-2000s**

	1980s	1990s	2000s
Ethiopia	56.5	58.4	45.6
Burundi	58.1	50.8	39.2
Kenya	32.4	30.7	27.9
Rwanda	40.2	40.6	38.0
Sudan	35.4	42.1	35.2
Uganda	57.6	47.9	26.2
<b>East Africa</b>	<b>46.7</b>	<b>45.1</b>	<b>35.4</b>

Source: Calculated from World Bank, World Development Indicators.

**Figure 2: Agricultural Share in GDP in East African Countries, 1980-2008**



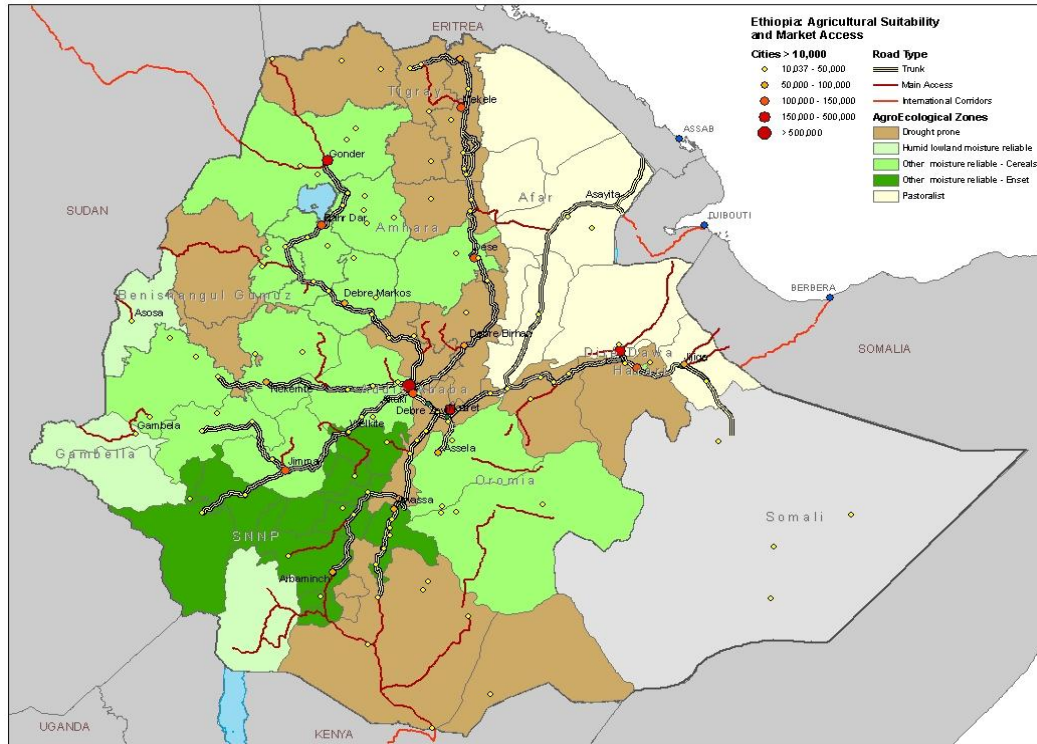
Source: Calculated from World Bank, World Development Indicators data.

### **Ethiopia's Agricultural Sector: Structure and Constraints**

Agricultural production patterns vary markedly across Ethiopia according to agro-climatic conditions, in particular, widely varying rainfall (which is generally higher in western Ethiopia and drier in the east) and elevation (which ranges from 100 meters below sea level to 4550 meters above sea level at its highest peak). Three broad agro-ecological zones (rain sufficient areas, drought prone highlands, and pastoralist lowlands), the “Three Ethiopia’s”, are officially

recognized in planning documents. The rain-sufficient areas can be further subdivided into the humid lowlands, the rainfall sufficient highland cereal-dominant areas, and the rainfall sufficient highland enset-based cropping systems<sup>9</sup> (Figure 3 and Table 3).

**Figure 3: Ethiopia: Agro-ecological Zones**



Source: EDRI (2010).

**Table 3: Agro-Ecological Zones in Ethiopia**

SAM Region	Temperature and Moisture Regime
Zone 1	Humid Lowlands Moisture Reliable
Zone 2	Moisture Sufficient Highlands – Cereals Based
Zone 3	Moisture Sufficient Highlands – Enset Based
Zone 4	Drought-Prone (Highlands)
Zone 5	Pastoralist (Arid Lowland Plains)

Cereals dominate Ethiopia’s agricultural production, accounting for almost three-quarters of area cultivated. Pulses and oilseeds together account for another 19 percent of area cultivated

<sup>9</sup> Numerous other categorizations, including the traditional agro-ecological zones based on rainfall and elevation variations as well as more finely defined agro-ecological zones developed by the Ministry of Agriculture and Rural Development can be found in the IFPRI Atlas of the Ethiopian Rural Economy (2004).



with coffee (3 percent), root crops, chat (a mildly narcotic export crop) and other crops accounting for the remaining 7 percent (Table 4).<sup>10</sup>

**Table 4: Crop Area and Production (Meher Season) – 2004/05-2007/08<sup>11</sup>**

Crop	Number of holders (mns)	Area Cultivated (mn hectares)	Area Cultivated Share (%)	Production (mn tons)	Production Share (%)
<b>Grain</b>	11.519	10.382	92.7	14.090	79.8
<b>Cereals</b>	11.157	8.230	73.4	12.063	68.3
Teff	5.463	2.338	20.9	2.408	13.6
Barley	3.842	1.024	9.1	1.326	7.5
Wheat	4.118	1.439	12.8	2.293	13
Maize	7.288	1.595	14.2	3.314	18.8
Sorghum	4.254	1.430	12.8	2.216	12.5
<b>Pulses</b>	6.377	1.384	12.4	1.496	8.5
<b>Oilseeds</b>	3.127	0.768	6.9	0.532	3
<b>Vegetables</b>	4.937	0.107	1	0.425	2.4
<b>Root crops</b>	4.758	0.175	1.6	1.473	8.3
<b>Fruit crops</b>	2.658	0.051	0.5	0.403	2.3
<b>Chat</b>	2.068	0.142	1.3	0.126	0.7
<b>Coffee</b>	3.049	0.306	2.7	0.211	1.2
<b>Hops</b>	1.685	0.023	0.2	0.026	0.1

Source: Alemayehu Seyoum Taffess (book chapter) computation using CSA data (CSA (July 2006), CSA (July 2007), and CSA (June 2008).

Almost all cereal production in Ethiopia is by smallholders, and 96 percent of total production of the four major cereals occurs during the main rainy season (the meher season). Although the majority of farmers in Ethiopia are small farmers, most of area cultivated derives from medium-sized farmers with cultivable land plots greater than 0.90 hectares in size. Sixty percent of smallholder farmers in Ethiopia cultivate less than 0.90 hectares of land; 40 percent of farmers cultivate 0.52 hectares or less. Medium-size farmers, (defined here as the upper 40 percent of “small” farmers, cultivating 0.90 hectares or more), account for 75 percent of total land cultivated (Table 5).

<sup>10</sup> Note that the share of other crops will rise if the value of output is considered.

<sup>11</sup> CSA defines a **holder** as:

“... a person who exercises management control over the operation of the agricultural holding and makes the major decision regarding the utilization of the available resources. He/she has primary technical and economic responsibility for the holding. He/she may operate the holding directly as an owner or a manager. Under conditions of traditional agricultural holding the holder may be regarded as the person, who with or without the help of others, operates land and/or raises livestock in his/ her own right, i.e. the person who decides on which, where, when, and how to grow crops or raise livestock or both and has the right to determine the utilization of the products.” See for instance CSA (June 2008).

**Table 5: Ethiopia: Total area cultivated by farm size and agro-**

Farm Size (hectares)	Moisture Reliable Cereal	Moisture Reliable Enset	Humid Lowland	Drought Prone	Pastoralist	Total
	(thousand hectares)					
0.0 - 0.25	111.7	133.2	6.5	76.9	6.8	335.0
0.25 - 0.52	364.3	298.7	17.1	271.2	22.1	973.4
0.52 - 0.90	884.0	355.7	31.0	474.3	39.4	1,784.4
0.90 - 1.52	1,739.5	330.0	47.0	824.8	70.5	3,012.0
1.52 - 25.20	4,153.2	272.4	94.4	1,617.8	140.3	6,278.0
<b>Total</b>	7,252.7	1,390.0	196.0	3,265.0	279.1	12,382.8
	(percentage of national total)					
0.0 - 0.25	0.9%	1.1%	0.1%	0.6%	0.1%	2.7%
0.25 - 0.52	2.9%	2.4%	0.1%	2.2%	0.2%	7.9%
0.52 - 0.90	7.1%	2.9%	0.3%	3.8%	0.3%	14.4%
0.90 - 1.52	14.0%	2.7%	0.4%	6.7%	0.6%	24.3%
1.52 - 25.20	33.5%	2.2%	0.8%	13.1%	1.1%	50.7%
<b>Total</b>	58.6%	11.2%	1.6%	26.4%	2.3%	100.0%

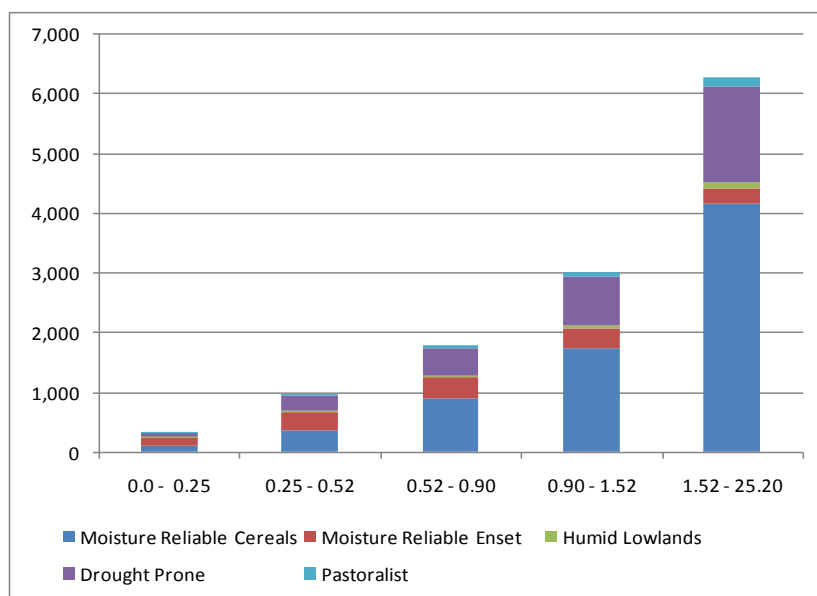
ecology<sup>a</sup>

<sup>a</sup> Each farm size interval (quintile) contains 20 percent of Ethiopia's small farms, approximately 2.57 million farms.

Source: Calculations from the Agriculture Sample Survey of 2007/08, Central Statistical Agency (CSA)

Most farmers (accounting for 48 percent of all farmers) reside in the moisture reliable cereal-based highlands, though farmers which produce on medium-sized plots are also numerous in the drought-prone highlands (20 percent of all farmers), (Figure 4). In the moisture-reliable enset-based highlands, population pressure has already diminished farm size to such an extent that out-migration has become a major pathway out of poverty.

**Figure 4: Total area cultivated by farm size and agro-ecology, 2007/08<sup>a</sup>**



<sup>a</sup> Each farm size interval (quintile) contains 20 percent of Ethiopia's small farms, approximately 2.57 million farms.

From the 1960s through the 1980s, cereal production in Ethiopia was characterized by slow or negative growth, and wide annual fluctuations (Table 6 and Figure 5).<sup>12</sup> As a result, per capita availability of cereals fell between the 1960s and the 1980s, even though net imports increased from 20 thousand tons per year to 520 thousand tons per year (Table 7).

In 1994/95 the Ethiopian Government launched the Agriculture Development-Led Industrialization (ADLI) development strategy, focused on increasing the productivity of smallholder farmers through the increased use fertilizers and improved seeds, investments in roads and other infrastructure and improvements of various public services (such as primary health care, primary education and water supply). Agriculture growth induced by these interventions would then spur industrialization, particularly in agricultural input and processing industries, as well as in sectors producing consumer goods in response to higher household incomes and increased spending.

