

# Meeting the Food and Nutritional Demands of an Urbanizing Africa: Expanding the Agricultural Value Chain Linking Producers with Consumers

## Issues Brief

### Introduction

Sub-Saharan Africa is undergoing profound demographic changes. Its population is rapidly growing, faster than any other continent on the planet, and is expected to increase from slightly more than 850 million today to nearly 1.3 billion by 2030 and to 1.8 billion by 2050. Most of this growth will take place in urban areas. Urban growth rates, currently nearly 5% per annum, are more than twice those of rural areas and by 2030 more than half of the continent's population will live in cities and towns.

While in other parts of the world increasing urbanization has gone hand in hand with structural changes in economic activity and reductions in poverty, for a variety of reasons African urban economies have been slow to modernize, the informal sector still dominates, and many of those moving to cities and towns have not seen their incomes rise relative to the costs of urban living. If current projections hold true, in 20 years, more than half of Africa's poor will live in urban areas. Satisfying this burgeoning urban population with convenient, nutritious, safe and yet affordable food will increasingly become a matter of national security. Meeting urban consumption requirements will require a quantum increase in the amount of food produced, significant changes in the kinds of food available and a transformation of the way it is grown, stored, transported, processed and marketed.

Figure 1. Population Trends in Africa, 1950 to 2050 (millions)	Figure 2. Projected Growth in African Food Systems, 2010 to 2050
<p>Source: UN Urban Projections (<a href="http://esa.un.org/unup">http://esa.un.org/unup</a>).</p>	<p>Source: Haggblade (2011)</p>

### **“Game Changers” for Urban Populations in the Agricultural Value Chain over the Past Decade**

While the primary focus of the plenary presentations and the small group discussions of the Conference theme was on meeting the challenges of greatly increased food demand for a growing population, a better understanding of the primary factors which have influenced the four key components of the agricultural value chain, from consumption at the top of the chain, to the intermediary phases of food production, processing and marketing and to input supply at the bottom of the chain, can help lead to more clearly defined policy and programmatic recommendations and actions for the future.

Various studies over the past decade have confirmed that the dietary preferences and consumption patterns of those living in Africa’s urban areas differ from those of its rural population. Urban consumers tend to consume more food and diversify their diets to include higher cost meat, fish and dairy products as well as vegetables such as tomatoes, beans, spring onions and other leafy greens. They increasingly prefer wheat, usually imported, and rice to cassava and sorghum. Maize remains an important staple but is gradually becoming regarded as an “inferior” good as consumption falls with rising incomes. Urban consumers, for the sake of convenience, also tend to purchase more processed and packaged (but often less nutritious) foods that include cooking oils, fats and sugars. Food quality and safety is a growing concern, particularly for those at higher income levels. Finally, “street foods” and “informal” restaurants are also a quick and easy alternative for urban consumers.

As concerns over variety, quality, quantity and safety grow, however, urban food prices have tended upwards, often faster than the increase in incomes, stressing family finances sometimes to the breaking point. The 2007-2008 food riots in many African countries, most of which occurred in urban areas, were caused primarily by sudden price spikes for staples.

Processing and marketing “game changers” over the past decade have included trade policies which have sometimes favored imports over domestically produced food (including the dumping of food products subsidized by developed countries), rising fossil fuel prices and the reduction or elimination of fuel subsidies, the increasing use of food crops for bio-fuels, the mobile phone “revolution” which allows consumers much greater information on food choices and the rise of supermarkets which can offer urban consumers higher quality, convenience, more variety and competitively priced foods. The supermarket phenomenon is driving changes all along the value chain from input supplies right through consumption. However, in much of Africa supermarket growth has not been as rapid as it has been in other parts of the developing world and most urban consumers continue to make the majority of their food purchases in public marketplaces and small informal shops because of price, proximity and convenience. Nonetheless, supermarkets will continue to make inroads, though the rates of growth could differ significantly between countries.

Market interventions by national governments, such as the influence of state marketing boards, have also recently enjoyed a comeback in a number of African countries, helped by the

transition of donors from conditionality agreements to direct budget support and the reduction of external debt through the HIPC program.<sup>1</sup> How sustainable this is remains open to question.

Game changers in food production, both positive and negative, include the improving ability of larger scale farmers to irrigate land while small holders must still depend largely on natural rainfall, changes in climate which have resulted in erratic and declining rainfall in parts of the continent, improved methods of disease and pest control, and the mobile phone revolution, which on the plus side provides producers better information on crop choices and pricing while on the negative side can carry messages that discourage small holder farming. Public policies can also greatly influence the value chain. For example, some governments have subsidized agricultural production while doing little to encourage value adding agro-processors and aggregators. A lack of access to favorable financing and know-how can make it difficult for local entrepreneurs to succeed in adding value to agricultural product. Finally, local government policies towards farming in cities and peri-urban areas can either favor or discourage food production. In many cities in Africa, food grown on small or unused urban plots and open spaces can provide a source of food security to lower income urban residents.

