Ethiopia's Agrifood System

Past Trends, Present Challenges, and Future Scenarios

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Ethiopia has achieved impressive agricultural growth and poverty reduction over the past two decades. Substantial public investments in agriculture have played a major role in this success, and agriculture remains the cornerstone of the Ethiopian economy. However, the agriculture sector faces daunting challenges that could jeopardize continued growth and improvements in welfare. Increasing land and water constraints, possible limits to achievable crop yields, and rising rural wage rates as workers move from agricultural to nonagricultural employment and from rural to urban locations all may slow agricultural growth. *Ethiopia's Agrifood System: Past Trends, Present Challenges, and Future Scenarios* examines this situation and presents a forward-looking analysis of Ethiopia's agrifood system in the context of a rapidly changing economy. The authors find that sustained investment in the agrifood system, especially private sector investment, continues to have potential to support economic transformation and reduce poverty in Ethiopia.

Past Progress

Ethiopia's agriculture sector growth reflects a doubling in the use of modern inputs (chemical fertilizers and improved seeds), significant land expansion, increased labor use, and 2.3 percent annual growth in total factor productivity since 2000. Average maize yields in Ethiopia in 2015–2017 – maize being Ethiopia's main cereal crop in terms of tons produced – were 2.63 times those in 1999–2001.

Ethiopia's overall economy has also undergone a substantial spatial and structural transformation. Ethiopia's urban population more than doubled in the past 20 years, from 7.3 million in 1994 to 17.5 million in 2015, and, as a result

of rapid growth, the share of nonagricultural output in GDP has risen from less than half in 2000 to about two-thirds today. Moreover, household welfare indicators have improved dramatically as rural poverty fell from 45 percent in 1999/2000 to 23.5 percent in 2015/2016 (Figure 1).

Measures of malnutrition among children also improved significantly. The child stunting rate fell from 58 to 38 percent between 2000 and 2016, while the share of children who are underweight declined from 41 to 24 percent over the same period.

FIGURE 1 Poverty estimates, 1996 – 2016

These positive changes are the result of substantial investments Ethiopia has made in agriculture and the rural economy since the early 1990s. Government provision of inputs and new technologies has enabled rapid agricultural production growth. Investments in road infrastructure and increased demand for agricultural products have led to a large increase in the value of sales. Effective social safety nets have enhanced household food security and improved resilience to droughts and other shocks. Throughout the period, macroeconomic policy has been broadly stable as adjustments to exchange rates, foreign borrowing, and public expenditures have kept macro imbalances from growing large enough to substantially hinder growth.

Current Challenges

Looking forward, Ethiopia faces several major challenges related to rural and overall poverty reduction. Population pressure will increasingly limit land availability and raise food demand, necessitating continued gains in both land and labor productivity. In the longer term, although climate change is not expected to affect average yields, the incidence of shocks is expected to increase.

Meanwhile, the Ethiopian food system is rapidly transforming away from relatively low productivity cereals and small-scale livestock farms with little marketed output toward high productivity, diversified, market-oriented agriculture closely linked with major urban centers and international markets. As the food economy expands, the tension between growing resource constraints and expanding market opportunities will become more pronounced. Addressing these challenges and managing the structural changes to the rural economy will depend on key investments and policies and necessitate a regionally differentiated food-systems approach.

Other developing countries' experiences suggest that successful economic development in Ethiopia will require substantial agricultural growth, especially to promote equity and accelerate poverty reduction. Investments will be

needed throughout Ethiopia's agrifood system – that is, all the sectors, actors, and activities involved in agriculture and providing food for the country's population, including input supply, food processing, transport, marketing, and retail food sales.

Sustainable Growth in Agricultural Production

The composition of agricultural production is important. Ethiopia's agricultural growth has been largely concentrated in the cereals sector. As the population becomes richer and more urbanized, the demand for high-value products such as animal-sourced foods and fruits and vegetables is expected to increase. However, growth in these high-value products has slowed in the last decade, as evidenced by their rising prices. Ensuring that the increased demand can be met by local supply requires improving available inputs and securing adequate access to land and infrastructure. Such measures should be gender-sensitive, as empowering women in agriculture has been shown to have payoffs for agricultural outcomes.