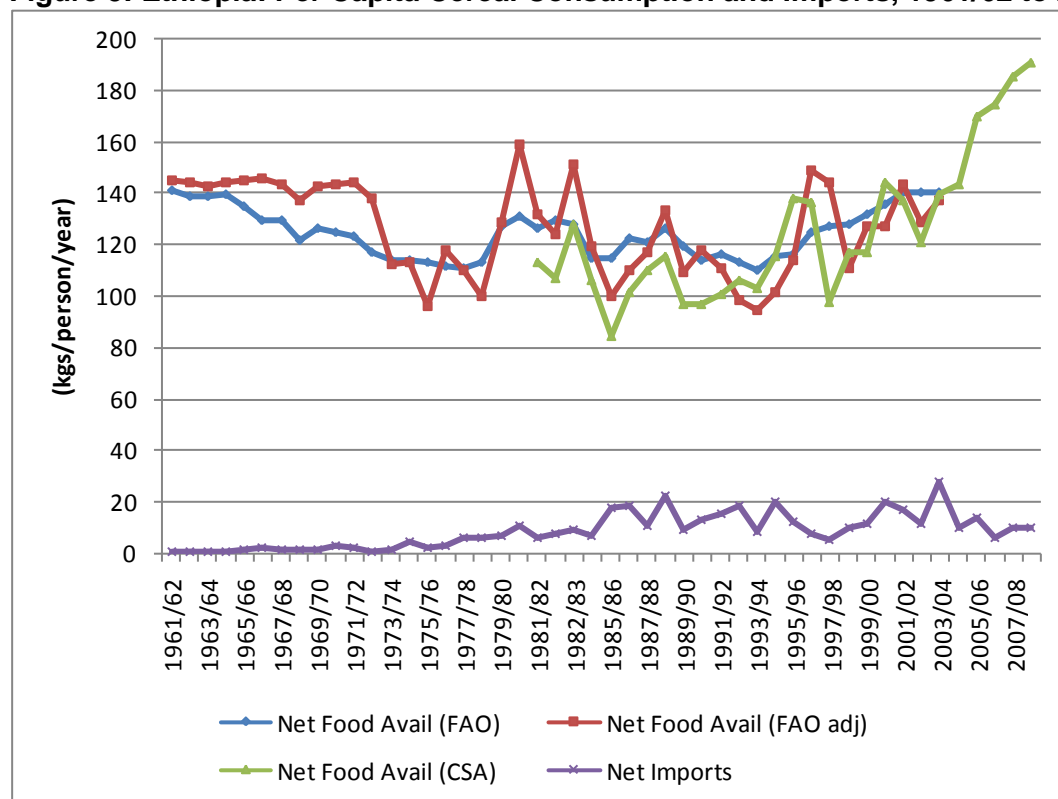
<sup>12</sup> Data on national cereal production levels and trends for Ethiopia are not without controversy. Data from the Food and Agricultural Organization (generally derived from the Ministry of Agriculture and Rural Development or its predecessors) have indicated more rapid growth in recent years. In 2009, however, the Government of Ethiopia designated the agricultural production data from the Central Statistics Agency (CSA) as the official data. Unless otherwise noted, we use CSA data in this chapter for all production data since 1981.

**Table 6: Ethiopia: Cereal Production and Availability, 1961-62 – 2008/09**

	Production (‘000 tons)	Net Imports (‘000 tons)	Net Availability (‘000 tons)	Food Availability (‘000 tons)	Population (mns)	Availability per capita (kgs/person)
(FAO Production Data)						
1961/62-1969/70	4,532	20	4,045	3,628	27.3	133.4
1970/71-1979/80	4,628	111	4,411	4,023	34.4	116.9
1980/81-1989/90	5,628	520	5,797	5,384	43.7	123.4
1990/91-1999/00	6,869	656	7,337	6,897	57.4	119.8
2000/01-2003/04	8,850	1,241	9,999	9,492	73.5	139.3
(CSA Production Data)						
1981/82-1989/90	4,886	533	5,175	4,761	44.4	107.0
1990/91-1999/00	6,672	656	6,995	6,555	57.4	112.9
2000/01-2003/04	9,020	1,241	9,810	9,303	68.1	135.4
2004/05-2008/09	10,397	618	10,495	9,937	77.1	173.0
2000/01-2008/09	10,940	867	11,260	10,725	73.5	156.3

Source: Calculated from FAO Food Balance Sheets (various years) and CSA production data.

**Figure 5: Ethiopia: Per Capita Cereal Consumption and Imports, 1961/62 to 2008/09**



Source: FAO Food Balance Sheets and authors' calculations.

ADLI investments, relatively good weather and peace in most of the country (particularly after the fall of the Derg regime in 1991) contributed to accelerated growth in cereal production in the 1990s. This growth was due entirely to increases in area cultivated (by almost 6 percent per year), as yields declined by 0.5 percent per year. Subsequently, growth in area cultivated slowed to 3.1 percent per year from 1999/2000 to 2008/09. However, yields increased by 3.5 percent per year in the period, so that growth in cereal production accelerated further to 7.0 percent per year.<sup>13</sup>

In spite of marked shifts in policies and availability of technology, the composition of cereal production, driven to a large extent by suitability to Ethiopia's varied agro-ecologies, has changed relatively little over the past five decades (Table 7). Teff accounted for the largest share (28.1 percent) from 2000/01 to 2008/09, followed by maize (20.6 percent), sorghum (17.5 percent), wheat (16.5 percent) and barley (12.5 percent). There has been, however, a gradual decline in the shares of teff and barley from the 1960s to the first decade of the 2000s, (a decline by 5.8 and 2.9 percentage points, respectively), while the share of maize increased by 7.8 percentage points.

**Table 7: Ethiopia: Cereal Area Cultivated, Decade Averages**

	(million hectares)						
	Teff	Wheat	Maize	Sorghum	Barley	Other	Total
<b>1961/62-1969/70</b>	2.11	0.97	0.80	1.09	0.96	0.30	6.23
<b>1970/71-1979/80</b>	1.67	0.78	0.83	0.87	0.84	0.27	5.25
<b>1980/81-1989/90</b>	1.23	0.52	0.84	0.71	0.86	0.15	4.30
<b>1990/91-1999/00</b>	1.76	0.75	1.12	0.95	0.73	0.29	5.60
<b>2000/01-2008/09</b>	2.17	1.27	1.59	1.35	0.96	0.38	7.72
	(Shares of Total Cereal Area Cultivated)						
<b>1961/62-1969/70</b>	33.9%	15.6%	12.8%	17.4%	15.4%	4.9%	100.0%
<b>1970/71-1979/80</b>	31.8%	14.8%	15.7%	16.6%	15.9%	5.1%	100.0%
<b>1980/81-1989/90</b>	28.7%	12.0%	19.5%	16.4%	19.9%	3.4%	100.0%
<b>1990/91-1999/00</b>	31.3%	13.4%	20.0%	17.0%	13.1%	5.2%	100.0%
<b>2000/01-2008/09</b>	28.1%	16.5%	20.6%	17.5%	12.5%	4.9%	100.0%

**Notes:** 1961/62-1979/80 data are from FAO. 1980/81 – 2008/09 data are from CSA Agricultural Sample Surveys.

Considering only the first decade of the 2000s, wheat and sorghum area cultivated grew fastest (by 4.9 and 4.6 percent per year, respectively), while maize area cultivated increased by only 1.6 percent per year. In this same period, yields of all five major cereals increased, with growth rates averaging 2.9 and 3.0 percent per year for maize and wheat, and 4.3 and 4.8 percent per

<sup>13</sup> Production and yield growth was particularly rapid from 2004/05 to 2008/09 (10.6 and 5.7 percent, respectively), but the reasons for such a rapid increase in this period are not entirely clear, as econometric analysis of yields at the farm level data show only limited fertilizer responsiveness (Seyoum Taffesse et al, 2010).

year for sorghum and teff. Given these increases in area as well as yields, production of all the major cereals surged, with teff (8.9 percent), sorghum (8.6 percent) and wheat (8.3 percent) having the fastest annual growth rates. Growth in maize production, 6.8 percent per year in the 1980s and 5.5 percent per year in the 1990s, slowed to only 4.2 percent in the 2000s after a collapse in domestic maize prices helped slow and even reverse adoption of hybrid maize technology (Howard et al., 2003).

## **Industry and Services**

Industry, including mining, electricity and water, and construction, accounted for only 10.7 percent of GDP in 2008/09. The construction sector, accounting for 5.0 percent of GDP and nearly half of the industrial sector, grew very rapidly in the 1999/00 to 2008/09 period, as it was spurred by inflows of foreign aid, workers' remittances and private transfers that funded a surge in investment in the mid-2000s. Large and medium scale manufacturing (2.7 percent of GDP) also increased rapidly, growing by 8.1 percent over the same period. Much of the manufacturing in Ethiopia is directly linked to agriculture. Milling and food processing account for 43 percent of manufacturing value added. Much of Ethiopia's industry is concentrated in and around Addis Ababa, due largely to the presence of a large market for industrial products and access to imported inputs through transport links via Dire Dawa to Djibouti.

**Table 8: Sectoral Output and Growth in Ethiopia: 1999/00 to 2008/09**

	<b>2008/09 (bn Birr)</b>	<b>2008/09 Share of GDP (percent)</b>	<b>Growth Rate 1999/00-08/09 (percent)</b>
<b>Agriculture</b>	160.6	50.3%	7.0%
<b>Industry</b>	34.0	10.7%	9.2%
<b>Mining</b>	1.3	0.4%	4.2%
<b>Large, Medium Scale Manuf</b>	8.6	2.7%	8.1%
<b>Small Scale, Cottage Industries</b>	4.0	1.3%	5.8%
<b>Electricity and Water</b>	4.0	1.3%	7.6%
<b>Construction</b>	16.1	5.0%	12.3%
<b>Other Private Services</b>	114.2	35.8%	11.2%
<b>Public Administration</b>	10.3	3.2%	4.2%
<b>Total</b>	319.2	100.0%	8.6%

Services account for over one-third of GDP, much of this from trade (11 percent of GDP) and transport and communications (6 percent of GDP), respectively (2005/06 data).

#### **4. URBANIZATION AND ETHIOPIA'S CHANGING ECONOMIC LANDSCAPE**

Of the estimated 73 million people living in Ethiopia in 2007, roughly 84 percent live in rural areas and derive their income primarily from agriculture based activities. The remaining 14.2 percent live in the urban, highland areas which comprise 35 percent of Ethiopia's territory, according to the agglomeration index<sup>14</sup>(Table 9). Given the overwhelming revenue generated from agricultural activities (54 percent) in Ethiopia, policymakers have focused primarily on Agricultural Development Led Industrialization (ADLI), but continuous growth of urban centers (up to 6 percent per year), requires a better understanding of the dynamic geographic and economic transformations occurring throughout the country.

During the last two decades, Ethiopia has dramatically expanded and improved key infrastructures. Since the previous census in 1994, new cities were created, and economically viable cities have experienced large growth in population count and density. Upgraded and maintained transportation corridors in the highlands, as well as increased population density along these corridors, have spurred urban clustering along infrastructure networks. In addition, massive investments in hydro-electric power have revolutionized Ethiopia's economy and opened up the potential for significant increases in productivity and output. Fixed telephone line infrastructure more than doubled from 2003 to 2008; and cell phone subscription catapulted to 3.16 million subscribers in 2008 from only 50,000 in 2003. Finally, improvements in education and health are making significant impacts on the country's wellbeing and productivity. We will explore each of these improvements in more detail in this section.

---

<sup>14</sup> The agglomeration index uses three indicators to determine city populations: population size of a major city, population density within and around the major city, and travel time to a major city

## City Growth and Urbanization

The recent publication of Ethiopia's 2007 census, reports urban population figures at the city level and allows for greater insight of how Ethiopia's demographic landscape has evolved. Schmidt and Kedir, 2009 provide an analysis of city growth and expansion using city population, infrastructure networks, and population density in order to provide a standardized comparison of urban growth over the last 3 census periods (1984, 1994 and 2007).

**Table 9: Agglomeration Index\* – Percent of people considered urban by region**

<i>Regions</i>	<i>Total Population (thousands)</i>	<i>Percentage Urban</i>	<i>Total Population (thousands)</i>	<i>Percentage Urban</i>	<i>Total Population (thousands)</i>	<i>Percentage Urban</i>
	1984**		1994		2007	
<b>Addis Ababa</b>	1,423	61.2	2,113	85.5	2,738	99.3
<b>Afar</b>	780	-	1,061	-	1,411	-
<b>Amhara</b>	10,686	2.0	13,834	3.7	17,214	7.5
<b>Benishangul – Gumuz</b>	351	-	460	-	671	-
<b>Dire Dawa</b>	158	20.3	252	58.2	343	66.3
<b>Gambella</b>	172	-	182	-	307	-
<b>Harari</b>	82	55.2	131	76.2	183	86.0
<b>Oromia</b>	14,016	1.7	18,733	4.6	27,158	9.2
<b>SNNPR</b>	7,501	-	10,377	2.2	15,043	21.1
<b>Somali</b>	2,006	0.2	3,199	1.6	4,439	1.9
<b>Tigray</b>	2,692	2.0	3,136	3.8	4,314	8.0
<b>Ethiopia</b>	<b>39,869</b>	<b>3.7</b>	<b>53,477</b>	<b>7.1</b>	<b>73,919</b>	<b>14.2</b>

Source: Schmidt and Kedir (2009)

\* Population density per square kilometer (derived by GRUMP and LandScan for the year 2000), a major component in the agglomeration index, was projected using a growth rate of 3% per annum to adjust for different census years. \*\*Population figures for 1984 were approximated due to changes in administrative boundaries after 1984. In order to maintain consistency across all years, we geographically allocated population to the current regional boundaries

Urban estimates from the 2007 census are similar to those estimated by Schmidt and Kedir (2009) for 2007 using the agglomeration index methodology, yet when comparing urban growth over time, these estimates show a dramatic difference (Table 10 and Figure 6). This difference is primarily derived from the definition of an urban area used for the two estimates. The Central Statistical Agency measures urban areas as all administrative capitals of regions, zones, and woredas, as well as localities with at least 1,000 people who are primarily engaged in non-agricultural activities, and / or areas where the administrative official declares the locality to be urban. In comparison, the agglomeration index provides a measure of the economic significance of urban areas rather than a definition of urban based on political status, administrative boundary, or presence of particular urban services or activities. The agglomeration index uses two criteria whereby locations are categorized as urban if populations



have: a population density greater than 150 people per km<sup>2</sup>; and are located within 1 hour travel time from a city of at least 50,000 people.