On the input supply segment of the value chain, game changers have been increased fuel prices which affect fertilizer prices and availability as well as mechanization at the farm level, the introduction of genomics and enhanced seed varieties, the availability (or lack thereof) of electricity and water (including irrigation), and access to finance for productivity enhancing investments.

### **Opportunities for Increasing Agricultural Production to Meet Growing Urban Demand**

Increasing urban consumption and the changing nature of urban demand will offer new opportunities for farmers, food processors and distributors and input suppliers to expand their businesses. As the graph above reveals, to match the continent's doubling of population over the next 40 years, value added from food production on-farm will need to triple, growth in marketed volumes will have to increase six-fold and farm inputs will need to increase nine-fold. Food imports will continue to play a role in meeting urban demand, particularly for those with higher incomes, but the bulk of the required increase in food quantities will have to come from domestic sources. While larger commercial farmers are better positioned to ramp up production, the greatly increased demand will also present smallholder farmers with opportunities to grow and prosper if they are able to adapt to the changing marketplace, "up their game" to produce consistently higher quality food, better integrate themselves into the commercial value chain, make strategic and prudent investment choices and take better advantage of available services to increase productivity. Most African smallholders currently do not produce enough quantities of surplus food to allow them to earn a decent living through marketed commodities. Commercial production is highly concentrated among larger farmers and a small group of well-managed and relatively well-off smallholder farms. Yet the gap between potential yields of smallholder farms and actual yields is larger in Africa than in other

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<sup>1</sup> Thomas S. Jayne, "Forces of Change Affecting African Food Markets: Implications for Public Policy", in *The Transformation of Agri-Food Systems*, Ellen McCullough, Prabhu Pingali and Kostas Stamoulis. eds., p. 112.

parts of the world, indicating that there is great potential for smallholders to participate in the overall growth of the market if given the right incentives and opportunities. One of the key themes the Conference was the exploration of ways in which smallholders can better integrate themselves into the commercial food market value chain.

The rapidly increasing urban population in Africa also presents opportunities to expand food manufacturing, processing and storage for domestic and export markets using locally grown products. McCullough *et al* note that “the quality standards for raw materials to be used in manufacturing are often not as strict as those for fresh produce. Because of lower cost of compliance [with standards] and less seasonal price variability,... processing channels may be more accessible to smallholders than fresh produce channels.”<sup>2</sup> However, they observe that entry into developing country marketplaces (including Africa) of foreign-owned processing firms has resulted in both an upgrading and a consolidation of the agro-processing industry and a shake-out of smaller and medium sized domestic firms. Smallholders must therefore increasingly meet the quantity, consistency and delivery scheduling requirements of the larger food processing firms.

To enable producers to meet the diverse preferences and food requirements of the expanding urban population, input suppliers will need to supply an expanded range of equipment, seeds, fertilizers, storage and transport services, and veterinary and extension services. According to the World Bank, in 2007 use of fertilizers in Africa was much lower than anywhere else in the world (13 kg. per cultivated hectare) and stagnant and improved seeds are used in just 24% of the total area planted in grain crops.<sup>3</sup> Except for South Africa, there are few private sector fertilizer and seed producers and the State maintains a predominant position. There thus remains huge scope for the expansion of agricultural input suppliers, both public and private, necessary to provide urban consumers with an adequate, nutritious and affordable food supply.

### **Urban Nutritional Issues – Caution Required**

While increased food consumption on the part of urban dwellers is overall a positive phenomenon, the growing preference for snack, convenience and packaged foods, as well as a diet heavy on carbohydrates, carry a risk that good nutritional practices may be compromised, with potentially deleterious health consequences. Infants and children especially need nutritious diets to grow and learn. As incomes gradually increase in urban areas, and consumption patterns change, the incidence of adult lifestyle diseases, such as obesity, may also rise. African women do most of the family food purchasing yet most urban women, and particularly those of lower income, have little access to – or pay little attention to – good information on nutritional issues. As is true in the rest of the world, African school children are particularly vulnerable to messages they receive from producers of fast and convenient snack foods and receive little, if any, information in most schools on nutritional issues. Nor do African

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<sup>2</sup> Ellen McCullough, Prabhu Pingali and Kostas Stamroutis, “Small Farms and the Transformation of Food Systems: An Overview,” in McCullough, Pingali and Stamroutis, eds., *op.cit.*, p.16

<sup>3</sup> Jean-Claude Devez, “Introduction,” in *Challenges for African Agriculture*, Jean Claude Devez, ed., World Bank and Agence Francaise de Developpement, p.2

men typically pay much heed to nutrition – usually opting for convenience, taste and quantity. Over the long term, African urban dwellers must begin to pay greater attention to nutritional issues and schools and other community service organizations, as well as the media, must provide better consumer education.

