



SEARCH



Introduction

The situation in Africa is dire.

Even before the recent world food crisis, a staggering one in three people and a third of all children were undernourished and more than one half of all Africans (about 300 million people) lived on less than one dollar per day, and the continent was becoming increasingly dependent on relief aid from abroad.

As a result of the recent food price increases, the FAO estimates an additional 100 million Africans were driven further into poverty (FAO, 2009).

Yet again, the lives of millions of Africans were dependent upon emergency handouts from abroad.

Although there are many contributing factors, the poor performance of the agricultural sector lies at the heart of the problem. On average, agriculture accounts for 70 percent of full-time employment in Africa, 33 percent of national income, and 40 percent of total export earnings, and its importance is even greater in the poorest countries. Yet its performance in recent decades has been one of the worst in the world. There are many indicators of agricultural performance and Africa ranks poorly by most of them. Africa has some of the lowest levels of land and labour

productivity and these have barely changed in 30 years; the continent has declining per capita output levels, especially of staple foods; it has some of the lowest chemical fertilizer use rates, with serious nutrient mining and declining soil fertility; and Africa is badly losing world market shares for its traditional export crops (Hazell and Wood, 2007; World Bank 2007).

Paradoxically, there is enormous potential for agricultural growth in Africa. The continent is blessed with abundant natural resources (e.g., it has twelve times the land area of India and only two thirds as many people to feed). Even if Africa were only to double its average cereal yield to about 2 t/ha, this would lead to an extra 100 million t/year of cereals, shifting Africa from a food deficit to a major food surplus region. With a rapidly growing labour force (despite HIV/AIDS), there is growing scope for adopting higher yielding but more labour-intensive technologies and farming systems. Markets are increasing, with rapid population growth and urbanisation at home and new export opportunities as a result of trade liberalisation and globalisation. Moreover, with few exceptions, the distribution of land is still equitable by international standards and small farms that are efficient but poor dominate the continent.

Given this context it might appear obvious that accelerating agricultural growth should figure prominently in any strategy to reverse Africa's decline, much as it helped kick start economic growth and poverty reduction across Asia in the 1970s. Yet official development assistance for African agriculture was allowed to decline from about \$2 to \$1 billion per year from the mid-1980s to the late 1990s, and has remained largely stagnant since then. At the same time, public investment in agriculture by African governments has averaged only 5% of total public spending, or about half what Asian countries currently spend (Fan and Rao, 2003). Although national policy makers and donors have made several recent declarations to the contrary (for example, by African Heads of State at Maputo 2003 and G8 Heads of State at Glen Eagles 2006 and at L'Aquila 2009), levels of public and donor spending – rather than commitments – on agriculture still remain low. Underlying these trends is a paralysing debate over whether agriculture is even important for Africa today. This paper reviews the debate and attempts to find some resolution.

Contending Views

The debate about the role for agriculture in Africa is structured around three major issues of contention: its role as an engine of growth; its ability to reduce poverty; and the technical and political feasibility of revitalising the sector.

Engines of Growth

Because of its importance for national income and employment in most African countries, proponents see agriculture as a sector whose growth can make a real difference to rural living standards. Moreover, agriculture is known to have powerful

growth linkage effects on the rest of the economy, including providing cheap food and raw materials and a growing demand for nascent industries (Johnston and Mellor, 1961; Haggblade, Hazell and Brown, 1989).

Sceptics argue that agriculture is a stagnant, low productivity sector with unfavourable market prospects that should be shunned rather than promoted. Moreover, while the growth linkages proved very powerful during the Green Revolution in Asia, they may be much weaker today in Africa's small and more open economies. For example, food prices should be determined more by border prices than domestic agricultural production when imports can enter freely, and industry can sell directly into foreign markets without having to wait for growth in domestic demand.

Counter argument are based on the observation that while Africans living in coastal cities can access cheap food imports, most Africans live in areas where transport costs add significantly to the cost and availability of imported foods and hence increases in local food production can still lower local prices. It is also argued that Asia's success in developing manufactured exports began with industries that initially catered to a growing domestic demand that was partially protected from import competition. Once these industries were established and had achieved the scale and efficiency needed to successfully compete, only then were their markets fully liberalised. Growth in domestic demand was driven initially by rapid agricultural growth and the rising per capita incomes that this growth helped stimulate. This has not yet happened in most of Africa and without agricultural growth, fledgling industries will have to compete in world markets from their very inception, a daunting task that is all the more challenging today given the flood of cheap manufacturing exports from Asia.