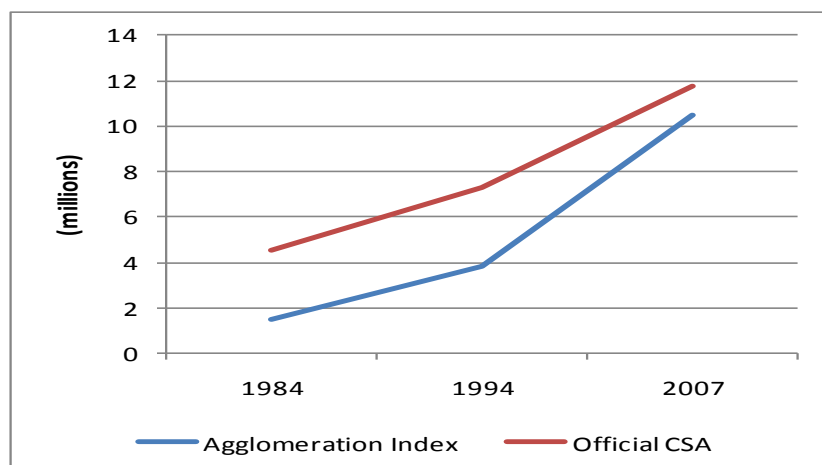
Evaluating Ethiopia's urban growth using the agglomeration index methodology shows that urbanization growth rates are much higher (between 8 and 9 percent) than previously calculated by the CSA. Whereas CSA estimated 1984 urbanization at 11.4 percent, the agglomeration index calculated urbanization at 3.7%. Between 1984 and 1994, and between 1994 and 2007, the percent urban doubled according to the agglomeration index.

**Table 10: Ethiopia: Alternative Urbanization Estimates**

	<b>Official Estimate (percent)</b>	<b>Agglomeration Index (percent)</b>
<b>1984</b>	11.4%	3.7%
<b>1994</b>	13.7%	7.1%
<b>2007</b>	15.9%	14.2%
	<b>(mns people)</b>	<b>(mns people)</b>
<b>1984</b>	4.55	1.48
<b>1994</b>	7.33	3.80
<b>2007</b>	11.72	10.50
	<b>(growth rate)</b>	<b>(growth rate)</b>
<b>1984-1994</b>	4.9%	9.9%
<b>1994-2007</b>	3.7%	8.1%
<b>1984-2007</b>	4.2%	8.9%

**Source:** CSA population estimates; Schmidt and Kedir (2009).

**Figure 6: Ethiopia: Alternative Urbanization Estimates**



Source: CSA population estimates; Schmidt and Kedir (2009).

Although Ethiopia's agglomeration index suggests significant levels of urban clustering and growth over time, when comparing to other countries in the region, Ethiopia remains one of the least urbanized in East Africa. In 2000, agglomeration in Ethiopia was measured at 11.9 percent, while most other East African countries were between 25 and 32 percent. Overall, Ethiopia's agglomeration index is 10 percentage points below the average agglomeration index for East Africa.

**Table 11: Urbanization in East Africa 2000-2005**

	Total	Urban	Agglom.	Urbanization		Pop Cities	Pop. Largest
	Population	Population	Index	2000	2005	> 1mn	City
	2005	2005	2000	2000	2005	2005	2005
	(mns)	(mns)	(percent)	(percent)	(percent)	(% tot pop)	(% urban pop)
Ethiopia	71	11	11.9	14.9	16.0	3.8	24.1
Burundi	8	1	31.7	8.6	10.0	0	n.a.
Kenya	34	7	25.4	19.7	20.7	7.8	37.6
Rwanda	9	2	14.3	13.8	19.3	0	43.7
Sudan	36	15	31.9	36.1	40.8	12.2	30.0
Uganda	29	4	28.0	12.1	12.6	4.6	36.2
East Africa	187	39	21.7	19.1	21.0	5.9	
Nigeria	132	63.6	40.8	43.9	48.2	13.3	16

Source: Calculated according to the population census and national definition of urban and rural: World Bank, World Development Report data.

The urban population that resides in the largest city (Addis Ababa), in comparison to other East African capital cities makes up only 24.1 percent of urban population (3.8 percent of total population). When assessing urban population by city size, large cities (defined as Addis Ababa, Dire Dawa, and Harari) comprise 42.5 percent of urban population in Ethiopia, while small cities

(ranging from 20,000 to 50,000 people) make up 57.5 percent of total population (Table 12). When assessing total share of population in large cities, only 4 percent of the population live in the three large city areas (Addis Ababa, Dire Dawa, and Harare), and only 5.4 percent of the population live in cities greater than 20,000 people. These numbers suggest that Ethiopia has ample space to expand and grow its primary and secondary cities.

**Table 12: Urban Population by City Size (2007)**

	Population	Population	Population	Agglom	Agglom
	Census	Census	Census	Index <sup>d</sup>	Index
	(thousands)	(share of total)	(share of cities)	(thousands)	(share of total)
<b>Large Cities<sup>a</sup></b>	3,070	4.0%	42.5%	4,545	6.0%
<b>Small Cities<sup>b</sup></b>	4,146	5.4%	57.5%	6,136	8.2%
<b>50,000+</b>	2,379	3.1%	33.0%	3,522	4.7%
<b>20,000 - 50,000</b>	1,766	2.3%	24.5%	2,615	3.5%
<b>Other Urban<sup>c</sup></b>	5,132	6.6%	---	---	---
<b>Total Urban</b>	12,348	16.0%	---	10,681	14.2%
<b>Rural</b>	64,825	84.0%	---	64,536	85.8%
<b>Total Population</b>	77,173	100.0%	---	75,217	100.0%

Source: World Bank Development Report 2009, World Development Indicators.

Note: Average agglomeration for 2000 is calculated using 2005 population weights.

<sup>a</sup> Addis Ababa, Dire Dawa and Harare

<sup>b</sup> Other cities with populations greater than 20,000.

<sup>c</sup> All other urban areas.

<sup>d</sup> Total urban population is agglomeration index for 2007 (14.2%) from Schmidt and Kedir (2009) multiplied by the 2005/06 population (2007 divided by 1.028).

Although Ethiopia's urbanization remains low in comparison to its neighbors, it is clear that urban growth has grown rapidly over the last 3 decades. Since the previous census in 1994, new cities were created, and economically viable cities have experienced large growth in population count and density. Currently, all of the cities with at least 50,000 people are geographically located in the four major regions (Amhara, Tigray, Oromia, and SNNPR), with the exception of Jijiga city in Somali region, which is in the northern area of Somali, bordering Oromia. Given that growth in the number of cities with at least 50,000 people mainly occurred in the four major regions, increased urbanization rates are primarily confined to these regions.

### ***Road Infrastructure and Improving Access to Markets***

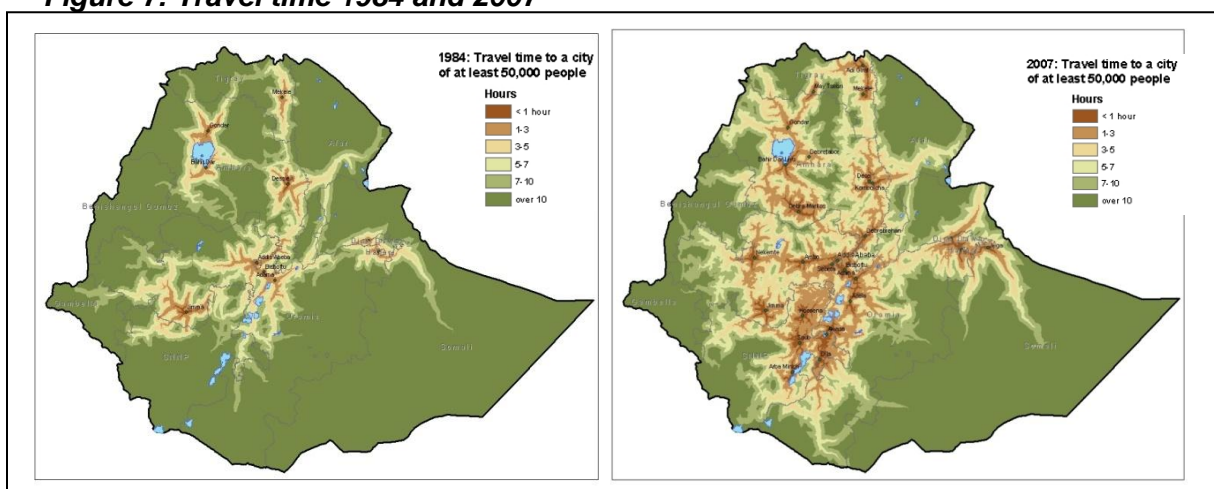
City creation and growth in Ethiopia is due in large part to improved transportation infrastructure between major cities in the highlands. Upgraded and maintained transportation corridors, as well as increased population density on these corridors, created urban areas that currently resemble networks in comparison to the isolated communities typical of the 1984 urban landscape. In 1984, Addis Ababa was primarily confined to its city administrative boundaries. By 1994, its urban network expanded, creating an urban corridor to the southeast, linking to Adama (previously Nazreth) - another city of 50,000 people in Oromia region. Population growth and improved transportation infrastructure in Shashamene town and Awasa town also facilitated linkages to form an urban network between Oromia and SNNP regions (see Schmidt

and Kedir, 2009). By 2007, urban linkages are clearly visible throughout Oromia, SNNPR, and Amhara regions. Underlying this growth is the improvement of transportation to market centers.

Given the limited infrastructure during the eighties and early nineties, the Ethiopian government prioritized transportation infrastructure investment in order to enhance linkages between major cities. A 10-year Road Sector Development Program was formulated to improve the quality and size of road infrastructure beginning in 1997. The construction and rehabilitation of roads outlined in the RSDP improved travel time within the country considerably. In 1984, 40 percent of the population was over 10 hours from a city of at least 50,000 and 82 percent were over 5 hours away from a large city (Figure 7). Only three regions in 1984 (as well as the urban administration areas) had populations that were within 1 hour of a large city, but only 2.5 to 4 percent of the population in these regions fell into this category. By 1994, 31 percent of total population was greater than 10 hours travel time (67 percent greater than 5 hours) from a major city and five of the nine administrative units had populations that could reach a city within an hour.

Since 1994, the Ethiopian government and international donors have continued to invest in key road infrastructure. Currently, only 3.2 percent of the population in Amhara, and 4.5 percent in SNNPR are more than 10 hours from a major city (Table 13 and Figure 7). SNNPR showed the most improvement in travel time, by connecting 45 percent more people to a city within 3 hours travel time. In Tigray and Oromia, 21 percent of the population improved market access from over 10 hours to between 3 and 10 hours travel time to a major city. At present, every region except Gambella has a city of at least 50,000 people, and many of these cities have expanded transportation networks in order to harness the potential of economic corridors between cities. Although urban centers are linking to other large cities through improved infrastructure, only 5 to 13 percent of the population in any region, including the major 4 regions where primary roads stretch between urban centers, are within one hour travel time to a city of at least 50,000.

**Figure 7: Travel time 1984 and 2007**



Source: Schmidt and Kedir, 2009

**Table 13: Percent population connected to a city of 50,000 people in 2007**

<i>Region</i>	<i>Access &lt; 1 hour</i>	<i>Access 1 - 3 hours</i>	<i>Access 3 - 5 hours</i>	<i>Access 5 - 10 hours</i>	<i>Access &gt; 10 hours</i>
<b>Tigray</b>	10.89	15.36	12.48	53.71	7.57
<b>Afar</b>	-	-	1.77	9.73	88.49
<b>Amhara</b>	5.05	22.72	37.06	31.98	3.20
<b>Oromia</b>	9.03	18.06	36.39	27.84	8.68
<b>Somali</b>	7.99	-	-	13.57	78.44
<b>Benishangul- Gumuz</b>	-	-	-	29.15	70.85
<b>SNNPR</b>	12.55	52.65	12.28	18.05	4.47
<b>Gambella</b>	-	-	-	-	100
<b>Harar</b>	100	-	-	-	-
<b>Addis Ababa</b>	100	-	-	-	-
<b>Dire Dawa</b>	100	-	-	-	-
<b>Ethiopia</b>	<b>12.48</b>	<b>23.56</b>	<b>25.73</b>	<b>26.03</b>	<b>12.20</b>

Source: Schmidt and Kedir, 2009

It is important to note, however, that population densities and quality/density of transportation infrastructure affect diverse regions in different manners. In Ethiopia, the central and peripheral regions represent two very different economic, geographic and demographic landscapes. While in the main central regions (Amhara, Oromia, SNNPR, and Tigray), higher population densities and a more integrated road network is characteristic of the economic landscape, in the peripheral regions, limited road access and dispersed settlements creates larger challenges for linking remote populations to the benefits of agglomeration economies. Improving transportation infrastructure along main access roads will benefit those already in densely populated areas, but maintaining and building select rural road infrastructure in areas with economic (agricultural) potential will be critical for poverty reduction and economic growth strategies in the more rural remote areas.

