Emmanuel Tumusiime-Mutebile: The challenge of modernising smallholder agriculture in East Africa

Keynote address by Mr Emmanuel Tumusiime-Mutebile, Governor of the Bank of Uganda, at the International Symposium on Agricultural Developments in the EAC Partner States, Kampala, 5 November 2013.

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1. Introduction

All the countries of East Africa share the long term vision of transforming the structure of their economies to attain middle income status and eradicate mass poverty. Structural transformation, which is the essence of economic development, will not be achieved without the modernisation of the agricultural sector. The lessons of successful development around the world demonstrate that agricultural modernisation, involving the transformation of low productivity subsistence farming into high productivity commercial farming, is almost always a precondition of industrialisation.

In this address I want to set out what I believe should be the key elements of a feasible strategy for agricultural modernisation in East Africa. I will start by diagnosing the reasons for the stagnation of the region's agriculture over several decades and discuss the key constraints which hold back the modernisation of agriculture. I will then examine how these constraints can be progressively alleviated, to allow farmers to make the transformation from subsistence production to commercial farming. Finally I will explore the implications for public policy in East Africa.

Modernising agriculture in East Africa will require more financial resources to be invested in the sector, by both the public and private sectors, but the amount of resources required is not vast; agriculture is not a capital intensive sector. It should be possible to provide the public goods and services needed to support agricultural modernisation, such as agricultural extension services and rural feeder roads, with relatively modest increases in the share of Government budgets allocated to agriculture.

Getting the policies right is more important than the total amount of public resources invested in agriculture. Agricultural policies should be clearly focussed on helping the broad mass of smallholder farmers to begin the process of transforming from subsistence production to commercial farming. Unfortunately, the record of agricultural performance in the region over the last two decades is very weak, which indicates that the agricultural policies pursued over a long period have been deficient. Without radical reform of these policies, I don't believe that it will be possible to modernise agriculture in the region.

2. Why has agricultural performance been so poor?

Table 1 below provides data on agricultural value added per worker in constant prices, which is a measure of labour productivity in the sector, for the five East African Community (EAC) partner states, and by way of comparison, the averages for sub-Saharan Africa (SSA), developing Asia and South and Central America, in 1991 and 2011. Agricultural labour productivity in all of the five EAC partner states is very low; it was below the average for SSA in 2011 and only a fraction of the average for the other two developing regions. The average labour productivity in South and Central America is more than 10 times higher than that in every one of the five EAC partner states. Furthermore, labour productivity growth in the EAC has been at best very weak over the last two decades and at worst stagnant or declining. Both Rwanda and Tanzania have achieved some long term growth in labour productivity, but only at 1.5 percent a year and from a very low base. Productivity has stagnated in Kenya and Uganda and fallen by nearly half in Burundi since the early 1990s.

Table 1: Agricultural value added per worker in constant 2005 US dollars

	1991	2011
Burundi	234	123
Kenya	387	363
Rwanda	217	294
Tanzania	225	298
Uganda	205	217
Sub-Saharan Africa	426	466
Developing Asia	643	825
South and Central America	2369	3709

Source: World Bank, World Development Indicators

There are, of course, differences in labour productivity within each country. In general, labour productivity is higher than the average in export crop agriculture (coffee, flowers, etc) but lower than average in food crop agriculture. It is the region's food crop agriculture, which is dominated by semi-subsistence smallholder farmers, that presents the most difficult challenges for agricultural modernisation. In Uganda, food crop production has grown at an average rate of only 0.4 percent per annum over the last 10 years, which is far below the population growth rate of 3.2 percent per annum.

Why is productivity so low in the food crop sector across East Africa? The main reason is that smallholder food crop farmers are trapped in a vicious circle which links their poverty and lack of resources to low agricultural productivity and thus to low incomes.

In general, smallholder farmers use rudimentary farm technology with very low levels of farm inputs, often allied with poor agricultural practises such as the mining of soils which are a reflection of their poverty and lack of feasible alternative strategies. The average value of fertiliser used on Ugandan farms is only $0.6 per acre per annum, and only 7 percent of farm land in Uganda is planted with improved varieties of seeds.[1] The use of rudimentary technology, combined with the mining of soils which depletes soil nutrients, means that crop yields are low and of poor quality. As a consequence, the crop surplus available for selling on the market is also very low. The 2008/09 Agricultural Census in Uganda revealed that only 40 percent of maize grown in Uganda is sold on the market: the figures for millet and sorghum are even lower; 19 percent and 14 percent respectively.[2]

Farmers receive low farm gate prices for what little surplus they do sell on the market because of the high cost of transporting produce from the farm to the market, which arises from the poor state of rural feeder roads, many of which are impassable in the rainy season, and the low volumes of produce traded. Consequently the financial returns to farming are very low. This means that farmers do not accumulate savings for investment in improved farm technology, and even if they do have resources, they have few incentives to invest in raising their yields. As a result, farmers remain trapped in poverty, engaged in low productivity subsistence farming, without the resources or incentives to increase their yields and thus raise their incomes. Breaking this vicious circle of low farm productivity and poverty is the key to modernising smallholder farming in the region. The pertinent question for agricultural policy is: what is the most feasible strategy for achieving this? I will turn to this question next.

