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ETHIOPIA STRATEGY SUPPORT PROGRAM (ESSP II) Research Note 08

Agriculture and Ethiopia's Economic Transformation

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This paper examines the importance of achieving high agricultural growth as a means of accelerating Ethiopia's economic transformation. The conclusions are that a high rate of agricultural growth has far-reaching positive implications for increasing employment and accelerating poverty reduction. An agricultural GDP of six percent is feasible through a high growth rate in agricultural productivity; however, reforms are needed to accelerate growth in seed production and distribution, and in fertilizer distribution and application.

Economic development transforms an economy from one that is largely agricultural to one that is largely composed of manufacturing and services. Agriculture currently dominates Ethiopia's economy and employment, yet, there is an issue as to what its role should be as the economy develops. There is some thought that agriculture should not be given priority for scarce resources in the interests of rapid overall growth. Nevertheless, there is substantial evidence that raising agricultural productivity is possible and that agricultural growth plays a key role in economic growth, particularly in low-income countries. The Government of Ethiopia is committed to rapid agricultural growth as a means of accelerating economic transformation and reducing poverty. This study examines the implications of this commitment to agriculture for both economic growth and reductions in poverty, analyzes the progress underway, and identifies critical policy changes required to reach the objectives.

Agricultural growth as a driver of development

A high rate of agricultural growth has far-reaching positive implications for economic development of low-income countries in terms of increasing employment and accelerating poverty reduction. In addition, agricultural growth generates a diffused pattern of urbanization—development of several spatially dispersed, medium size cities—through its employment effect to the rural non-farm sector. That diffused urban growth is rapid because of the high marginal propensity of rural and small town people to consume rural and non-farm goods and services produced in these same small towns. Thus, as incomes grow the expansion of non-farm activities in the small towns leads to their economies of scale. In contrast, scale economies of urban centers for export led industrialization lead to a concentration of urban growth, usually in one mega city, with large informally settled populations. This is because large rural–urban income disparities drive rural people to queue for higher paying urban jobs.

In order to achieve this rapid agricultural growth with positive economy-wide linkages it is necessary to engage middle farmers, who are those with large enough farming to adopt new technologies and to produce significant marketed surpluses, but small and numerous enough to have spending patterns that drive a vibrant rural non-farm sector. Households with small landholdings who cannot survive without rural non-farm sources of income are unlikely to be drivers of growth—because they lack sufficient land and capital, though they can benefit from the growth linkages. Similarly, very large landowners are generally less efficient drivers of economic growth because they have consumption patterns that are import and capital intensive. As a result, their spending generates few growth multipliers and does little to reduce poverty.

Raising farm incomes is essential to drive employment increases, poverty reduction, and diffused urbanization. That impact will be greatest by concentrating on geographic areas that respond best to improved technology and more intensive cropping patterns. Population in poor resource areas, where it is not feasible to significantly raise farm incomes, will benefit because the rapid employment growth in the more agronomically favored areas will open employment opportunities in the small towns in these areas. Less migration from these agronomically favored areas will then leave more of the big city jobs for migrants from poor resource areas.

Rapid rural non-farm (including small market town) growth requires sufficient infrastructure. Road networks (rural and inter-regional), as well as electrification and communications networks, are crucial to enhance production and marketing efficiency and will enable growth in rural market towns and secondary cities.

Agricultural growth linkages

To understand the role of agriculture in GDP and employment generation it is necessary to divide the economy into three sectors: tradable agriculture, non-tradable rural non-farm, and urban. We used a simplified growth multiplier model to illustrate the linkages across these sectors and the importance of agricultural growth. Three structural features of the economy largely determine the importance of agriculture in employment generation: (1) the size of the non-tradable rural non-farm sector in GDP and employment; (2) the high elasticity of demand of farmers for rural non-farm sector goods and services; and (3) the high employment content of the rural non-farm sector both in the base and at the margin.

Table 1 presents the simulation results. Under the rapid (6.0% per year) agricultural growth scenario, the rural non-farm sector grows by 7.7% per year, even faster than the agricultural sector. This is because of the income-elastic demand of farmers for goods and services from the sector. In the lower agricultural growth scenario (3.0% per year), the rural non-farm sector again grows by more than the agricultural sector, but both sectors grow at much slower rates. In the fast growth scenario, the growth rate of

employment in the rural non-farm sector (7.0%) is more rapid than employment both in the agriculture (1.8%) and in the urban sector (5.0%). When agricultural growth is slow the growth rate of employment in the rural non-farm sector is much smaller than in the urban sector.