Improved Inputs

Most crops have not reached their yield potential, indicating a significant opportunity to increase production. Fertilizers adapted to local soil conditions are needed, as well as greater use of improved seeds. Intensifying agricultural productivity on limited land will also require new technologies, as well as more widespread adoption of improved agronomy/management practices. Stimulating adoption of improved inputs will require better supply and marketing conditions. Both the public and private sector will have important roles to play in making locally appropriate inputs and technologies available to farmers at affordable prices. Publicly available soils maps and extension agents knowledgeable about local conditions can help tailor fertilizer recommendations for farmers to increase efficiency. More resources should be channeled to local public research centers for development of improved seeds.

The private sector can play a key role, particularly in the development of hybrids. Creating an enabling environment for private sector participation in markets can help lower costs, enhance choice, and improve distribution. For example, better regulations and conditions for firms involved in the import of agricultural inputs such as seeds, agro-chemicals, and machinery can create a level playing field for the private and public sectors and enhance choice and competition in the distribution of agricultural inputs.

Ethiopia is currently underinvesting in agricultural research and more effort is needed to develop and adapt innovations to make them suitable for local users. The innovation system's link with the extension system as well as the private sector should be institutionalized and strengthened. The private sector understands what types of technologies are needed and ultimately will be responsible for their manufacture, distribution, and repair.

Land and Infrastructure

Expansion of agricultural land has slowed in recent years, putting more pressure on available land in the highlands. Land reforms and the implementation of a large-scale land certification program have helped to ensure more secure property rights. These reforms have also contributed to greater gender equity in Ethiopia. The land certification program has been one of the largest, cheapest, and fastest in Africa. However, as the population continues to grow, land tenure rules will need to be monitored to ensure their suitability for transforming agrifood systems.

Land with sufficient rainfall but in less accessible areas, such as parts of the western regions and in the dryer lowlands, remains underexploited because of poor access to water, road infrastructure, and services. Infrastructure and irrigation investments that tap into the latent potential of these areas could stimulate production and support pastoral economies that can supply animal-sourced foods. Livestock systems will require broader adoption of improved animal husbandry and feeding practices, increased production of genetically superior breeds of livestock, and the provision and use of appropriate veterinary health practices.

Reducing Poverty and Malnutrition

While economic growth has lifted millions of people further out of poverty, well-functioning and targeted social safety nets still are required to address the needs of vulnerable and poor households. Ethiopia has had major successes in the past decade with the implementation of its Productive Safety Net Program (PSNP). However, further adjustments to the program may be needed moving forward, such as the following:

- Expanding urban safety nets to better cover the many poor people in urban areas
- Expanding cash payments for safety-net recipients, such as payments to targeted households, which are considered more cost effective than food transfers
- Improving early warning systems, disaster-risk management, and coordination between safety nets and emergency aid

- Maintaining incentives for private sector trade (including wheat imports) in times of crop shortages and high prices to mitigate adverse price effects on consumers

Because of the slow improvement in Ethiopia's nutritional indicators and the high level of stunting, more attention should be paid to how agricultural growth can enhance food diversity and nutrition. Behavioral change communication, gender considerations, sanitation, improved market access, and agricultural production diversity, especially in less connected areas, could play a major role here.

Development Strategy and Macroeconomic Policy

A successful Ethiopian development strategy requires appropriate policies outside the agriculture sector, as well. Maintaining macroeconomic incentives and stability is a prerequisite for the sustained economic growth that will promote market demand for agricultural products and contribute to poverty reduction. With appropriate policies and investments, Ethiopia's agrifood system and the overall economy could prosper. However, avoiding a surge in inflation and potential debt and balance of payments problems will require major reductions in public sector borrowing and net foreign capital inflows, a policy shift that is likely to slow economic growth. Maintaining a strongly positive investment climate will require that enterprises and new investors have ready access to foreign exchange with minimal delays and without high costs of import licenses, which are currently a major constraint for many commercial firms.