Resolution of this debate about alternative engines of growth is helped by recognising that opportunities depend very much on a country's economic characteristics (Hazell et al., 2007). An important characteristic is stage of development. Historical evidence from around the world shows that agriculture plays its largest role in the early stages of a country's development, which is where most African countries still are. But even then its potential contributions are affected by a country's resource endowments and its access to international markets.

Countries with mineral resources may have the opportunity to earn significant export revenues and government income without agricultural development. In practice, minerals have proved a curse for many poor countries, benefiting just a small segment of the population and contributing to corruption and conflict while leading to a high currency exchange rate that penalises tradable sectors like agriculture. Where agricultural productivity potential is good, it may be possible to invest mineral revenues in roads, irrigation and drainage, research, and extension to promote a competitive farm sector despite high exchange rates. Nigeria has had some recent success in doing this for selected

commodities like cassava. But if agricultural productivity potential is poor, agriculture will function primarily as a subsistence reserve for those on the land, unless intensification is aided by subsidies financed by the mineral economy. In both cases the benefits to the poor will be greater, given an equitable distribution of land, and if improved governance over the allocation and use of mineral revenues can be achieved.

Some countries that are favourably located near the coast may have good access to international markets at low cost and hence good prospects for developing urban-based, export-oriented industries. Unless these industries are to be limited to entrepôt activity, then it is likely that agriculture will play an important part in their development. Agriculture will probably be an important initial source of capital and foreign exchange, and most of the needed labour will have to come from agriculture. In countries that have a large urban-based manufacturing sector, agriculture may become penalized by a strong exchange rate, leading to it playing the kind of reserve occupation role played in mineral exporting countries..

In countries without significant minerals or manufacturing options, agriculture will almost certainly need to play a leading role. This is most easily achieved in countries with good agricultural potential, in which case rapid agricultural growth can generate significant demand for the non-agricultural economy while at the same time releasing capital, foreign exchange, and labour to enable other sectors to expand. Agricultural exports may also be an important growth driver and agricultural processing may initially be a leading manufacturing sector. The most challenging cases are countries with low agricultural potential, no minerals, and limited manufacturing prospects. Agriculture in these countries is likely to be primarily a subsistence reserve where the poor can build livelihoods with little dependency on the state, particularly when land is distributed equitably. Even here, some pockets of land with reasonable soil and a water supply often exist. Prominent examples are Sahelian countries that have established themselves as major cotton exporters in the past two decades, as well as developing a modest level of irrigated rice production.

Poverty

Proponents of agriculture stress the sector's potential to slash poverty rates, as demonstrated during the Green Revolution in Asia (World Bank, 2007). Why the big poverty impact? An important reason is that most poor Africans work in agriculture so any growth in labour productivity can raise their living standards. Another reason is the labour intensity of agricultural growth, especially when small farms predominate because they are typically much more labour intensive than large mechanized farms. About 80% of Africa's farms are smaller than 2 hectares and they account for significant shares of agricultural production (Nagayets, 2005). Another reason is lower food prices. Given that food consumption accounts for large shares

of a typical African household's budget (50% or more and even higher for poor households), then any reduction in price associated with agricultural growth can greatly add to their purchasing power.

Small farms are also typically more efficient producers in poor, labour-surplus economies (Eastwood, Lipton and Newell, 2009), so targeting them can be "win-win" for growth and poverty alleviation. The efficiency advantages of small farms slowly disappear as countries develop and wage rates rise, leading to a natural transition toward larger and more mechanised farms and an exodus of farm workers to other sectors. But that transition does not normally begin until countries have grown out of low-income status and few African countries are close to reaching that stage. A common misdiagnosis stems from overlooking this broader economic context for determining the countries are close to reaching that stage. A common misdiagnosis stems from overlooking this broader economic context for determining the economics of farm size.