The high agricultural growth rate gives a one third faster rate of growth of GDP than the low agricultural growth rate, i.e. 7.5% compared to 4.6%. In a country as poor as Ethiopia, with agriculture so large initially, the contribution of fast agricultural growth to GDP growth is thus very important. Turning to the slow agriculture growth rate (3.0% rate) and holding the urban growth rate constant, the growth rate of employment slows from 4.0% (substantially faster than labor force growth) to 2.3% (somewhat slower than the labor force growth). That is the difference between a moderately rapid decline in poverty and a rapid increase in poverty.

Table 1. Base data and simulation (high[1] and low[2] agricultural growth rate) results, percent

	Base data		Simulations			
	Employment share	GDP share	High[1] GDP growth	Low[2] GDP growth	High[1] Employment	Low[2] Employment
Exogenous sectors						
Agriculture	50	43	6.0	3.0	1.8	0.9
Urban	18	22	10.0	10.0	5.0	5.0
Endogenous sectors						
Rural non-farm	32	35	7.7	3.3	7.0	2.9
Total	100	100	7.5	4.6	4.0	2.3

Source: Employment share. 2007 CSA Population census; GDP share: 2004-05 SAM

Notes: 1) High agricultural growth rate of 6.0 percent is the CAADP target; 2) Low agricultural growth rate of 3.0 percent is the average medium-term real agricultural GDP growth rate.

Table 2 shows the share of incremental employment and GDP growth in the high and low agricultural growth scenarios. In the fast agricultural growth scenario, about three-quarters of the employment growth is from agriculture and its multiplier to the rural non-farm sector—more than twice as much is from the rural non-farm sector as from agriculture. However, only about 70% of the GDP growth is attributable to agriculture and the rural non-farm sector, with the direct contributions from agriculture being only modestly smaller than from its multipliers to the rural non-farm sector. In the slow agricultural growth scenario, the urban sector accounts for nearly half of GDP growth and 39% of employment growth. That is of course accompanied by rapidly widening income disparities between rural and urban areas. One of the effects is migration driven by these income disparities; migrants recognize that jobs are not immediately available, but are willing to "queue" and wait for jobs. Eventually this leads to rapid growth of urban unemployed and urban slums.

International cross-sector studies support these findings and report that a decline in poverty (consistent with an employment increase) is large when agriculture grows and is either small or nonexistent when the urban sector or manufacturing grows.

Table 2. Simulation results: Shares of employment and GDP growth, percent

Sector	Share of employment		Share of GDP growth	
	6% agricultural growth	3% agricultural growth	6% agricultural growth	3% agricultural growth
Agriculture	22.3	19.7	34.4	27.9
Rural non-farm	55.4	40.9	36.2	24.6
Sub-total	77.7	60.6	70.6	52.5
Urban	22.3	39.4	29.4	47.5
Total	100.0	100.0	100.0	100.0

Source: Author's computation

Is high agricultural growth feasible?

The employment calculations above used six percent as a rapid agricultural growth rate. That is certainly at the upper limit of reasonable expectations for sustained agricultural growth. How might this be achieved?

Our hypothetical commodity composition of growth foresees a growth rate of 5% for cereals, 7% for livestock, 8% for export crops, and 4% for other commodities. As future expansion in area cultivated will be limited, future increases in yields will be necessary. The low levels of crop yields relative to those of other countries with comparable resources, best farmers, and experiment stations suggest the potential for that growth rate. This will require greater intensification, including substantial expansion both in area coverage and the intensity of use of fertilizer and improved seeds. Production and distribution of improved seeds and distribution of fertilizer are current bottlenecks.

Policy opportunities

The Government's policies towards agricultural growth are generally consistent with the objective of economic transformation. They range broadly over the usual prerequisites of such growth. However, seed production has lagged far below the level necessary for rapid growth. Similarly, fertilizer use, although growing moderately rapidly, needs to be greatly accelerated. It would increase the probabilities of meeting the very high growth target if the private sector was encouraged to become involved in these sectors. This calls for a major public policy decision. In addition, maintaining the response ratio will require increased technical competence of the extension services and substantial expansion of the research system.

This research note is intended to promote discussion; it has not been formally peer reviewed but has been reviewed by at least one internal and/or external reviewer. ***The Ethiopia Strategy Support Program*** *of the International Food Policy Research Institute (IFPRI) works closely with the government of Ethiopia, 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://essp.ifpri.info/ or http://www.edri.org.et/.*

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