### **Critical Challenges**

Meeting the food security needs and dietary preferences of all income groups in a rapidly urbanizing Africa will require a combination of approaches, including increased productivity and improved access to urban markets for smallholder farmers, continued growth of commercial farming and agri-businesses, improved infrastructure, including affordable power, roads and water management and greater attention to the safety and sustainability of urban and peri-urban agriculture. Increased private sector investment in value-added processing, storage and food handling is also needed to support a needed expansion of regional trade in agricultural commodities. Commercial imports will play a small but important role. Sound public policies and increased public and private investments can help to assure a steady supply of nutritious food for urban consumers, including the urban poor, while allowing for a multiplicity of input suppliers, producers, processors and distributors to supply the urban market. Governmental bodies must also work to increase the level of trust between themselves and the private sector.

The smallholder African farmer faces a set of formidable, but not insurmountable, challenges in adapting to the new urban based economies. Some will make the adjustments, others will not, and will move to the non-farm economy. Those closer to the growing urban centers probably stand a better chance of making the transition than those farming in more remote regions due to better information on consumer preferences, the greater proximity of storage and processing facilities, cheaper transportation costs and greater availability of inputs needed to boost productivity, including finance and essential infrastructure such as irrigation and electricity. However, insecurity of property rights prevents many from making the longer term investments needed to increase productivity. The most fundamental challenge most smallholders face is making enough profit from the sale of surplus to more than offset the cost of inputs. Public pressure to keep urban prices low and the negative effect of cheaper imports place smallholders in a difficult position. Some may find that new institutional arrangements, such as cooperatives, associations or contract farming provide them with the best options for increasing productivity, accessing inputs, obtaining quality information on market trends, meeting quality standards, obtaining finance, reducing post-harvest losses and getting the best prices for their produce.

Urban and peri-urban agriculture is an increasingly familiar sight in many African cities and towns. The FAO estimates that by 2020 there will be 35 million urban farmers on the continent. Urban agriculture can improve food security for city dwellers and is a potential source of nutritious fresh produce which might otherwise be unaffordable. Families can supplement their incomes by selling food grown in excess of their personal needs, especially important for vulnerable groups like women-headed households, the unemployed, the elderly and the disabled. Urban farming can also address other issues critical to African cities, such as greening the urban environment and recycling household waste which can provide nutrients for

urban gardens. As noted above, however, considerable challenges face urban food producers. Urban authorities tend to ignore, discourage or even prohibit urban farming, deeming it unsightly, unhygienic and incompatible with development. In peri-urban areas, where plots may be larger and local government less restrictive, it may be somewhat easier for recent migrants to continue to practice agriculture on a limited scale but lack of secure tenure may also keep them from making productivity enhancing investments.

Challenges also confront private sector actors working in the marketing, processing, packaging and distribution segment of the value chain. The reemergence of state run marketing boards in number of African counties creates unfair competition for private sector entrepreneurs wishing to invest in critical intermediary processes between the farm gate and the urban consumer. Cheap foreign competition also makes it difficult for African agri-business to develop. On the input supply segment of the value chain, state subsidies for higher quality fertilizers and other inputs often go disproportionately to those who need them the least while the poorer farmers must make do with inferior quality.

Finally, public investment in both critical infrastructure needed by farmers, such as electricity and irrigation and for agricultural research and development and extension services has also declined in many African countries as budgetary issues have forced cutbacks in these public services, despite the pledges of some countries to increase the proportion of their budgets destined for agriculture. Without such investments, it will become increasingly difficult for smallholder farmers to compete in the global marketplace.

### **Priority Actions for the Coming Decade**

*African Governments.* In order to meet the challenge of feeding their burgeoning urban populations through domestically produced food and intra-African trade, African governments at the national, regional and local levels must significantly ramp up their investment in physical infrastructure required for food producers to increase their productivity. Priorities for national and regional governments include electricity, water management, rural and primary roads. Increased emphasis must be placed on incentives to increase power generation in rural areas through the use of food by-products or waste such as bagasse or rice husk. To provide farmers with the skills required to compete profitably in an increasingly globalized marketplace governments must also reverse the declining trend in supporting higher level agricultural education, research and extension systems. This would include better data collection on urban food preferences and nutritional requirements. Finally, national governments must begin to introduce into their primary and secondary educational curriculum and into their health delivery systems information on improved nutritional choices.