Sceptics counter that food price effects are less important today (see previous section) and most small farms are not viable in today's globalised economy (e.g. Maxwell, Urey and Ashley, 2001; Collier, 2009). Agricultural marketing chains are changing and small farmers are increasingly being asked to compete in markets that are more demanding in terms of quality and food safety, more concentrated and integrated, and much more open to international competition. Supermarkets, for example, are playing an increasingly dominant role in controlling access to urban retail markets (Reardon et al. 2003), and direct links to private exporters are often essential for accessing high-value export markets. As small farms struggle to diversify into higher-value products, they must increasingly meet the requirements of such demanding markets, both at home and overseas.

Sceptics also argue that large numbers of small farmers are too small today to make a viable living out of farming and have anyway diversified their livelihoods away from agriculture to the point where farming now accounts for only small shares of their total income. As such, they argue it is better to invest in helping small farmers diversify out of agriculture, including helping more workers migrate and settle in urban areas where growth is assumed to be taking place. They call for substantial new investment in human capital and rural safety net programs to assist in the transition.

Counter arguments are based on the fact that Africa's domestic markets lag the rest of the world in terms of their integration and spread of supermarkets, and that most small farmers still grow and sell traditional foods in local markets. Moreover, there are successful examples of organising small farmers into producer groups that can successfully link to modern high value markets and input chains. It is also argued that for many African countries, the problem is not that all their small farms are inherently unviable in today's marketplace, but that they face an increasingly tilted playing field that, if left unchecked, could lead to their premature demise. A major problem has been that structural adjustment and privatization programmes

have left many small farmers without adequate access to key inputs and services, including farm credit. The removal of state agencies that provided many of these marketing and service functions to small farms, has left a vacuum that the private sector has yet to adequately fill in many countries (Kherallah et al. 2002). The removal of subsidies has also made some key inputs, such as fertilizer, prohibitively expensive for many small farmers, and the removal of price stabilization programmes has exposed many farmers to greater downside price risks. These problems are especially difficult for small farms living in more remote regions with poor infrastructure and market access. If greater action were taken to restore many of these key functions, say through innovative public-private partnerships, then many small farms would again become more competitive.

As for rural income diversification, this is not an unequivocally positive phenomenon. On the one hand, diversification may reflect a successful structural transformation in which rural workers are gradually being “pulled” into more lucrative non-farm jobs, such as teaching, milling, or welding. Entry into these formal jobs often requires some capital, qualifications, and/or possibly social contacts. On the other hand, in Africa, diversification into the non-farm economy is often a “push” phenomena, driven by growing land scarcity, declining rural wages, and poor agricultural growth, and many workers are moving into low skill, low paid jobs in the service sector (Bryceson and Jamal, 1997; Hazell, Haggblade and Reardon, 2007).

Resolution of the small farm debate also depends on recognising that country economic characteristics have an important bearing on the opportunities and constraints facing small farms (Hazell et al., 2007). Two key roles are identified. One is a growth, or development, role. This role arises when agriculture itself has a growth role to play and when commercially oriented small farms are efficient and can compete in the market. Countries starting with large mineral or urban-based manufacturing sectors will have high exchange rates and ready access to low-cost food imports, so small-farm growth opportunities are likely to be limited to high-value domestic markets. But in countries where agriculture is the lead growth sector, small-farm growth opportunities will arise primarily in the domestic market for food staples and in high-value export markets, at least during the early stages of development when the domestic market for high-value products is still small.

A second role for small farms arises from their potential social contributions. Small farms can provide a way for governments to spread the benefits from a large mineral or urban-based manufacturing sector during the early stages of development when most people are still engaged in agriculture. As economies grow, small farms can also serve as a useful reserve employer until sufficient exit opportunities exist—a role that can be especially important in fast-growing countries regardless of their primary engine of growth. Finally, small farms may provide a social safety net, or subsistence living, for many of the rural poor, even when they are too small to be commercially viable. These social roles are most important in countries with a poor agricultural productivity potential, an equitable

distribution of land, or a large mineral or urban-based manufacturing sector. These social roles do not necessarily require that small farms be commercially viable, and in fact subsistence-oriented small farms may be the most appropriate ones to target.

As economic transformation proceeds,

farms' role as a reserve employer, however, is tricky because it can lead to government support policies that keep too many people in agriculture for too long, as happened in many OECD countries.