The upgrading of major roads not only facilitates access to urban areas for populations living on these corridors, but also continues to draw people to these networks in search of greater mobility and increased economic benefits. It is clear that the investments laid out in the 10-year Road Sector Development Program improved access to major cities and enhanced links between cities. Although investments in key transportation corridors are important for urban growth, the main beneficiaries of these investments tend to be people already living in more densely populated, connected regions. Peripheral areas with limited market access and lower population densities will remain left out of the urban economic linkages developing in the central

areas of the country. Between the years of 1994 and 2007, the government invested in several key gravel roads that improved access for rural populations on the periphery. The new gravel roads that were built between Harar and smaller towns in Somali region eased access constraints considerably. Earth roads that were rehabilitated also increased access in the far reaches of Somali region. Extended evaluation of the economic benefits of nurturing the nascent corridors in the pastoralist lowlands could be undertaken to understand the tradeoffs of investing in these areas.

## ***Other Infrastructure***

### **Electricity Generation**

Massive investments in hydro-electric power have revolutionized Ethiopia's economy and opened up the potential for significant increases in productivity and output. Ethiopia increased its electricity generating capacity 29-fold between the 1960s (65 megawatts average in 1960s) and 2011\* (1917 megawatts); an increase of 8.9 times on a per capita basis (Table 14 and Figure 8). The comparison with 1958 is even more striking, as there was essentially no electricity generation in Ethiopia at that time -- only 2.3 megawatts of diesel-powered capacity. The introduction of hydro-electric power in the subsequent decades, and especially the large surge in capacity since 2005, has raised electricity generating capacity 834-fold between 1958 and 2011, a 29-fold increase on a per capita basis.

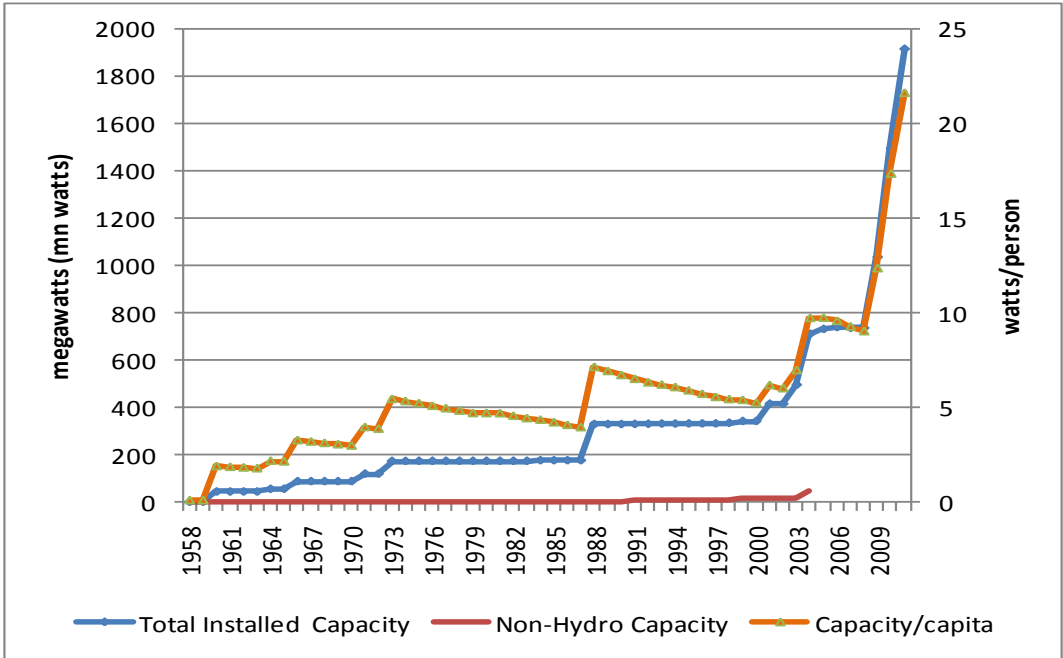
**Table 14: Electricity Generation Capacity 1958 to 2011\* in Ethiopia**

	<b>Capacity</b>	<b>Capacity</b>	<b>Capacity</b>	<b>Capacity</b>
	<b>Hydro-electric</b>	<b>Other</b>	<b>Total</b>	<b>Per capita</b>
	<b>(megawatts)</b>	<b>(megawatts)</b>	<b>(megawatts)</b>	<b>(watts/person)</b>
<b>1959</b>	0.0	2.3	2.3	0.1
<b>1960-69</b>	62.8	2.5	65.4	2.4
<b>1970-79</b>	152.9	3.0	155.9	4.7
<b>1980-89</b>	202.8	4.7	207.5	4.9
<b>1990-99</b>	325.2	9.0	334.2	6.0
<b>2000-04</b>	452.6	25.0	477.6	6.9
<b>2005-09</b>	747.2	50.2	797.4	10.0
<b>2010</b>	1447.5	50.2	1497.7	17.4
<b>2011*</b>	1867.5	50.2	1917.7	21.7

**Source:** Calculated using CSA Survey of Manufacturing (various years) and Ethiopian Electric Power Corporation data.

**Notes:** Figures for 2008-10 based on additional capacity from Tekeze I (300 Mw) in 2009; and Tana Beles (460 Mw) in 2010. 2011 figures is 2010 figure plus Gile Gibe II (420 Mw) for which the tunnel collapsed in December, 2009.

**Figure 8: Ethiopia: Electricity Generation Capacity 1958 to 2011\* in Ethiopia**



**Source:** Calculated using CSA Survey of Manufacturing (various years) and Ethiopian Electric Power Corporation data.  
**Notes:** Figures for 2008-10 based on additional capacity from Tekeze I (300 Mw) in 2009; and Tana Beles (460 Mw) in 2010. 2011 figures is 2010 figure plus Gile Gibe II (420 Mw) for which the tunnel collapsed in December, 2009.

Actual electricity use is generally only about 35 to 45 percent of theoretical generating capacity, however, large because through much of the year, there is insufficient water behind the hydro-electric power dams for full-scale operation. Domestic use accounted for 30 percent of total use in 2006/07; commercial and industrial use accounted for 20 and 28 percent, respectively (Table 15). Overall, electricity use grew at an average rate of 12.5 percent per year from 2002/03 to 2006/07, with the highest growth rate for street lighting (27. 1 percent per year). In 2006/07, the average prices of electricity for industrial and commercial use were 61 and 19 percent higher, respectively, than the price for domestic use.

Some survey evidence suggests that the productivity effects of electrification could be very large, particularly, as measured by output per worker. A 2008 survey data of small-scale handlooms in Addis Ababa and SNNPR (Ayele et al., 2009) indicates that productivity per worker is about 40 percent higher for electrified versus non-electrified firms in SNNPR. This productivity effect is achieved in large part because In towns with electricity access, producers work longer hours and firms share workspaces with electric lights at lower rental cost. Workers in non-electrified rural villages on average worked only 7.2 hours per day, whereas their counterparts in other electrified (but rural) villages worked 10.7 hours per day.

**Table 15: Ethiopia: Electricity Use, 2002/03 to 2006/07**

	Domestic	Commercial	Street Light	Industrial	Subtotal	Non-Sales	Total
<b>Usage (mn KWH)</b>							
<b>2002/03</b>	600	402	17	688	1,707	357	2,064
<b>2003/04</b>	654	455	22	716	1,847	470	2,316
<b>2004/05</b>	726	521	29	793	2,069	519	2,589
<b>2005/06</b>	786	573	33	970	2,361	535	2,897
<b>2006/07</b>	1,002	665	46	924	2,637	684	3,321
<b>Share of Total:</b>							
<b>2006/07</b>	30.2%	20.0%	1.4%	27.8%	79.4%	20.6%	100.0%
<b>Growth rate:</b>							
<b>2002/03 - 2006/07</b>	12.9%	13.2%	27.1%	9.3%	11.8%	15.4%	12.5%
<b>Ave. Price (2006/07)</b>							
<b>(birr/kw-hour)</b>	0.413	0.665	0.477	0.491	0.505	-	-

Source: CSA Survey of Manufacturing (various years); authors' calculations.

### Expansion of Telephone Services

Not only is Ethiopia increasing physical infrastructure such as roads and electricity lines, but communication infrastructure is expanding as well. In 2003, 405,000 fixed telephone lines were in place, and only 50,000 cell phone subscriptions existed throughout the country (Table 16, Figure 9). By 2008, cell phone subscription catapulted to 3.16 million subscribers and fixed telephone lines more than doubled. Infrastructure plans report that cell phone subscriptions more than doubled by 2009, and reach as many as 9.9 million users by 2010. Fixed line infrastructure is projected to grow as well, but at a slower pace, quadrupling by 2010 from 2008 levels.

While communication technology continues to expand at a rapid pace within Ethiopia, when comparing rates of cellular subscription to Sub Saharan Africa, Ethiopia falls behind. The share of population within a connected area in Ethiopia is 5.3 percent, in contrast to 32.5 percent of the population in Africa with cellular subscriptions in connected areas. Total cell phone subscribers in Africa amount to 245.6 million people, while a total of approximately 3.16 Ethiopians benefit from a cellular subscription.

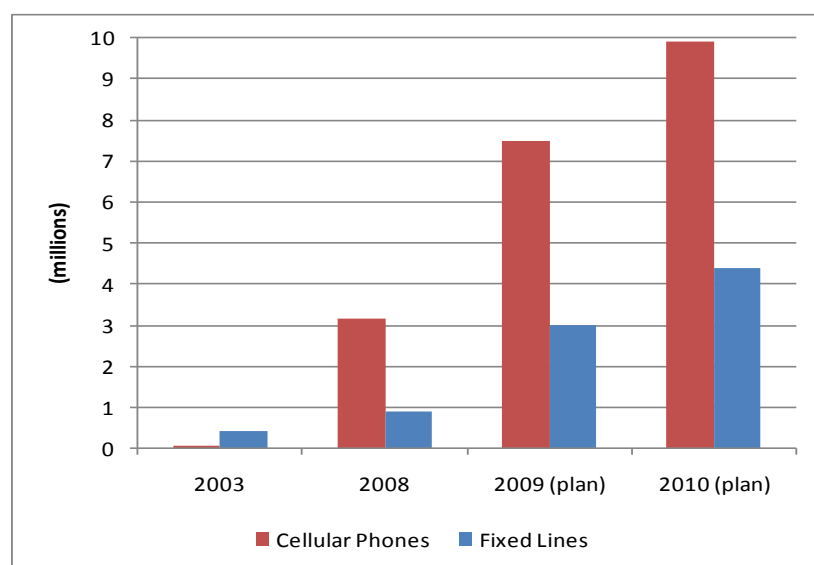


**Table 16: Fixed Line and Cellular Telephones 2003 to 2010 in Ethiopia**

	2003	2008	2009 (plan)	2010 (plan)
<b>Main (fixed) telephone lines</b>				
<b>Ethiopia</b>	405	909	3,000	4,400
<b>Africa</b>	9,553	10,617	---	---
<b>Mobile cellular subscriptions ('000s)</b>				
<b>Ethiopia</b>	51	3,168	7,500	9,900
<b>Africa</b>	35,251	245,608	---	---
<b>Mobile cellular subscriptions (per 100 people)</b>				
<b>Ethiopia (share of total population)</b>	0.1	3.9	9.0	11.5
<b>Ethiopia (share in connected area)</b>	0.1	5.3	---	---
<b>Africa (share in connected area)</b>	3.7	32.5	---	---

Sources: ITU (2009). *Information Society Statistical Profiles 2009 - Africa*, International Telecommunication Union (ITU).; Ethiopian Telecommunications Corporation (ETC). ETC Strategic Plan. <http://www.ethionet.et/aboutus/visionmission.html>

**Figure 9: Fixed Line and Cellular Telephones 2003 to 2010 in Ethiopia**



Sources: ITU (2009). *Information Society Statistical Profiles 2009 - Africa*, International Telecommunication Union (ITU).; Ethiopian Telecommunications Corporation (ETC). ETC Strategic Plan. <http://www.ethionet.et/aboutus/visionmission.html>

### **Human Capital**

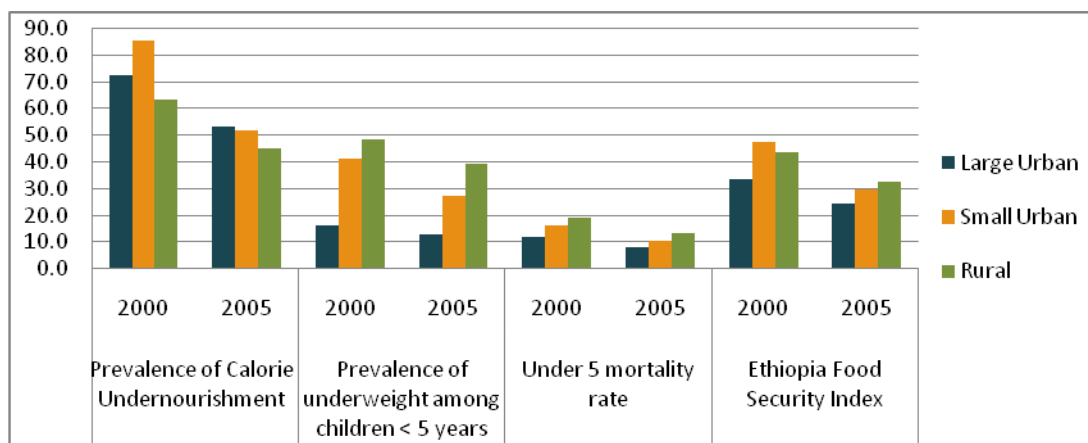
Access to sufficient food and nutrients is essential for household welfare, as well as for accomplishing other development objectives. Households with insufficient access to food often face other challenges related to food insecurity including poor health and declines in

productivity. Recognizing the various dimensions of food insecurity, Schmidt and Dorosh (2009) calculated an Ethiopian Regional Hunger Index, which equally weights the proportion of people who are food energy deficient, the prevalence of underweight children under the age of five, and the mortality rate among children less than five years of age.