[1] These data are from World Bank (2011), Agriculture for Inclusive Growth in Uganda, p7.

[2] Uganda Bureau of Statistics, 2012 Statistical Abstract, p44.

3. What should be our strategy for modernising agriculture?

The goal of our agricultural strategy should be to support the modernisation of agriculture. Modernisation entails farmers adopting good agricultural practises, employing productivity enhancing farm inputs, making decisions about input use and choice of crops or livestock to maximise their profit and selling more of their output on the market. It will bring about a switch towards the production of higher value crops, as well as raising yields per acre and yields per worker.

Before discussing how public policy can support the modernisation of smallholder agriculture I want to address a key question pertaining to our overall agricultural strategy. There are essentially two routes to agricultural modernisation. The first entails clearing peasants off the land and replacing the existing smallholder agriculture with large scale mechanised commercial farms; this was the route to modernisation pursued by Britain in the 17th and 18th centuries and in parts of Latin America in the 19th and 20th centuries. The second entails helping the existing smallholder farmers to modernise, a route which has been pursued in many parts of East Asia.

I don't believe that an agricultural strategy focused on replacing smallholder agriculture with large scale mechanised commercial farms is either socially desirable or feasible in East Africa. It is not socially desirable because it would require mass displacement of peasants from their land, probably forcibly. Mechanised farming is not labour intensive and so would absorb only a fraction of the peasants driven off the land as farm labourers. Most of the peasants displaced from the land would have to be absorbed in the urban areas, but they have few of the skills needed for urban employment and there are already acute shortages of jobs in the urban areas. Consequently the social consequences of modernising agriculture through large scale mechanised farming would be catastrophic; poverty would increase.

The distributional consequences of the second route to agricultural modernisation – supporting smallholders to modernise their farm practises – are much more benign. Smallholder farmers are one of the poorest sections of society, so helping them to raise their incomes will reduce poverty. Although not all smallholders will remain on the land, especially as population pressure intensifies land constraints, rural-urban migration should be lower than if peasants were forcibly displaced on a large scale, and hence it will easier to absorb these migrants into urban employment. Promoting smallholder farming is an agricultural strategy which will support inclusive growth; economic growth which includes the poorest sections of society.

Table 2: Average Crop Value Added per Acre of Cultivate Land on Small, Medium and Large Farms in Uganda

	Small farms (up to 1 hectare)	Medium size farms (1-5 hectares)	Large farms (more than 5 hectares)
Crop value added per acre (shillings)	165,363	118,953	39,202

Source: World Bank (2011), Agriculture for Inclusive Growth in Uganda.

A strategy based on large scale mechanised farming is also likely to fail in terms of raising agricultural output in the region. In many parts of the region, arable land is becoming an increasingly scarce factor of production because of high rates of population growth. Hence maximising crop yields per land area is essential if overall agricultural output is to be raised. Large farms, however, perform poorly compared to small farms in terms of crop yield per acre. Research in Uganda reported by the World Bank has revealed that average crop value added per acre is four times higher on small farms, with a land area of one hectare or less, than on large farms with land of more than five hectares, as shown in table 2. Small farms are much more productive than large farms because they mainly employ family labour, which have much greater incentives to work efficiently without supervision than the hired labour employed on large farms.

4. Policy measures to support agricultural modernisation

If smallholder farmers are to embark on the transition to agricultural modernisation, the vicious circle of poverty, lack of resources and low productivity which characterises smallholder food crop farming must be broken. Fortunately, there are feasible policy measures which can be taken to help resource poor farmers to raise their yields. The key is to encourage and educate farmers to adopt good agricultural practises in combination with greater use of improved varieties of seeds.