Technical and Political Difficulties

The neglect of agricultural investment in Africa has led to a situation in which average cereal yields (of about 1t/ha) are now much lower than in Asia and Latin America, and the gap is widening (Hazell and Wood, 2007; World Bank, 2007). Sceptics argue that revitalising the sector will not be easy: Africa still has much lower densities of rural infrastructure than India had even in the 1950s (Spencer 1994). Africa also has weak institutions for rural development; there is limited irrigation potential and most agriculture must be conducted on depleted soils and under difficult climatic conditions. World agricultural prices are also low in real terms despite the recent food crisis and there is limited tolerance today for the kinds of subsidies and state roles that underpinned the Green Revolution in Asia. Seen from this perspective, sceptics see attempts to develop African agriculture as too expensive and too late.

Agricultural proponents take heart from the improved policy environment for agriculture: the structural adjustment programmes instigated by the World Bank and the International Monetary Fund have removed the worst of the biases against agriculture and opened the way for more successful agricultural investments. They also see plenty of opportunities for raising yields through technological change. Some of the needed technologies are already available and modern science is opening up new opportunities to increase agricultural productivity, even in countries and regions that have not benefited much from new technologies in the past. Poor infrastructure, marketing and input supply systems can be overcome by prioritising farms in areas that are better connected to markets, and by developing technology and natural resource management options that do not require high levels of modern inputs (World Bank, 2007). Proponents also take heart from the greater political commitment of African leaders to agriculture, as expressed in the Maputo 2003 Declaration, and by the commitment of most African states to the Comprehensive Africa Agricultural Development Programme (CAADP) of the New Partnership for Africa's Development (NEPAD). A changing outlook for longer term world cereal and oilseed prices, driven in large part by the aggressive expansion of biofuels programmes in the US and EU and global climate change (World Bank, 2007; Nelson, et al., 2009), will further improve incentives for agricultural investment in Africa while also increasing the imperative for agricultural growth in the face of rising import bills and dwindling supplies of food aid.

On balance, it seems there are still many opportunities for agriculture to play a key role in growth and poverty alleviation in Africa. It is also clear that neglecting agriculture is not working. After 20 years of neglect, African countries have experienced a much higher exit of their workforce from agriculture than is normal for countries at their level of per capita income, and this high exit pattern has been accompanied by falling rather than rising per capita incomes (Headey, Bezemer and Hazell, 2010). It is not the kind of economic diversification that is driven by economic growth but by human despair. The latest world food crisis has shown just how vulnerable Africa's food security remains because of the failure to develop its agricultural sector.

Successes in African

Agriculture

In the end, the best answer to the sceptics is likely to come from success stories showing that agricultural development is commercially viable, pro-poor and technically and politically feasible in African countries. A recent study (Haggblade and Hazell, 2010; Haggblade, 2004) documents several successes of sufficient scale to warrant attention. Amongst these, three – cassava, rice and small scale milk production – illustrate what can be achieved with small farms within the context of poor infrastructure and high transport costs and without the need for input subsidies. Each also demonstrates the key role played by publicly funded agricultural research and a favourable market opportunities.

Cassava

Cassava is Africa's second most important food staple after maize. Cassava is vegetatively propagated and requires few if any purchased inputs. This makes it an ideal crop for small farmers, and reduces the need for coordinated input delivery and credit systems, a problem that has plagued many other crops. Since it can be planted throughout the rainy season and harvested over a period of up to 18 months, it offers important flexibility in the timing of labour inputs, harvesting and marketing. With limited international trade in raw cassava, production gains can also lead to lower consumer prices that are especially beneficial to the poor.

In the past three decades, cassava breeding programmes have produced a number of new varieties called the Tropical Manioc Selection (TMS). Bred for disease resistance, high yield, early bulking, and root shapes that will accommodate mechanical processing, the TMS varieties have routinely generated substantial yield gains of about 40 percent, even without fertilizer, and produce returns to land that are up to twenty times greater than those achieved with local varieties and manual processing. Diffusion of these varieties has stimulated large increases in cassava production in many parts of Africa (fourfold increases since the 1960s in Nigeria and Ghana alone). Nigeria is now the world's largest cassava producer, having overtaken Brazil, but is not yet a significant producer of processed cassava products, such as livestock feed and starch, that are sold on world markets. Nigeria has already made

a foray into the China market, but significant growth of exports will require additional investments in rural infrastructure, crop breeding and cassava processing (Nweke and Haggblade, 2010).