Findings indicate that between 1999-2000 and 2004-05, there were substantial improvements in both urban and rural areas of index variables. In large urban areas, defined as Addis Ababa, Dire Dawa and Harari (the main market centers in the country), the undernourishment rate fell 20 percentage points, while the rural areas decreased from 63 percent to 45 percent undernourished. In 2000, the undernourishment rate among small towns (all areas defined as urban in the HICE except Addis Ababa, Dire Dawa and Harari) was 85 percent; this rate fell an impressive 34 percentage points between 2000 and 2005.

Although urban areas have a higher prevalence of undernourishment in 2005, rural areas have a higher proportion of underweight children and child mortality. This may be attributable to the limited access of clean water and healthcare facilities in rural areas. A major contributing factor to child underweight and mortality rates in Ethiopia is pneumonia and diarrhea contraction among children. Several studies of food insecurity coping strategies in rural Ethiopia found that parents usually protect their children from serious calorie undernourishment in rural areas, but underweight measures persist due to continual contraction of diarrheal diseases and limited access to healthcare centers. Given rapid agriculture-led economic growth between 2004-05 and 2008-09, it is expected that when new household survey data is available, these indices will show improvement.

**Figure 10: Ethiopia Hunger Index: 2000 - 2005**



Source: Index numbers calculated from Household Income Consumption Expenditure Survey, and the Demographic and Health Survey from 1999/2000 and 2004/05

\*The calculated calorie-based undernutrition for Ethiopia is based on the undernourishment cutoff of 1,990 kilocalories per day;

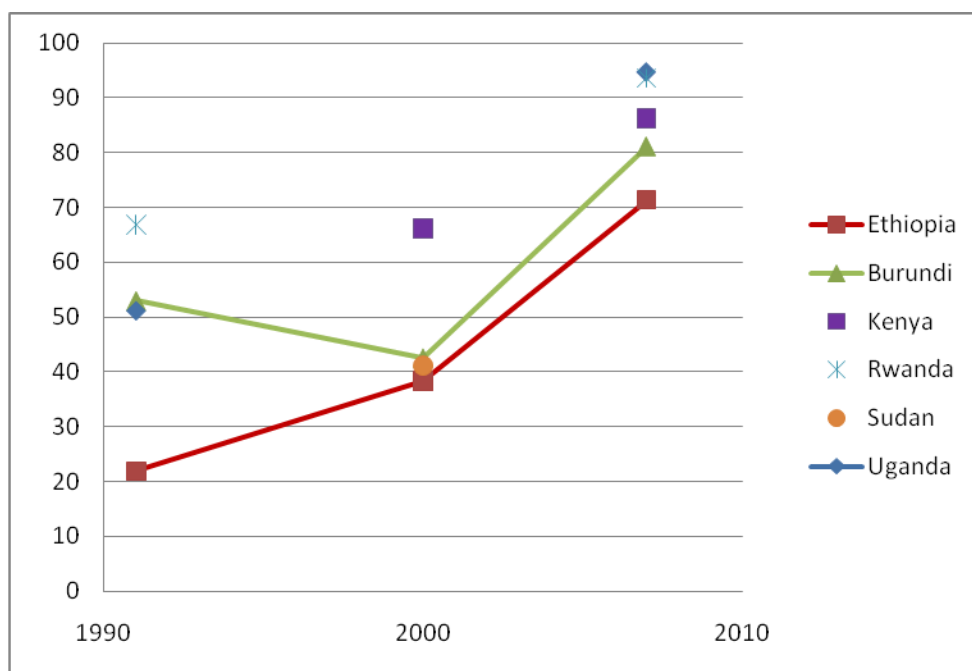
\*\*Proportion of underweight children less than five years of age is calculated as a weight-for-age was less than two standard deviations

Education has also expanded rapidly in Ethiopia. In particular, net primary school enrollment rates in Ethiopia have shown dramatic improvement in the past two decades, but are still low in comparison with other countries in East Africa. In 1991 only 22 percent of children of primary school age were enrolled in school (Table 17 and Figure 11). By 2007, this figure had more than tripled to 71 percent. Nonetheless, net primary school enrollment remains significantly below that of Kenya (86 percent), Rwanda (94 percent) and Uganda (95 percent).

**Table 17: Net Primary School Enrollment in East African Countries**

	All Children			Girls		
	1991	2000	2007	1991	2000	2007
<b>Ethiopia</b>	21.9	38.4	71.4	18.8	32.5	68.5
<b>Burundi</b>	53	42.6	81.2	48.8	38.8	80.3
<b>Kenya</b>	---	66.2	86.3	---	67.1	86.3
<b>Rwanda</b>	66.9	---	93.6	65	---	94.9
<b>Sudan</b>	---	41.2	---	---	37.2	---
<b>Uganda</b>	51.1	0	94.6	46.2	0	96.1

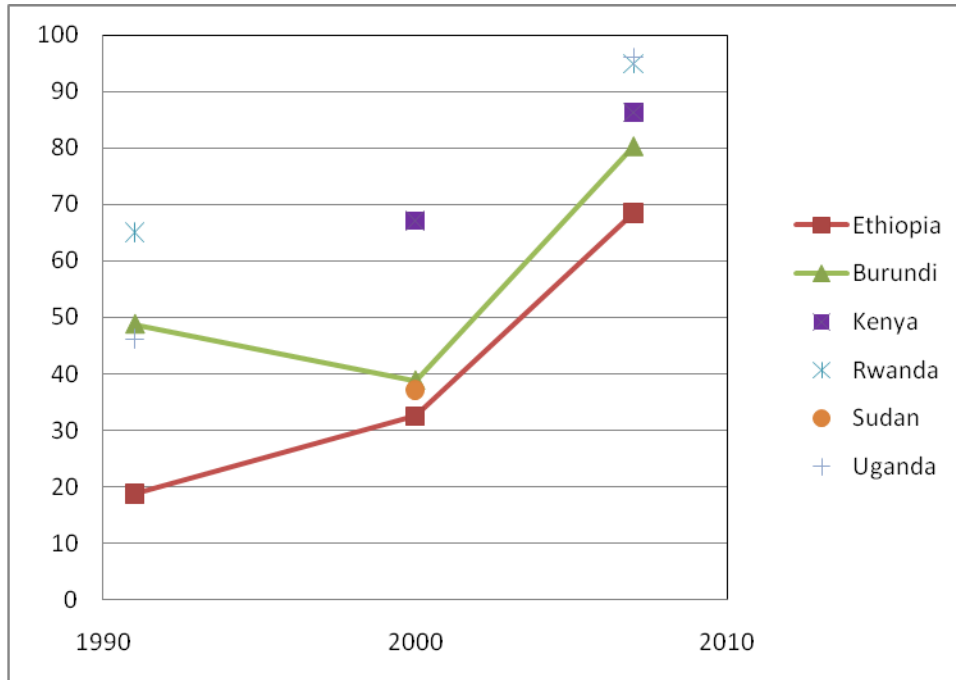
**Figure 11: Net Primary School Enrollment in East African Countries (All Children)**



Source: World Bank, World Development Indicators (2010).

There is little evidence of a significant gender gap in net primary school enrollment, as net enrollment rates for girls were only slightly below the overall average in both 1991 (18.8 percent for girls and 21.9 percent for all children) and in 2007 (68.5 percent for girls and 71.4 percent for all children), (Figure 12). This increase in primary school enrollment suggests that the level of human capital is rising, boding well for increased labor productivity and health outcomes (education, particularly female education, is associated with better maternal and child nutrition, and lower mortality rates).

**Figure 12: Net Primary School Enrollment in East African Countries (Girls Only)**



Source: World Bank, World Development Indicators (2010)

## 5. TRENDS IN RURAL AND URBAN INCOMES AND POVERTY

Poverty rates in rural areas have been consistently higher than those in urban Ethiopia, though the gap has narrowed. Data from the nationally representative Household Income, Consumption and Expenditure (HICES) survey show that rural poverty fell steadily from 47.5 percent in 1995/96 to 45.4 percent in 1999/2000, and then more steeply to 39.3 percent in 2004/05 (Table 18 and Figure 13). During this same period, urban poverty actually increased, from 33.2 percent in 1995/96 to 36.9 percent in 1999/2000, before falling slightly to 35.1 percent in 2004/05. Given that the rural population accounted for about 85 percent of national population in this period, national poverty rates closely tracked rural poverty rates, falling from 45.5 percent in 1995/96 to 38.7 percent in 2004/05. Unfortunately, no nationally representative household survey data is available to determine whether poverty rates have continued to decline, though the substantial reported growth in agricultural production from 2004/05 to 2009/10 would suggest that rural incomes would, on average, have risen.

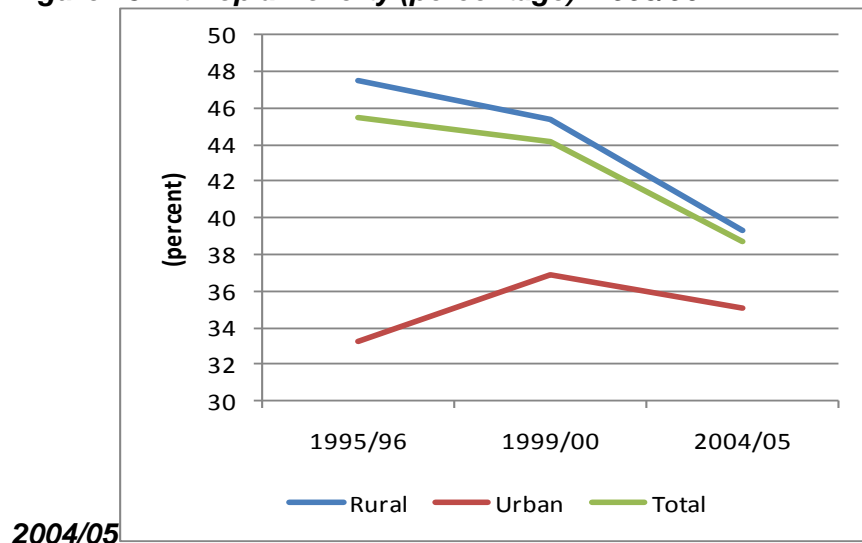
**Table 18: Ethiopia Poverty Rates by Rural and Urban**

	1995/96			1999/2000			2004/05		
	P0	P1	P2	P0	P1	P2	P0	P1	P2
Rural	47.5	13.4	5.3	45.4	12.2	4.6	39.3	8.5	2.7
Urban	33.2	9.9	4.1	36.9	10.1	3.9	35.1	7.7	2.6
National	45.5	12.9	5.1	44.2	11.9	4.5	38.7	8.3	2.7

Note: P0 denotes % of population below the poverty line; P1 measures the average depth of poverty; P2 is a measure of the severity of poverty.

Source: Ethiopia Central Statistics Agency, Household Income, Consumption and Expenditure Survey (HICES) data.

**Figure 13: Ethiopia Poverty (percentage): 1995/96 –**



**2004/05**

Source: Ethiopia Central Statistics Agency, Household Income, Consumption and Expenditure Survey (HICES) data.

Levels and trends in poverty rates vary substantially across region (Table 19). Rural poverty declined significantly between 1995/96 and 2004/05 in three of the largest regions of Ethiopia – SNNPR (-32.4 percent), Amhara (-28.8 percent), Tigray (-11.9 percent), but increased in Oromiya (by 7.3 percent). Likewise, poverty rose in Addis Ababa by 8.8 percent. These regional differences in poverty trends are likely due in part to differences in agro-ecologies, weather (especially droughts) and degree of access to roads and other infrastructure.