On the policy side, African governments must follow through on reforms to improve regional trade to reduce transportation costs for agricultural product as well as agricultural inputs and rationalize agricultural subsidy systems, including export subsidies and import duties, so as to benefit those most in need instead of the political elites. State-owned marketing boards and grain reserves must be operated with more transparency and predictability. Governments must also gradually introduce reasonable grades and standards for agricultural commodities

which nonetheless do not exclude small scale producers, establish and enforce clear laws on rural and peri-urban land ownership and strengthen the legal framework for the predictability and enforceability of contracts for producing, marketing, processing and distributing agricultural commodities. Other priority actions include reviewing and improving legislation to allow the private sector to create a greater choice of financial products tailored to the particular needs of the African small farmer, post-harvest handlers, warehousemen and food processors. Finally governments must reorient their national agricultural policies to recognize the importance of smallholder farming and urban and peri-urban farming.

At the local government level, physical infrastructure priorities to increase the supply, safety and quality of urban food supplies include upgrading public marketplaces through the provision of cold storage, sanitary facilities and better traffic control, and improving essential urban infrastructure such as water, sanitation and solid waste disposal. Priority policy actions include strengthening local property rights, rationalizing zoning and land use laws in urban and peri-urban areas to allow for small-scale farming, limiting the use of harmful pesticides which can contaminate the water supply, regulating urban livestock and poultry production to reduce the risk of contamination, enforcing safety and sanitary standards at public marketplaces and providing nutritional information in primary and secondary schools and community outreach and local health facilities.

*Private Sector Farmers and Agri-businesses* To remain competitive and to better integrate themselves into the formal sector value chain so that they can benefit from the growing urban market smallholder farmers must make investments to reduce the gap between potential and actual yields of their cultivated areas by using higher quality seeds and fertilizers, improved cultivation techniques, soil enrichment and preservation measures and reducing post harvest losses. Irrigation is a real game changer but those farther from water distribution systems or natural sources of water will remain at a disadvantage. They must also make maximum use of new technologies such as mobile phones to better understand the food preferences and requirements of urban markets, quality and safety issues and accurate pricing information. As noted above, those closest to urban and peri-urban areas may be best suited to take advantage of the increased demand generated by urban consumers. Those farther from urban centers may find it necessary to explore various collective organizations such as cooperatives and contract farming schemes. Collective schemes may also be an option for urban and peri-urban farmers to increase productivity. Another related model is the “hub and spoke” approach where small scale farmers associate with larger commercial farmers who can provide bulk services, such as warehousing and cold storage at the hub. Those who cannot escape subsistence farming may eventually have to look for more off-farm employment – many in fact already do so.

The African agri-business sector is currently underdeveloped, inefficient and largely unable to compete with foreign competition. There is scope nonetheless for growth -- especially in view of rapidly increasing consumption driven by urbanization. The private sector must invest heavily in food processing technology, packaging, warehousing and cold storage, food safety and delivery. This may have to be led by global or regional firms which have the capital to

invest. However, off-shore investors need to have confidence that governance systems, including contract enforcement, are open and fair. South Africa provides a model -- some 4,000 agro-processing companies contribute 10% of GDP and over 16% of total manufacturing sales (the third largest manufacturing sector in the country). However, the top 10 firms are responsible for 70% of the volume and include many global names such as Nestle, Nabisco and Tiger. South Africa offers a variety of investment incentives for agro-processors such as favorable tax treatment, training grants and cost sharing for needed infrastructure.<sup>4</sup> It also offers a model for private sector investment in agricultural inputs -- where farm feeds, seeds, fertilizer and agrochemicals are a big business -- but here again the sector is dominated by a few large firms.

While large scale cold storage facilities are expensive, there are smaller-scale, transportable and less expensive technologies available such as such as cooling boxes which agricultural cooperatives or better-off small holders could take advantage of. As food quality improves, possibilities exist for local producers and agri-businesses to begin to expand output by branding their products -- assuring consumers of consistency. Finally, the private financial services sector must expand its efforts to provide small scale farmers with more options to participate viable savings and credit schemes, including warehouse receipts programs and micro-credit.