Rice in West Africa

Created in the mid-1990s, Nerica, the new rice for Africa, is a drought tolerant upland rice that yields 50 percent more than existing varieties even without use of fertilizers and pesticides. It does even better when fertilizer is applied. Like the TMS cassava varieties, it promises to benefit large numbers of small farms that do not have access to modern inputs. It is also the product of a sustained public research programme that brought together breeders from Africa and Asia.

Nerica is still at an early stage of dissemination and though it is too early to judge it as a success, its development is timely. Rice consumption in West Africa has been growing at 6% per annum since 1973 and imports have been growing at 8.4% per annum since 1997, already exceeding 4 million tons per year. This offers an excellent market opportunity to build on a technological breakthrough while also assisting many of the poorer farmers in West Africa.

Small scale milk production

Growth in urban demand for milk is increasing at 2-3% per annum in parts of east Africa and this has spawned a minor milk revolution. In Kenya, for example, dairy production has grown at 2.8 percent per year over the past two decades, resulting in per capita production levels double those found anywhere else on the continent (Ngigi et al., 2010). Importantly, the milk sector is dominated by smallholder producers

and growth has the potential to be pro-poor. Additional milk consumption can also be nutritionally beneficial for the poor, but this requires lower prices to make it affordable.

The potential exists to increase dairy markets as per capita incomes rise, as more people become urbanized, and if unit costs can be reduced. Informal milk markets for whole raw milk dominate the sector (about 75% of sales in Kenya) and these are very seasonal. To reach higher income consumers in the urban market it is necessary to develop more formal markets that ensure year round delivery of milk and dairy products that meet basic quality and safety standards. This in turn requires more off-season production, and pasteurization, processing, packaging and storage systems that can produce more dairy products all year round. Key requirements for growing the industry and reducing costs are improved breeds, artificial insemination, veterinary services and improved feeding (Ngigi et al., 2010). Smallholder dairy production needs strong public sector support, especially for disease management, upgrading breeding stock and ensuring quality and safety standards throughout the market chain.

Conclusions

Agriculture's role in the economic development of a country is context specific, varying by stage of development and the availability of alternative growth sectors that can drive national economic growth. Globalisation and trade liberalisation have weakened traditional patterns of development to some extent, but most African countries seem unlikely to achieve higher growth rates or to slash poverty without first achieving more rapid agricultural growth.

Revitalising the agricultural sector will not be easy given inadequate rural infrastructure, weak institutions for rural development; limited irrigation potential, widespread soil degradation and limited tolerance today for the kinds of subsidies and state roles that underpinned the Green Revolution in Asia. But there have been enough success stories in recent years to show that small farm led development is still possible in Africa. Rising world food prices and diminishing food surpluses in rich countries as a result of new bioenergy demands can only add to the imperative for Africa to increase its food production.

References

I Bryceson, D. F. and Jamal, V. 1997. Farewell to farms: Deagrarianisation and employment in Africa. Aldershot, Ashgate.

I Collier, P. 2009. Africa's organic peasantry; beyond romanticism. Harvard International Review, Summer: 62-65.

I Eastwood, R., Lipton, M. and Newell, A. 2009. Farm size, in: Pingali, P. and R. Evenson (eds.), Handbook of Agricultural Economics, Volume 4. Elsevier: Amsterdam.

I Ellis, F., and N. Harris. 2004. "New Thinking about Urban and Rural Development." Keynote paper prepared for the U.K. Department for International Development Sustainable Development Retreat.

I Fan, S. and N. Rao. 2003. Public Spending in Developing Countries: Trends, Determination and Impact. EPTD Discussion Paper No. 99, International Food Policy Research Institute, Washington D.C.

I Food and Agriculture Organization (FAO). 2009. The State of Food Insecurity in the World 2009, (Rome: FAO). (http://www.fao.org/publications/s_ofi/en/).

I Haggblade, S., and Hazell, P. (eds.). 2010. Successes in African Agriculture, Baltimore: Johns Hopkins University Press.

