Food security is before all an income issue, income either in the form of one’s own food production or from nonagricultural activities and employment to access food through the market. Nutrition security, on the other hand, depends primarily on education, hygiene, and sanitation. Hence, both food and nutrition insecurity are closely associated with poverty, i.e. economic and social underdevelopment.

Africa was, in general, more food secure and self-sufficient four decades ago than today. This deterioration of the state of food security is associated with several factors, including natural disasters (droughts, floods, etc.), conflicts, epidemics (HIV/AIDS, malaria, Tuberculosis), and inappropriate economic policies and strategies. Notwithstanding the real contribution of all these factors, Africa’s failure to achieve food and nutritional security is primarily due to the continent’s failure to trigger and sustain agricultural development and transformation. For the majority of African households, domestic food and agricultural production remains an overriding determinant of overall income, availability of, and access to food. About three-quarters of the total population and 70% of the total number of the poor live in rural areas. Their income and food security depend primarily on agriculture, which employs directly or indirectly 90% of the rural labor force.

Moreover, urban poverty and rural poverty interact through strong backward and forward linkages between agriculture and the other productive and service sectors of the economies of most African countries. Studies of some African countries show that adding a dollar to farm income contributes to increasing total incomes by 2-3 dollars. By failing to develop agriculture, Africa has also failed to achieve sustainable economic transformation that is capable of engendering broader opportunities for income-generating activities and employment in other economic sectors linked backward and forward to agriculture. As a result, urban poverty (and food insecurity) has fed on rural poverty through rural-urban migration induced by acute rural impoverishment.

Africa has failed to trigger and sustain agricultural development and transformation mainly because of failure to opt for and remain consistent with appropriate policies and strategies to this end. First, post-colonial urban bias and high propensity of most African countries to leapfrog to the industrial era without investing consistently to generate and sustain productivity gains in agriculture promoted policies that exerted excessive extraction from agriculture and the rural economy through various forms, including implicit and explicit taxes on agriculture, overvalued exchange rates, and direct public-sector
control of agricultural input distribution and product marketing through state and parastatal marketing boards throughout the 1960s and 1970s.

Efforts in the 1960s and 1970s focused on piecemeal projects aiming at developing single crops, agricultural credit, irrigation, agricultural extension, etc. and failed to address rural poverty and overall food insecurity in a comprehensive way. Comprehensive approaches to integrated rural development in the 1970s and 1980s, in turn, did not meet expectations in seriously tackling rural poverty, as those efforts were frustrated by several factors, including the lack of appropriate pro-poor technology, the lack of participation and empowerment of rural communities, and inadequate institutional capacity to coordinate and implement the complex components (infrastructure, credit, extension, input supply, output marketing, health, etc.) of such projects. Frustrations also stemmed mainly from attempts to implement past initiatives within inappropriate and deteriorating structural, institutional, and policy environments.

Major efforts at structural adjustment and macroeconomic policy reforms since the 1980s have contributed to correcting some extent these drawbacks and to improve the policy environment and incentive sets for agriculture and the rural economies. Many countries have embarked on programs aiming at liberalizing input and produce markets, devaluing or liberalizing exchange rates, and reducing fiscal pressure on agriculture. But these improvements are taking place in a context of acute scarcity of financial resources, human and institutional capacity that are required to enable rural communities and other private-sector participants to seize the new opportunities offered by the new and evolving environment. With the dwindling of development aid and the overstretched of governments’ budgets by unsustainable debt burdens, investment in productive sectors (especially agriculture) has been considerably neglected and declining over the last two decades.

The main result of these past policy and institutional failures is the considerable under-capitalization of African agriculture. Barely 7% of the arable and permanent cropland is irrigated, compare to about 40% in Asia. In addition to negligible use of selected/improved seeds, fertilizer use per hectare of arable land in Africa stands at only 8% and 15% of the levels reached respectively in Latin America and Asia. The number of tractors per thousand hectares of arable land is nearly 3 times greater in Asia and 8 times greater in Latin America. Likewise, road density is more than 2.5 times higher in Latin America and 6 times higher in Asia than in Africa. On the human capital side, African institutions of agricultural higher education, research, and extension are, in general, poorly staffed, ill equipped, and under-funded to provide the scientific and technological foundations of a structural and sustainable transformation of the food and agriculture systems.

Because of this under-capitalization, average productivity of agricultural land in Africa was estimated at only 42% of that in Asia and 50% of that in Latin America during the last decade. Similarly, the productivity of labor in agriculture in Africa stood at less than 60% of that in Asia and Latin America.

The Way Out and Forward: Getting the Agricultural Fundamentals Right
Agricultural development and transformation in Africa requires decisive efforts on four pillars: markets, water, land, and science and technology.