Finally, managing the rural-urban transformation and the overall structural transformation of the economy will require appropriate public investments in rural, as well as urban, infrastructure. Policies beyond the agriculture sector will be essential for these transformations and for long-term growth, including education policies and investments, strengthening of the legal framework for business and investment, and investments in ports. Particularly important will be electricity generation and distribution policies, including solar energy, which may offer important opportunities to bring electrification to small towns and relatively remote rural areas.

Private Sector Role

Ethiopia's development model of heavy public sector involvement was well-suited for addressing the major constraints on agricultural growth prior to 2010, when poor road infrastructure required massive public investments, and dependence on traditional varieties of major cereals could be addressed with large-scale government distribution of improved open-pollinated varieties.

However, the public sector's leading role entailed policies, such as preferential access to credit, foreign exchange, and land for public sector entities, that crowded out private sector activities. While the public sector has an important role to play in stimulating agricultural growth, it typically lacks the information and incentives to allocate goods and services efficiently in agricultural and food markets. The public sector's key contribution lies in ensuring a competitive environment that enables the private sector to deliver goods

and services more efficiently and with greater choice. However, private sector development has in many ways been hindered, rather than supported, by the overall business environment, as indicated by the World Bank's global assessment of the ease of doing business, in which Ethiopia was ranked 159th out of 190 countries in 2018.

With the rapid transformation of the agrifood system, a new development model is needed – one led by the private sector, supported by policies and public investments that are pro-farmer and pro-business. Agricultural policy and macroeconomic policy will require greater transparency and consistency. Achieving broad-based growth will also require a level playing field across crop and livestock subsectors and across regions to encourage participation of thousands, if not millions, of actors who can promote investments in a very wide array of high-value products throughout much of Ethiopia. A growing role for more modern supply chains and the retail trade could deliver many higher-value foods at significantly lower prices to consumers, with potential benefits for producers as well.

Implications for Development Strategy in Other African Countries

Although Ethiopia's highland agroecology differs from that of much of Africa, the basic ingredients for Ethiopia's successful agricultural and rural development are applicable to many other African countries. First and most important is Ethiopia's sustained commitment to the agriculture sector through public investments in agricultural research, extension, rural roads, and ensuring wide access to fertilizer and improved seeds. Second, Ethiopia has largely avoided market distortions such as imposition of official market prices and large-scale imports, which have taxed producers in many other African countries. Third, Ethiopia's Productive Safety Net Program has effectively targeted food-insecure households, improving their food security. Finally, compared to other African countries (such as Nigeria, Zambia, Zimbabwe, and the Democratic Republic of the Congo), Ethiopia has enjoyed both broad macroeconomic and political stability over most of the last two decades.

Conclusions

Massive changes have taken place in Ethiopia's economy. With the rural population projected to continue increasing, average farm size will likely decrease, and land constraints are becoming more binding, implying agricultural growth will slow. At the same time, rapid growth in the non-agricultural economy will likely result in a sharp increase in market demand for agricultural products. Continued massive urban investments can foster further economic growth and structural transformation, but without considerable investments in the rural farm and nonfarm economy, continued rapid poverty reduction will be difficult to achieve.

Given the significant yield gaps for major crops and low productivity of the livestock and dairy sectors, public investments in agriculture are likely to continue to have a high payoff. Moreover, even with continued structural changes related to increased incomes, urbanization, and improved infrastructure, agricultural investments are projected to remain strongly pro-poor, given the concentration of poverty in rural areas. If economic growth slows in the coming decade, investments in agriculture may continue to be more pro-poor than investments in other sectors beyond 2030. In any case, investments in the broader agrifood sector, including investment in roads and electricity in small towns and peri-urban areas, should be increased, since they are even more pro-poor than investments in either agricultural production or urban infrastructure.

Although economic growth and structural transformation have diminished the agriculture sector's relative importance in Ethiopia's economy, continued public investments in agriculture and the broader agrifood system (for example, agricultural research and extension and rural and secondary city transport infrastructure and electricity supply) remain crucial for equity and poverty alleviation in Ethiopia. A favorable climate for private investment is also needed, including stable macroeconomic and trade policy, access to credit and foreign exchange, and avoidance of policy changes that increase investment riskiness. As long as poverty reduction is a top priority, then the public and private sectors should continue to make agricultural and rural investment in Ethiopia a high priority.

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