I Haggblade, S., P. Hazell and E. Gabre-Madhin. 2010. Challenges for African Agriculture. In: Haggblade, S. and P. Hazell (eds), Successes in African Agriculture, Baltimore: Johns Hopkins University Press.

I Haggblade, S., P. Hazell and T. Reardon. 2007. Structural transformation of the rural nonfarm economy. In: Haggblade, S., P. Hazell and T. Reardon (eds.). Transforming the Rural Nonfarm Economy. Johns Hopkins University Press, Baltimore.

I Haggblade, S.(ed.). 2004. Building on Successes in African Agriculture. 2020 Focus 12, International Food Policy Research Institute, Washington D.C. (www.ifpri.org/2020/focus/focus12/focus12.pdf)

I Haggblade, S., P. Hazell and J. Brown. 1989. Farm-NonFarm Linkages in Rural Sub-Saharan Africa. *World Development*, 17(8):1173-1202.

I Hazell, P., C. Poulton, S. Wiggins and A. Dorward. 2007. The Future of Small Farms for Poverty Reduction and Growth. 2020 Discussion Paper 42, International Food Policy Research Institute, Washington D.C.

I Hazell, P. and S. Wood. 2007. Drivers of Change in Global Agriculture. *Philosophical Transactions of the Royal Society B*. 363 (1491): 495-515, 12 February.

I Headey, D., Bezemer, D. and Hazell, P. 2010. Agricultural employment trends in Asia and Africa: Too fast or too slow, *World Bank Research Observer*, (doi: 10.1093/wbro/lkp028).

I Johnston, B. and Mellor, J. 1961. The role of agriculture in economic development, *American Economic Review*, 51 (4): 566–93.

I Kherallah, M., C. Delgado, E. Gabre-Madhin, N. Minot, and M. Johnson. 2002. *Reforming Agricultural Markets in Africa*. Baltimore: Johns Hopkins University Press.

I Maxwell, S., I. Urey, and C. Ashley. 2001. *Emerging Issues in Rural Development: An Issues Paper*. Overseas Development Institute, London.

I Nagayets, O. 2005. Small Farms: Current Status and Key Trends. In *The Future of Small Farm: Proceedings of a Research Workshop*, Wye, UK, June 26-29, 2005. International Food Policy

Research Institute, Washington D.C.

I Nelson, G. C., Rosegrant, M. W., Koo, J., Robertson, R., Sulser, T., Zhu, T., Ringler, C., Msangi, S., Palazzo, A., Batka, M., Magalhaes, M., Valmonte-Santos, R., Ewing, M. and Lee, D. 2009. *Climate Change: Impact on Agriculture and Costs of Adaptation*, Washington, DC: International Food Policy Research Institute.

I Ngigi, M., Abdelwahab, M. A., Ehui, S. and Assefa, Y. 2010. Smallholder dairying in Eastern Africa. In: Haggblade, S. and P. Hazell (eds), *Successes in African Agriculture*, Baltimore: Johns Hopkins University Press. Nweke, F. and S. Haggblade. 2010. The Cassava transformation in West and Southern Africa. In: Haggblade, S., and Hazell, P. (eds.), *Successes in African Agriculture*, Baltimore: Johns Hopkins University Press.

I Reardon, T., C.P. Timmer, C. Barrett, and J. Berdegue. 2003. "The Rise of Supermarkets in Africa, Asia, and Latin America." *American Journal of Agricultural Economics*, 85(5): 1140-46.

I Spencer, D. 1994. Infrastructure and Technology Constraints to Agricultural Development in the Humid and Sub-humid Tropics of Africa. Environment and Production Technology Division Discussion Paper No. 3, International Food Policy


Research Institute, Washington, D.C.

I Thirtle, C., L. Lin, and J. Piesse. 2002. The Impact of Research-Led Agricultural Productivity Growth on Poverty Reduction in Africa, Asia, and Latin America. Research Paper No. 016, Management Centre Research Papers, Kings College, London.

I World Bank. 2007. World Development Report 2008: Agriculture for Development. Washington DC., The World Bank.

1103

 [Professor Peter Hazell](#)

 3rd January 2011

 [development](#), [african](#), [agriculture](#), [economic](#), [poverty](#), [alleviation](#), [small](#)

Comments

© 2018 World Agriculture