Good agricultural practises includes proper land and seedbed preparation, proper plant population and spacing, timely planting and weeding, pest control, soil conservation and proper harvest and post harvest handling. Currently most smallholders have only partially adopted the full suite of feasible good agricultural practises. However, the adoption of good agricultural practises should be within the means of even resource poor farmers, and this will enable them to raise their yields even without having to purchase modern farm inputs.[3] Pilot programs such as the USAID funded Agricultural Productivity Enhancement Program have demonstrated that yields per acre can be doubled for many of the major crops grown in Uganda – coffee, bananas, maize, rice and cotton – if farmers adopt good agricultural practises even with only low input technology. Once smallholder farmers can raise their yields and produce a larger surplus for the market, they will begin to generate the financial resources which will enable them to start to purchase more modern inputs, such as fertiliser, which will enable them to further boost their yields. The combination of high input technologies and good agricultural practises could boost yields per acre fourfold from the prevailing levels.[4]

Providing loans to farmers is sometimes seen as the key to raising productivity in the agricultural sector. For the most part this is mistaken. Until smallholder farmers have improved their agricultural practises and can generate surpluses to sell on the market, access to loans will not help them and may even further worsen their poverty. Access to loans will only benefit smallholders when they are in a position to use this finance to raise their incomes sufficiently to both repay their loans and earn some profit.

How can public policy best help smallholder farmers to begin the journey to agricultural modernisation? Government must provide several sets of essential public goods – these are goods which cannot be provided optimally by the market – if agricultural modernisation is to be feasible.

The priority for public policy should be an effective agricultural extension system which can reach smallholder farmers all over the countryside and whose main objective is to provide technical advice to farmers to promote the adoption of good agricultural practises, allied with the provision of appropriate improved seed varieties. To enable the agricultural extension services to give the best possible advice to farmers, Government must also fund agricultural research. Government must also take the lead in controlling the spread of plant and animal diseases. The rural feeder road infrastructure must be strengthened to enable farmers to access local markets with their crops. A further area where Government intervention is needed is to strengthen land tenure rights for smallholders. Only if farmers have secure rights to use their land will they have incentives to invest in land improvement and to avoid

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[3] See the discussion in Clive Drew (2010), "Past Successes and Failures in Supporting Agricultural Commercialisation in Uganda", mimeo, prepared for the World Bank.

[4] See table 8 in World Bank (2011), Agriculture for Inclusive Growth in Uganda.

practises which damage the long term productivity of the soil. Secure land rights will also encourage land rentals and enable farmers to use their land as collateral for credit. Admittedly this is an extremely sensitive issue for public policy, but its importance for the long term future of agriculture means that it cannot be ignored.

Government should avoid subsidising the provision of goods and services which can be supplied by the market, such as credit and fertiliser. Subsidised farm inputs are not the best way to help smallholder farmers to raise their yields. Given constraints on Government budgets, subsidised inputs can only benefit a small share of the total number of farmers in Uganda and other countries in the region. Subsidised inputs are likely to be captured by larger, better off farmers, rather than resource poor smallholders. Subsidies often simply transfer resources from taxpayers to favoured beneficiaries and encourage the inefficient use of subsidised inputs. When the opportunity cost of subsidising private goods from the Government budget is taken into account – the fact that the money spent on these subsidies could have been used more productively on public goods and services – the overall impact on agricultural productivity is negative. Scarce budgetary resources should be allocated only to public goods and services, such as agricultural research and extension services and rural feeder roads, where they can generate the highest social rates of return, if well designed and implemented.[5]

5. Conclusions

To conclude, I will briefly summarise the main messages of my address.

First, the very weak performance of agriculture in East Africa, especially food crop agriculture, demonstrates that our agricultural policies have not worked. They must be reformed. Although agriculture deserves a larger share of Government budgets than it currently receives, modernising agriculture will not require huge public investments. Far more important is putting in place the right policies for the sector.

Secondly, the strategy for agricultural modernisation should involve helping smallholder farmers to raise their yields and to produce more output for the market. This strategy can support inclusive growth and reduce poverty by raising farm incomes. Agricultural modernisation should not involve displacing smallholders to make room for large scale mechanised farming. This would be extremely regressive and, given that large farms have much lower yields per acre than small farms, lead to lower agricultural output.

Thirdly, the first step on the road to the modernisation of smallholder farming should be to encourage smallholders to adopt good agricultural practises, which can enable substantial gains in yields even without the use of high input farm technology. This should be the priority of the agricultural extension services. Government should also strengthen the rural feeder road network and strive to enhance the security of land rights for farmers.

Fourthly, Government spending on agriculture should be focussed on the provision of public goods and services, such as extension services which provide technical advice to farmers. Scarce public resources should not be used to subsidise inputs which can be provided by the market.

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[5] The evidence for high social rates of return to the provision of public goods and services for agriculture is surveyed in Enrique Blanco Armas, Camilo Gomez Osorio, Blanca Moreno Dodson and Dwi Endah Abriningrum (2012), "Agriculture Public Spending and Growth in Indonesia", Policy Research Working Paper 5977 World Bank.