**Table 19: Trends in poverty headcount indices and changes in poverty headcount indices, by region, 1995/96-2004/05**

Region	1995/96			1999/2000			2004/05			Change (%) between 1995/96 - 2004/05		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	0.579	0.457	0.561	0.616	0.607	0.614	0.51	0.367	0.485	-11.9	-19.7	-13.6
Afar	0.518	-	0.331	0.68	0.268	0.56	0.429	0.279	0.366	-17.2	-	-
Amhara	0.567	0.373	0.543	0.429	0.311	0.418	0.404	0.378	0.401	-28.8	1.3	-26.1
Oromiya	0.347	0.276	0.34	0.404	0.359	0.399	0.372	0.346	0.37	7.3	25.2	8.7
Somale	0.346	-	0.309	0.441	0.261	0.379	0.452	0.353	0.419	30.5	-	-
Benishangul-Gumuz	0.476	0.345	0.468	0.558	0.289	0.54	0.458	0.345	0.445	-3.8	-0.1	-4.9
SNNP	0.565	0.459	0.558	0.517	0.402	0.509	0.382	0.383	0.382	-32.4	-16.5	-31.5
Harari	0.133	0.291	0.22	0.149	0.35	0.258	0.206	0.326	0.27	54.5	12.1	22.9
Addis Ababa	0.404	0.3	0.302	0.271	0.362	0.361	0.299	0.326	0.325	-26	8.6	7.7
Dire Dawa	0.366	0.246	0.295	0.332	0.331	0.331	0.398	0.329	0.352	8.8	33.6	19.2
Total	0.475	0.332	0.455	0.454	0.369	0.442	0.393	0.351	0.387	-17.2	5.8	-14.9

Source: Woldehanna, T.; J. Hoddinott, S. Dercon (2008)

CGE simulations calibrated to growth rates of agricultural production and changes in value added of industrial and service sectors from 2004/05 to 2008/09, suggest that the output and income gains reported in the national accounts data for this period would likely have significantly reduced poverty in this period (Dorosh and Thurlow, 2009). In the simulation, national poverty rates fall from 40 percent to 36 percent. If these growth rates continued, national poverty rates are projected to fall to 23 percent by 2015.

Data from the 15 sites across Ethiopia from the Ethiopian Rural Household Survey (ERHS) of about 1500 households also shed some light on recent poverty trends. Rural households in the sample generally perceived themselves to be better off in 2009 than in 1994. For example, in 1994, 41 percent of households considered themselves to be “destitute” or “poor”, compared to only 21 percent in 2004 and 13 percent in 2009 (Hoddinott et al., 2010). Conversely, the percentage of households reporting themselves to be “comfortable”, “rich” or “very rich” rose from slightly over one-fourth in 1994 to more than 40 percent in 2009. Given the small sample size, however, firm conclusions cannot be drawn.

## 6. RURAL-URBAN MIGRATION

The interactions between migration, poverty, and changes in income distribution are relevant to policymakers, and not surprisingly, have been well studied in the past (Lucas, 2000; de Haan, 1999; Stark, Taylor, and Yitzhaki, 1986; Lipton, 1980). Studies have shown that migration can improve human capital formation in several contexts (e.g., Yang, 2008; Acosta, 2006; Mansuri, 2006a; Cox-Edwards and Ureta, 2003; Hanson and Woodruff, 2003). In theory, to maximize growth, resources should move freely so that the marginal returns are equalized between sectors and regions. Initially, increases in agricultural productivity may precede the growth of urban settlements. But as new innovations take place in the urban sector, urban labor productivity and wages rise, making migration from the rural to urban sector attractive. At the same time, urban development may also improve access to capital, inducing further mechanization or other innovations relevant to agricultural production. As a result, agricultural productivity grows, narrowing the productivity and income gaps between rural and urban areas. Nonetheless, to the extent that urban productivity and incomes rise relative to rural productivity and incomes, there are incentives for rural labor to migrate to the urban sector. This process of technological innovation and movement of factors (labor and capital) is a major source of economic growth and development.

Ethiopia has a mixed history of internal migration and population redistribution. In previous decades, migration was shaped by political and economic transitions and instability. Political ideals transformed from the 1970's to current day (socialist to a market-oriented economy), as well as civil war and famine determined flow and direction of internal migration (Mberu, 2006; Kiros and White, 2004; Berhanu and White, 2000; Kibreab, 1996; Kloos, 1992; Clapham, 1991; Kidane, 1989). During the Derge regime, the country suffered three major droughts (1977-78, 1987-1988, and 1993-1994) and a national famine in 1984-1985 (Webb and von Braun, 1994). In response to these environmental catastrophes, the Derge resettled an estimated 600,000 rural farmers in drought-prone areas in the north to more agriculturally productive areas in the west (Kloos, 1990). In addition to resettlement plans, land redistributions were frequent under to Derge, with some locales experiencing as many as three rounds over ten to twelve years (Rahmato, 2008).

Repeated droughts and an overall decline in rural and urban welfare led to a toppling of the Derge, and the Ethiopian People's Revolutionary Democratic Front (and current government) came to power promoting a more market-oriented economy. In doing so, they also reshaped the country into ethnic-based territorial units. This re-carving of Ethiopia's administrative geography had an effect on the villagers that were resettled during the Derge regime, in which many households returned to their region of ethnic origin in the north. Taking into account the impact of famine, political survival strategies, and strong cultural identities, population

movement (both rural-rural and rural-urban migration) in Ethiopia has been profound. Although substantial, migration during the past may have been prompted by economic and social calamity, rather than spurred by economic diversification and opportunity.

Thus far, urbanization and migration in Ethiopia may remain constrained by lack of labor mobility. Slow urban growth rates may be in part due to lack of land tenure laws and transparent rural land rights. Institutions that secure land rights lay the foundation for incentivizing rural populations to seek non-farm opportunities in order to supplement agricultural incomes. In Ethiopia, there are only limited opportunities for transfer of land rights in rural areas. Land is nationally owned, where local governments are able to reallocate land periodically, but most households maintain the use right of their land allotment by continuing to farm, providing adequate care to the land, and remaining a resident in the kebele (Rahmato, 2008). Recent policies have promoted household land security by permitting land transfers to family members; transfers outside of the family are still rare. Earlier work in Ethiopia demonstrates that improvements in land security through land transfer rights has a positive impact on productivity-enhancing investment (Deininger and Jin, 2006; Dercon and Ayalew, 2007). Similar impacts on the household allocation of labor off of the farm are anticipated, as individuals can secure the land by transferring it to other family members and explore alternative employment opportunities outside of the village.

De Brauw and Mueller (2010) examined effects of land transfer rights on household labor decisions. Empirical estimates suggest that improvements in land transfer rights will increase migration behavior. The government recently attempted to improve land security more formally through various land registration and certification programs. According to Rahmato (2008), over half of rural households have their land registered and possess user certificates. Although land is now being registered and certified, landholders in Ethiopia are not allowed to sell, exchange, or mortgage land, and failure to meet any of the obligations<sup>15</sup> set forth by Article 40 of the constitution would result in forfeiture of one's land rights.

Not only the lack of land transfer rights and clear land certification / ownership may be inhibiting rural – urban migration, but migrants also face unclear and restrictive policies in urban areas once they have migrated. A migrant is required to live 6 months in the urban area prior to registering their new address, and requesting a new identification card that reflects his/her residence. Many public services are tied to this registration and identification; thus the migrant must forego these services for 6 months while establishing permanent living status in the city. After the migrant has completed 6 months of residence, it is possible that he/she will still be unable to apply for an identification card because applicants are restricted to individuals that own a property in the urban area (and have a current address). Several conflicting factors are

---

<sup>15</sup> Obligations include: 1) landholder is engaged in farming for his/her livelihood; 2) the landholder is resident of the given rural kebele; 3) the land is farmed on a regular bases and not left unused; and 4) the holder takes "proper care" of holdings – "proper care" is not defined in the documents.



at stake here. First, if a household is renting a room to a migrant that they do not have previous social ties (familial or friendship), they are not inclined to report that they are renting a room in their own house because this action has tax implications for the house owner. Meanwhile, the migrant is unable to petition for him/herself because the majority migrants are unable to buy a property within the first 6 months of migrating. Thus social networks are exceedingly important in this context because the migrant, prior to migrating, would need to assure that they could obtain a residency / identification card via a social tie (that owned a property) within the city that could request identification on behalf of the migrant.

In addition to land transfer rights, links between migration and household welfare in Ethiopia have been recently studied by Mberu (2006). Using survey data from the major four regions of the country, Mberu examined the association between permanent versus temporary migration and underlying household living conditions. The study found that permanent migrants tended to migrate to non-agricultural sector work. Similarly, temporary migrants (migrants that periodically move back and forth between origin and destination) sought off-farm income, but were also more inclined to work as teachers in higher education institutions. Education levels of permanent migrants were quite low (26 percent had a primary education and 36 percent had received no formal education) in comparison to temporary migrants (70 percent had at least a secondary education), but both sets of migrants identified a diversified income outside of the agricultural sector as a key component to improved living conditions.

When assessing overall economic interactions and incentives to migrate, it is clear that certain economic activities require spatially dispersed production such as agriculture, mining, lumbering, and tourism services, while others benefit from spatial concentration. When labor mobility is not hindered, the manufacturing sector may seek benefits derived from firm level economies of scale and concentrate production in specific urban locations, offering greater access to consumers and input suppliers (Renkow, 2007). Since urban workers require food and raw materials from rural areas and since rural workers require machinery, fuel and clothing from urban factories, rural and urban economies must interact. From a policy perspective, facilitating these interactions by securing land tenure, providing necessary public services to improve income earning opportunities in the rural areas (education and health), and building transportation and communication links between rural and urban areas is essential for economic growth.

## 7. PUBLIC INVESTMENT POLICIES

Poverty reduction strategies in Ethiopia have relied primarily on agricultural and rural development investments. This is due to the overwhelming numbers of inhabitants that derive their livelihoods from rural activities. In 2006/07, output of agricultural sectors (much of which is concentrated in Ethiopia's urban areas) contributed 46 percent to GDP whereas agricultural sectors contributed 15 percent in SSA as a whole, and 25 percent of GDP in low income countries in 2005 (Arndt et al. 2009, MoFED 2005). Although the majority of the population lives in rural areas, the government of Ethiopia has identified the need to not only enhance rural – urban linkages, but also address the overwhelming need for urban planning and infrastructure improvement. The Ministry of Planning and Economic Development of Ethiopia contends that “while the focus of much pro-poor development must inevitably remain rural-based, urban development will play a more central role in the next phase of Ethiopia's development...”(2006).

The Ministry of Finance and Economic Development (MoFED) outlined the challenges facing Ethiopia's urban centers. According to MoFED, 70% of the urban population is considered slum dwellers on the basis of quality of housing, overcrowded living spaces, access to and quality of infrastructure, and security of tenure. Poverty levels in large cities are especially acute. Sixty percent of residents in Addis Ababa are estimated to be living below the poverty line (Meheret 2001). Overall, while rural poverty rates have dropped from 48 to 39 percent from 1995 to 2005, urban poverty rates have increased from 33 to 35 percent over the same period (Hoddinott, 2010). These figures suggest that although investment in agriculture remains a priority, investments in urban areas may need to be re-evaluated to address underperformance in poverty indicators in the cities.

It is against this setting that the Government of Ethiopia drafted the National Urban Development Policy (NUDP) which became operational in 2005. Two principal packages make up this policy; the Urban Development Package and the Urban Good Governance Package. A set of initiatives and targeted programs were also outlined under the NUDP which include: strengthening of urban-rural and urban-urban linkages for sustainable development; expanding growth opportunities through balanced development of urban centres; reducing urban poverty and unemployment; increasing participation of the community in different aspects of urban development; constructing strong partnerships with the private sector; and creating more decentralized urban governance. The NUDP highlights the need for expansion of small and micro enterprises in urban areas, construction of low cost houses, and improved access to land for private sector investments and urban residents including the poor and expansion of social services (MoWUD, 2006).

In addition to the NUDP, the PASDEP also outlines an urban development strategy with four main pillars. These pillars include: reducing urban unemployment to less than 20%, developing

integrated housing in order to reduce slums in Ethiopia's main cities by 50%, improving access to urban land infrastructure and services, and promoting urban-rural and urban-urban linkages. As a strategy to promote rural-urban linkages, the PASDEP outlined small town development as a key instrument to enhance forward and backward linkages. The target includes developing 600 small towns (towns with less than 20,000 people) between 2005/06 and 2009/10.

Of course, rapid urbanization does not necessarily produce growth or improved household welfare. In the absence of sound overall macro-economic policy, sufficient investments in infrastructure, adequate provision of social services and well-functioning institutions (including public security and judicial institutions), and rapid rural-urban migration can result in sprawling slums of underemployed poor people. However, slow urbanization in Ethiopia over the last several decades is somewhat puzzling, when seen in light of other recent developments in the country. Since the fall of the Derge, a federal government structure was put in place that has invested in large public infrastructure, (primarily roads, but also on electricity and telecommunications) during the last ten years which raised rural-urban connectivity and expanded the educational system. In addition to improvements in infrastructure and education, the government has sought a more liberal policy towards markets and resource flows (Rashid, 2009), and acknowledges the significance of urbanization and rural-urban linkages for economic growth and poverty reduction.