Markets
Agricultural input and product markets in Africa are typically incomplete, endowed with insufficient quality infrastructure and support services such as information and communication, and poorly integrated at the national, subregional, and regional levels. The development of a dynamic private agroindustrial sector that is capable of adding maximum value to and raise the competitiveness of agricultural commodities is lagging because of delays in creating the necessary enabling institutional environment. The compounded effects of these features includ stagnating or declining agricultural productivity, weak backward and forward linkages between agriculture and other sectors, and loss of competitiveness in domestic and world markets. On the product market side, problems such as the lack
of market information, fragmented and poorly organized farmers, and the absence of market intermediaries need to be addressed. On the input-market side, the capacity of local suppliers of credit, seed, fertilizer, equipment, and related inputs need to be strengthened for the private sector to fill the vacuum by picking up vital functions previously carried out by the state marketing boards.

African countries also need to accelerate regional market integration to fully exploit the diversity in resource endowments based on principles of efficiency and comparative advantage among them. The development of regional markets will create the scale economies needed to make higher levels of processing feasible and profitable. It will also help build missing markets, promote the adoption of market-based approaches to risk management, introduce effective regulatory measures, and promote exports to regional and global markets.

Although domestic and regional markets will continue to form the most important component of overall demand for African food and agricultural products, global markets are growing rapidly and offering substantial new opportunities. These opportunities call for a more competitive response from African countries. Africa needs a new cadre of farmers who can penetrate global markets with high-value commodities and meet the demand and expected product quality standards of the global markets. This calls for a paradigm shift towards seeking out and responding to new global market opportunities and strengthening public-private sector partnerships to build the institutional base to promote competition. Emphasis should be placed on developing consistent policies in such areas as export strategies in the face of WTO agreements, focusing not only on farmers but also on private agribusiness communities of traders and processors.

Water

Vulnerability of food insecurity in Africa is increasingly associated with variability in the reliability of water availability for food and agricultural production. Although abundant on a regional scale, only 2–3% of the surface and ground water resources available in Africa are used to meet the different needs. Agriculture is the largest user of water (with 88% of the total water use), yet only 7% of total cultivated land is under irrigation. This happens in the face of recurrent droughts that frequently wipe out African food harvests, which continue to depend essentially on the vagaries of rainfalls. And along with the food harvests goes also livestock and cash-crop production, equally tributary to the hardships imposed by uncontrolled water regimes. Hence, not much progress towards long-term reliable food security can be achieved until Africa reaches a minimum level of development and management of water resources for secure food and agricultural production.

Land

Sustaining increases in the productivity of African also requires bold efforts at halting the degradation of the complex and fragile natural resource base of the region. About 65% of total cropland and 30% of the pastureland are affected by degradation with consequent declining agricultural yields. African soils are typically low in fertility and organic matter content, and soil fertility has been declining with removal of vegetation and overexploitation of land. These factors need to be addressed through bold initiatives in the face of compounding factors such as increasing population pressure and the lack of adoption of appropriate technologies for the restoration and protection of land quality and soil fertility.

The poor management of natural resources in general and the degradation of land in particular result essentially from problems of tenure and access. In many parts of Africa, present forms of tenure do not provide sufficient security to promote and support private investment and to facilitate resource mobility for efficient and dynamic economic allocation. Lack of formalized community empowerment for natural resource management contributes significantly to yielding inadequate security of tenure. In addition to issues of tenure security, acute unequal distribution of, and access to land must be addressed along with the increasing social conflicts associated with such entitlement failures.

Science and Technology
Increasing the productivity and competitiveness of African agriculture requires significant reduction of unit costs of production and distribution. Technological development in the biological sciences, energy, information, and communications offer new opportunities to do so. Africa is offered great opportunities to harness conventional green revolution as well as emerging and promising ones such as biotechnologies and ICT to make significant headways to sustainable agricultural development and food security. African public and private sectors should seek out and exploit these opportunities.

Public investments in research and technology generation and diffusion is needed to encourage broad-based adoption of available technologies and to strengthen capacities to develop and/or adapt and diffuse the kinds of technologies needed by low-income producers to compete effectively in domestic, regional, and global markets. This will require strengthening African research capabilities to help African farmers capture emerging local, regional, and global market opportunities. Publicly funded research will have to continue to play a key role here and, in the face of dwindling national budgets, the establishment and/or strengthening of regional centers of excellence in agricultural research and education could help build critical research personnel and financial resource mass and achieve economies of scale.

Regarding technology diffusion, the provision of extension services in Africa needs a more pragmatic approach that experiments with a number of alternative extension strategies — including those involving public-private sector partnerships. Support should be given to the development of appropriate agricultural extension systems through the creation of networks of decentralized extension structures, which ensure greater public-private partnerships, participation of community-based organizations and NGOs, and effective access for smallholder and women-farmers to extension services.

**HIV/AIDS**

Actions in the above areas will hardly yield tangible long-term impact on poverty and food insecurity if the central issue of the very survival and the preservation of the human capital of the poor, particularly the rural poor in Africa, are not addressed. In this regard, the HIV/AIDS pandemic probably constitutes the greatest threat to food security and poverty alleviation in Africa. Overcoming HIV/AIDS is today a survival issue for tens of millions of people in the continent. HIV/AIDS is both a crisis and chronic condition in Africa. It is a crisis because of the speed of the spread of the epidemic and its interactions with other stresses and shocks. It is also a chronic condition because its impacts most heavily on the most productive sectors of the African economies, namely prime-aged adults.

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