*Bilateral and Multi-lateral Donors* Although African countries themselves will have to take the lead in transforming their agricultural sectors, there are a number of areas in which the donor community can assist the process. Perhaps most important is the role that multi-laterals, such as the development banks, can play in financing absolutely essential infrastructure such as the power, irrigation and improved transportation networks required to increase the production of both large and small scale African farmers and keep costs competitive. Donors can also help to re-energize African agricultural research and educational institutions through partnerships with first world institutions. They can support basic primary and secondary educational institutions that serve both the rural and urban populations to improve basic skills levels of small scale farmers as well as promote good nutrition and food safety practices for urban consumers. Donors can also support capacity building programs for municipal governments to improve local infrastructure required by the agricultural sector and for land use planning to allow for rational development of urban and peri-urban agriculture. Donor governments must also eliminate trade practices that act as a disincentive for Africans to produce and market local commodities. Finally they can provide national budget support specifically for the agricultural sector to governments which have demonstrated a commitment to reforms. Donors must be careful, nonetheless, not to by-pass national institutions and systems and establish parallel systems -- sustainability of interventions requires building the capacity of legitimate national institutions.

*The Partnership* As an advocacy organization, the Partnership to Cut Hunger and Poverty in Africa can use its position as a credible voice for African agriculture to increase the visibility of

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<sup>4</sup> Presentation of Tshifhiwa Madima, South Africa Department of Trade and Industry, at the Kwazulu Natal Trade and Investment Fair and Conference, 2006.



African food security issues domestically here in the United States but also internationally by teaming with organizations such as the Kuofour and Chissano Foundations. The Partnership could sponsor or co-sponsor as series of public events, conferences, smaller seminars or briefings that pick up on the priority actions identified in each of the four major themes of the Conference, smallholder farming, the impact of urbanization on food security, mainstreaming finance for food systems development and developing jobs and skills for tomorrow's farmers. For example, the Partnership could reach out to new organizations which may have a narrower focus on some of the issues Group B discussed, such as UN Habitat for urbanization issues, 1000 Days, the Global Alliance for Improved Nutrition, the Global Cold Chain Alliance and the Resource Centre on Urban Agriculture and Food Security (RUAF) to co-sponsor smaller events. The Partnership could also explore funding from philanthropic organizations that might support its agenda, such as the Rockefeller Foundation and the Gates Foundation to sponsor events.

All of the breakout groups stressed the need to re-invigorate African agricultural research and educational institutions. Given its connections to the American university community, the Partnership could serve as an informed broker for alliances between U.S. and African institutions.

Finally, the partnership could explore the possibility of serving as an information resource for those working to transform African agriculture. This could lead to its spearheading a "community of practice" for African agricultural development.

### **Summary and Conclusions**

Assuring an adequate, affordable, nutritious, tasty and diverse supply of food to meet the needs and preferences of *all* of Africa's rapidly expanding urban population, including those with lower incomes and other vulnerable groups, presents a difficult but not insurmountable challenge. Satisfying the increased urban demand will require multi-faceted approaches. Underlying all of the approaches is the indisputable need to invest more financial resources into Africa's agricultural sector. The FAO suggest that 2/3 of these resources must come from the private sector and 1/3 from the public sector. Priority public sector investments are electricity, roads, water management, telecommunications, urban infrastructure, and agricultural research, education and extension services. Priority policy changes are improved commodity standards, trade, subsidies, tax policies and other incentives to spur the private sector. Priority private sector investments are in input use, production and distribution as well as transport and logistics. Foreign assistance will provide less than 10% of the required investment levels.

While the task is challenging, it also presents tremendous opportunities for African farmers. Smallholder farmers can play an important role but they must increase their productivity and link themselves integrally into the agricultural value chain if they are to compete in an increasingly globalized market. Larger scale horticultural and livestock farmers are likely to expand their market share, while imports will continue to meet some of the demand of middle and upper income consumers for higher quality and processed foods. Smaller scale farmers may find it advantageous to forge new relationships with larger commercial farmers. Public

sector attitudes towards urban and peri-urban farming must also evolve so that poorer urban families can rely on locally grown food to offset the higher costs of urban living.

There is ample room for expansion of African agro-industry but the investment levels required to achieve competitiveness may make it difficult for smaller firms to become successful. Regional and international firms may be well-placed to take advantage of increasing urban demand as supermarkets will see growth, although not perhaps as rapid as in other regions. Finally, Africa's research and educational institutions and extension services must be re-invigorated, both to increase agricultural productivity as well to provide the urban consumer with sound nutritional advice.

Continued urbanization of the African continent is inevitable and the challenge of feeding all segments of the expanding urban population will be formidable. Nonetheless, with concerted efforts on all fronts the challenge can be met.

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