Overall, the allocation of government spending between rural and urban sectors has reflected the spending priorities of the Agricultural Development Led Industrialization policy. Defining rural expenditures as those on agriculture and road construction outside of Addis Ababa, and urban expenditures as those on urban development and all Addis Ababa expenditures, total identifiable urban expenditures in 2007/08 were 7.5 billion birr, 11.6 percent of total spending (Table 20). Total identifiable rural expenditures were 18.6 billion birr, 28.8 percent. "Other" expenditures, including all other categories of expenditures (e.g. education, health, defense, etc.) accounted for the remaining 60 percent of spending.<sup>16</sup>

Over time, government spending has shifted towards investment. Capital (investment) expenditures rose rapidly between 1999/00 and 2007/08 for both rural and urban investments, as well as for "other" investments (Figure 14). With recurrent expenditures actually declining in real terms, the share of capital expenditures in the overall budget rose from 21.0 percent to 51.2 percent.

---

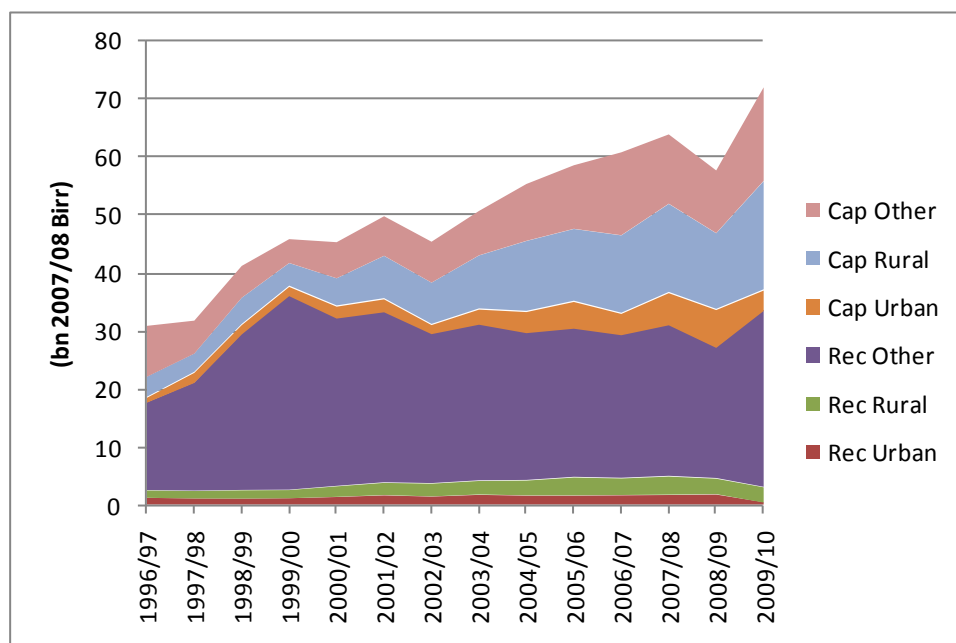
<sup>16</sup> Further analysis could be undertaken to determine the rural-urban split of some of these categories (particularly education and health).

**Table 20: Government of Ethiopia Expenditures (Rural, Urban and Other), 1999/00 and 2007/08**

	1999/00 (bn 07/08 birr)	1999/00 (share)	2007/08 (bn 07/08 birr)	2007/08 (share)	Growth Rate
<b>Recurrent</b>	36.1	79.0%	31.1	48.8%	-7.2%
<b>Urban</b>	1.2	2.7%	1.9	2.9%	22.9%
<b>Rural</b>	1.4	3.1%	3.2	5.0%	49.0%
<b>Other</b>	33.5	73.2%	26.0	40.8%	-11.8%
<b>Capital</b>	9.6	21.0%	32.7	51.2%	84.6%
<b>Urban</b>	1.6	3.5%	5.6	8.7%	86.8%
<b>Rural</b>	3.9	8.5%	15.2	23.8%	97.5%
<b>Other</b>	4.1	9.0%	11.9	18.7%	70.5%
<b>Total</b>	45.7	100.0%	63.7	100.0%	18.1%

**Notes:** Urban includes urban development and all Addis Ababa expenditures.  
Rural includes agriculture and road construction outside of Addis Ababa. 2004/05 to 2008/09 are "pre-actual" figures.

**Figure 14: Government of Ethiopia Expenditures (Rural, Urban and Other), 1996/97 to 2007/08**



**Notes:** Urban includes urban development and all Addis Ababa expenditures.  
Rural includes agriculture and road construction outside of Addis Ababa.  
2004/05 to 2008/09 are "pre-actual" figures;

Although Ethiopia is developing the infrastructure, human capital, and market processes to spur agglomeration economies, urbanization and industrialization is unachievable without sufficient increases in agricultural productivity. Agricultural surplus at the household level is critical to

enabling farmers to release family labor to staff growing factories in the cities, while also maintaining food production at home (Rondinelli, 1988). Strong agricultural policies that promote efficient and productive farming practices and hence income earning potentials of farmers in the rural areas are key to promoting urbanization. Ethiopia has underlined the importance of Agricultural Development Led Industrialization (ADLI) through initiatives such as the Rural Development Policies and Strategies (RDPS), Food Security Strategy, Food Security Programme, Productive Safety Net Program, Participatory Demonstration and Training Extension System (PADETES), Sasakawa Global 2000, and the National Extension Intervention Program (NEIP).

The RDPS, as well as the extension and food security programs, aims at providing smallholder farmers with agricultural inputs to promote more intensive production strategies, while also providing drought prone areas with cash and/or food transfers in order to prevent asset depletion during hunger periods. Specifically, different agricultural development packages aim to provide: improved seeds and fertilizers, enhanced farm implements and pesticides; expanded extension services; construction of small scale irrigation schemes; minimization of post-harvest losses; and development of livestock resources through improved feed base and veterinary services. Furthermore, RDPS aims to educate rural inhabitants on proper use of land, expand rural infrastructure (health, education, access to safe water, and rural roads), organize accessible rural financial systems for smallholders, and develop and strengthen rural institutions.

Although the RDPS provides input packages to enhance production, the institutional arrangement for the distribution of agricultural inputs and credit may be hindering effective distribution mechanisms. While retail price of fertilizer is liberalized, the institutional arrangement for delivery is controlled by the regional governments and input enterprises. Credit for fertilizer and delivery of fertilizer are usually organized under one transaction (Dercon et al. 2009). Regardless of the size of the harvest (even where there is crop failure) the credit has to be paid and there is no insurance mechanism or provision for postponement. Coupled with the devaluation and removal of subsidy, this has in fact exposed smallholders to unfavorable relative price movement, high rise in prices of fertilizer relative to crops' prices, and increased the risk involved in using fertilizer (Getnet, 2010).

In addition to agricultural input packages and extension and food security programs, an important policy reform needed in order to assure greater labor mobility and enhanced rural-urban linkages is the land tenure and certification program. In order to address uncertainties of land rights, the government set forth a land registration and certification program in 2004/05. Even with this new system, a work commissioned by USAID in 2004 found that rural landholders do not perceive a strong system for tenure rights and contend that although they have land certification papers, they are not protected from government expropriation and periodic land redistribution. Given continued uncertainty, the land certification program has

shown little effect at incentivizing agricultural investment and migration thus far. A study completed by Deininger et al. (2006) assessed farmers perception of land rights and found that most farmers would prefer higher levels of land tenure security. They found that a large share of farmers would change their farming practices and undertake more investments if more tenure security was provided (Table 21). Urbanization requires increases in agricultural production as well as labor mobility to seek opportunities of income diversification. If farmers perceive disincentives to migration, they will not respond to economic forces, and efficient gains from greater economic and geographic interaction are lost.

**Table 21: Subjective land rights, tenure security, and investment**

	Region					
	National	Tigray	Amhara	Oromia	SNNPR	Others
<b>Land tenure security</b>						
Woreda had redistribution since 1990	9%	14%	18%	6%	4%	4%
Affected by redistribution since 1990	8%	17%	20%	4%	2%	4%
Expects redistribution next 5 years	9%	10%	10%	10%	6%	12%
Expects no redistribution	27%	42%	26%	23%	30%	37%
Has land conflict with authorities	23%	23%	23%	26%	14%	22%
Perceives right to rent/sharecrop	91%	98%	89%	92%	85%	95%
Perceives right to mortgage/inherit	23%	18%	32%	18%	26%	35%
Perceives right to sell	4%	1%	1%	4%	3%	12%
<b>Land tenure preferences</b>						
Prefers higher tenure security	48%	61%	43%	51%	41%	48%
Prefers private ownership	31%	22%	38%	31%	30%	26%
Prefers redistribution	4%	10%	4%	3%	5%	4%
Would invest if land privatized	47%	29%	47%	49%	44%	68%
• build terraces	38%	24%	41%	39%	35%	56%
• plant trees	13%	12%	19%	14%	7%	8%
• adopt other improvements	11%	6%	10%	12%	15%	11%
<b>Actual investment since 1999</b>						
Built or maintained terraces	47%	81%	88%	34%	31%	20%
Planted trees	39%	50%	43%	41%	36%	8%

Source: Deininger et al. (2006) and EEA/EEPRI (2001)

Looking forward, it is important that Ethiopia set in place the policies needed to incentivize city growth while also supporting the agricultural backbone of the Ethiopian economy. If designed and managed properly, Ethiopia has the opportunity to further develop market centers and cities that provide effective linkages to rural areas and vice versa. Within large cities, demands of good urban governance and accountability, as well as efficient and effective mechanisms for providing key services and infrastructure will be necessary in order to reduce urban poverty. Rural areas will need consistent basic service provision, as well as secure land rights in order to incentivize more efficient and effective linkages to markets. By developing a more holistic strategy that takes into account both the need for rural capacity building and income portfolio

diversification, as well as urban development and demand-supply linkages, it is expected that many of the demands echoing from Ethiopia's cities and hinterlands could be recognized.

## 8. CONCLUDING OBSERVATIONS

Population growth in rural areas and insufficient demand for agricultural goods in urban areas continues to pressure economic transformations within the country. Increasing land pressure (within the context of already small land holdings), as well as environmental degradation will limit and diminish per capita on-farm incomes. Relatively thin markets for agriculture in small towns and urban areas are also of concern. Ethiopia lacks a sufficiently large urban (non-farm) population to generate enough demand for its own agricultural products. Tacoli (2004) identifies some of the driving forces for continued economic transformation. A fundamental component for this change is the decreasing incomes from farming due to lack of land and other related inputs which pushes people to engage in non-farm activities that are often located in small towns and urban centres.

Rural Ethiopia is quickly arriving at the constraints listed above. A limited manufacturing base and overwhelming reliance on subsistence agricultural production provides limited opportunities for forward and backward linkages between the rural and urban economy. The average size of holding is 0.81 hectares (EASE Atlas, 2006) and most land holdings are fragmented across an average of 3.3 different geographic plots (CSA, 2003). Given that land is scarce, population is dispersed, and market access is limiting, agricultural output provides limited surplus to the market. Limited agricultural production, and thus minimal market interaction is inhibiting the flow of goods from rural areas to urban areas constraining important forward and backward linkages.

In addition to predominantly subsistence-based agricultural production, limited transportation networks between rural and urban areas make transportation costs high and inhibit the flow of goods, people and information. During the past 20 years, the government heavily invested in transportation infrastructure in order to build, improve and maintain important arteries between major cities. These improvements have had a drastic impact on communication and mobility of goods between large cities, forming agglomeration economies and urban networking, but rural populations that are far from these major arteries remain distant from economic opportunities outside of the agricultural sector. Despite growing efforts by the federal government and regional states, the rural road network remains limited with a third of Ethiopia's population further than five hours from a city of 50,000 people. In order to enhance rural – urban linkages, key roads and transportation links in the rural hinterlands where agricultural potential is high should be assessed and evaluated for possible growth linkages to urban areas.

Many studies cite that a major reason for rural-urban migration is economic. A shortage of land and insufficient agricultural productivity lead individuals to seek out other manners of income generation. Nonfarm work accounts for between one-third and one-half of rural incomes in the developing world (Haggblade, Hazell, and Reardon, 2007). A vibrant rural nonfarm sector can help reduce poverty for several reasons. First, it helps absorb the surplus labor in rural areas and enhance their income. As most of the poor rely on their labor as the major asset for generating income, new rural nonfarm employment opportunities will have a direct poverty reduction effect. Second, because of its small size, low capital requirement, and proximity to



home, the rural nonfarm sector is important for the welfare of households without land endowments, which include women and the poor. Third, many poor households use the rural nonfarm income as the major means of diversifying income and smoothing consumption as a result of the agricultural seasonality. Fourth, many nonfarm activities are related to agriculture. Thus, the service of financing, processing and marketing can help boost agricultural growth.

Facilitating labor movement, in the form of providing more secure land rights, greater access to education and healthcare, and improved access to rural markets will allow rural inhabitants to diversify incomes as well as provide stronger linkages to urban centers and greater potential for agricultural intensification through improved access to key inputs. As agricultural productivity and rural demand for goods and services increase, a niche is created for small towns to support these needs, thereby producing jobs in the non-farm rural sector (Tacoli, 2003, 1998). Small towns can also render urban markets more accessible, by reducing the transaction costs of distributing goods due to their proximity to urban areas. Additionally, the rural non-farm sector provides a source of risk diversification, for example, by adding employment opportunities for local artisans.

Promoting income diversification activities in rural areas, and fostering small businesses and micro-industries in the small town and urban areas will provide will enhance the economic outcomes in all spatial spheres, but these benefits do not come without costs. A critical element to improving livelihoods in the rural and urban areas is providing residents with the necessary tools and public services to foster innovation and efficient, effective income earning opportunities. This includes provision of public health and education services to rural communities through small town networks and agricultural / health extension agents. Urban infrastructure development and job creation will also be critical to accommodate migrants in search of opportunities in burgeoning cities. Hasty urbanization may lead to urban sprawl and slums, whereas constrained migration will lead to missed opportunity and increased rural hardship. A balance is necessary in order to reap the benefits of enhanced rural – urban linkages. Assessing current economic and demographic developments, as well as ongoing government policies and investment priorities provide evidence to believe that further linkages and urban growth in Ethiopia are possible and profitable. Investments, services, and policies that aim at expanding agricultural income diversification, while supporting small town and urban growth initiatives could be supported in order to maintain positive economic growth outcomes.

Although agriculture has been the foundation for economic growth throughout Ethiopia's history and will continue to be central to future economic growth and poverty reduction, benefits may be gained from fostering more rapid urban growth and greater rural – urban linkages. Indeed, unless policies actively impede urbanization, Ethiopia will most likely have urbanization rates of 30 percent or more within the next two decades. Public investments and other development policies will play a huge role in whether this urbanization ultimately increases economic growth and helps reduce poverty or actually impedes equitable economic development.

As Ethiopia moves forward, it faces key development policy decisions. Since the late 1990s, the country has followed an Agriculture Development Led Industrialization (ADLI) policy emphasizing investments to increase agricultural productivity and spur growth linkages with the rest of the economy. At the same time, government policy has effectively slowed rural-urban migration through regulations prohibiting sale of land, loss of land rights for those who leave rural areas, and registration requirements for new migrants. Allocation of public investments across sectors and across rural-urban space, together with land policies and various regulations on labor mobility, will be major determinants of the growth path of Ethiopia's economy and the extent of poverty reduction in the coming decade.

## REFERENCES

- Acosta, Pablo (2006). "Labor Supply, School Attendance, and Remittances from International Migration: The Case of El Salvador," World Bank Policy Research Working Paper 3903.
- Alemu Zewdu, G. (2010) Rural and Urban Policies Affecting Spatial and Sectoral Linkages. IFPRI – Ethiopia Strategy Support Program 2 (ESSP2) Discussion Paper. Addis Ababa, Ethiopia.
- Arndt, C.; Hashim Ahmed; Sherman Robinson; and Derk Willenbockel (2009) Climate Change and Ethiopia. Climate Change: Global Risks, Challenges and Decisions IOP Conference Series: Earth and Environmental Science.
- Asrat, Sinafikeh, Gerawork Getachew, and Alemayehu Seyoum Taffesse. 2010 "Trends and Determinants of Cereal Productivity: An Econometric Analysis of Nationally Representative Plot-Level Data".
- Ayele, Gezahegn, Jordan Chamberlin, Lisa Moorman, Kassu Wamish and Xiaobo Zhang. 2009. "Infrastructure and Cluster Development: A Case Study of Handloom Weavers in Ethiopia", ESSP-II Discussion Paper 1. Addis Ababa: International Food Policy Research Institute.
- Berhanu, B; White, M. (2000). War, Famine, and Female Migration In Ethiopia, 1960-1989. Economic Dev. & Cultural Change. pp 91-113
- Central Statistical Authority (CSA) (2003) Ethiopian Agricultural Sample Enumeration: Results at country level, Part I and Part II, CSA, Addis Ababa.
- Clapham, C. (1991). The Structure of Regional Conflict in Northern Ethiopia. *Disasters* 15(3): 244-253.
- Cox-Edwards, Alejandra, and Manuelita Ureta, 2003, "International migration, remittances, and schooling: evidence from El Salvador," *Journal of Development Economics*, 72(2) 429-461.
- De Brauw, A.; L. Moorman; V. Mueller; T. Woldehanna (2010) Rural Urban Transformation Report: Permanent Migration and Remittances in Ethiopia. International Food Policy Research Institute (IFPRI), Ethiopia Strategy Support Program 2 (ESSP2) Working Paper.
- de Haan, Arjan (1999). "Livelihoods and Poverty: The Role of Migration—A Critical Review of the Migration Literature," *Journal of Development Studies* 36(2), 1-47.

- Deininger, K., and S. Jin (2006). "Tenure Security and Land-Related Investment: Evidence from Ethiopia," *European Economic Review*, 50, 1245-1277.
- Dercon, Stefan, Daniel O. Gilligan, John Hoddinott and Tassew Woldehanna. 2009. "The Impact of Agricultural Extension and Roads on Poverty and Consumption Growth in Fifteen Ethiopian Villages," *American Journal of Agricultural Economics*, American Agricultural Economics Association, vol. 91(4), pages 1007-1021, November.
- Dercon, S., and D. Ayalew (2007). "Land Rights, Power and Trees in Rural Ethiopia," Discussion Paper, WPS/2007-07, CSAE.
- Dorosh, Paul and James Thurlow (2009). "Implications of Accelerated Agricultural Growth on Household Incomes and Poverty in Ethiopia: A General Equilibrium Analysis", ESSP-II Discussion Paper 2. Addis Ababa: International Food Policy Research Institute.
- The Federal Democratic Republic of Ethiopia Ministry of Works and Urban Development: Ethiopian Roads Authority (2008) RSDP Performance: Eleven Years Later.
- FDRE Population Census Commission (December 2008) Summary and Statistical Report of the 2007 - Population Size by Age and Sex. Federal Democratic Republic of Ethiopia (FDRE).
- Gabre-Madhin, Eleni Z., Wolday Amha, Ethiopis Tafara, John Schluter, Tilahun Teshome and Getinet Kilkile (2003) 'Getting Markets Right in Ethiopia: An Institutional and Legal Analysis of Grain and Coffee Marketing' IFPRI Final study report.
- Haggblade, S., Hazell, P., Reardon, T. (2007). "Introduction." In *Transforming the Rural Nonfarm Economy*, S. Haggblade, P. Hazell, and T. Reardon (Editors), Washington, DC, Johns Hopkins University, pp. 3-24.
- Hanson, Gordon, and Christopher Woodruff (2003). "Emigration and Educational Attainment in Mexico," working paper, University of California at San Diego.
- Hine, John. L. (2005) Unpublished note. World Bank, Washington, DC.
- Howard, J., Crawford, E., Kelly, V., Demeke, M., Jeje, J.J. (2003). Promoting high-input maize technologies in Agrica: the Sasakawa-Global 2000 experience in Ethiopia and Mozambique. *Food Policy* 28:335-348.
- ITU (2009). Information Society Statistical Profiles 2009 - Africa, International Telecommunication Union (ITU).; Ethiopian Telecommunications Corporation (ETC). ETC Strategic Plan. <http://www.ethionet.et/aboutus/visionmission.html>

- Kibreab, G. (1996). Eritrea and Ethiopian Refugees in Khartoum: What the Eyes Refuses to See. *Africa Studies Review*, 39(3):131-178.
- Kidane, A. (1989). Demographic Consequences of the 1984-1985 Ethiopian Famine. *Demography*, 26(3): 515-522.
- Kiros, G-E. and M.J. White. (2004). Migration, community context and child immunization in Ethiopia. *Social Science and Medicine*, 59: 2603-2616.
- Kloos, Helmut. (1992). Health Impacts of War in Ethiopia. *Disasters*, 16(4): 347-354.
- \_\_\_\_\_. (1990). Health aspects of resettlement in Ethiopia. *Social Science & Medicine*, 30(6): 643-656.
- Kuznets, Simon. 1973. Modern Economic Growth: Findings and Reflections. *The American Economic Review* 63 (3): 247-258.
- Lanjouw P. and Feder G. (2001) Rural Non-farm Activities and Rural Development: From Experience towards Strategy. World Bank, Washington, DC.
- Lipton, Michael (1980). "Migration from Rural Areas of Poor Countries: The Impact on Rural Productivity and Income Distribution, *World Development* 8: 1-24.
- Lucas, Robert E.B. (2000). "Migration." In M. Grosh and P. Glewwe, eds., *Designing Household Survey Questionnaires for Developing Countries: Lessons from 15 years of the Living Standards Measurement Study Volume 2*. World Bank: Washington, DC, pp. 49-82.
- Mberu, B.U. (2006) Internal Migration and Household Living Conditions in Ethiopia. *Demographic Research*, 14(21): 509-540.
- Meheret Ayenew. 1999. The city of Addis Ababa: Policy options for the governance and management of a city with multiple identity. FSS Discussion Paper, no. 2. Addis Ababa: Forum for Social Studies.
- Ministry of Economic Development and Planning MoFED (December 2005) The Millennium Development Goals needs assessment: synthesis report. Development Planning and Research Department, Addis Ababa, Ethiopia.

- MoFED (2006) Ethiopia: Building on Progress A Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2005/06-2009/10) Volume I: Main Text, Sept. 2006, Addis Ababa, Ethiopia.
- \_\_\_\_\_. (2003) Rural Development Policy and Strategy, Addis Ababa.
- MoWUD (2006) Urban Development Policy, Addis Ababa.
- Montgomery, Mark, Richard Stren, Barney Cohen, and Holly E. Reed, eds. (2003) Cities Transformed: Demographic Change and its Implications in the Developing World. Washington, D.C.: National Research Council of the National Academies, National Academies Press.
- Rahmato, D. (2008). "Ethiopia: Agriculture Policy Review," Ch. In Digest of Ethiopia's National Policies, Strategies, and Programs, Ed. Taye Assefa, Forum for Social Studies.
- Rashid, S. Meron Assefa, and Gezahegn Ayele. (2009) "Distortions to Agricultural Incentives in Ethiopia," in K. Anderson and W. Martin (eds)
- Renkow, Mitch (2007) "Cities, Towns and the Rural Nonfarm Economy." In Haggblade, Hazell and Reardon, editors Transforming the Rural Nonfarm Economy. Johns Hopkins University Press.
- Rondinelli, Dennis A. (1988) "Market Towns and Agriculture in Africa: The Role of Small Urban Centres in Economic Development." African Urban Quarterly 3(1): 3-12.
- Schmidt, Emily and Mekamu Kedir (2009) Urbanization and Spatial Connectivity in Ethiopia: Urban Growth Analysis using GIS. IFPRI – ESSP2 Discussion Paper # 3. International Food Policy Research Institute (IFPRI), Washington DC.
- Schmidt, Emily and Paul Dorosh (2009) A Sub-National Hunger Index for Ethiopia: Assessing Progress in Region-Level Outcomes. IFPRI – ESSP2 Discussion Paper # 5. International Food Policy Research Institute, Washington DC.
- Stark, Oded, J. Edward Taylor, and Shlomo Yitzhaki. (1986). "Remittances and Inequality," Economic Journal 101: 1163-1178.
- Tacoli, C. (2004) Poverty Alleviation through Rural Urban Linkages: Policy implications.
- \_\_\_\_\_. (2003). "The Links between Urban and Rural Development." Environment and Urbanization 15(1), 3-12.

\_\_\_\_\_. (1998) Rural-Urban Interactions in the Third World, Environmental Policy

\_\_\_\_\_. (1998). "Rural-Urban Interactions: A Guide to the Literature." Environment and Urbanization 10(1), 147-166.

Tacoli, C. and D. Satterthwaite (2003) "The urban part of rural development: the role of small and intermediate urban centres in rural and regional development and poverty reduction." Rural-Urban Interactions and Livelihood Strategies Working Paper 9. London: International Institute for Environment and Development.

Webb, Patrick and Joachim Von Braun (1994) Famine and Food Security in Ethiopia: Lessons for Africa. International Food Policy Research Institute (IFPRI).

Woldehanna, T.; J. Hoddinott, S. Dercon (2008) Poverty and Inequality in Ethiopia: 1995/96 – 2004/05. International Food Policy Research Institute (IFPRI) Working Paper.

World Bank (2009). World Development Report 2009: Reshaping Economic Geography. Washington, DC.

World Bank (2008). World Development Indicators 2008. CD-ROM.

Yang, D. (2008). "International Migration, Remittances, and Household Investment: Evidence from Philippine Migrants' Exchange Rate Shocks," Economic Journal 118(528), 1-40.