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Viewpoints

The *Natural Resources Forum* is running a special series over the 2007–2009 period on themes to be considered by the United Nations Commission on Sustainable Development in its 16th and 17th sessions: Africa, agriculture, desertification, drought, land and rural development. The Viewpoints in this issue will focus on the constraints to achieving food security.

Experts address the question:

“What are the most important constraints to achieving food security in various parts of Africa?”

A lack of scientific knowledge is one of the main stumbling blocks to improving food production and achieving food security in Africa. Knowledge is a key factor in the survival strategies of communities, especially to those that lie within fragile environments in Africa. Traditional African agricultural systems have not benefited from a cross fertilization of ideas with scientific agriculture which can significantly enhance agricultural practices.

Based on this premise we conducted a study in Bankanu, Sokoto, Nigeria aimed at facilitating the cross fertilization of traditional and scientific ideas. The study documented the knowledge base of the communities' agricultural systems and it unveiled interesting indigenous knowledge on soil surveys, classification and evaluation. Although the results revealed that the community has developed a sound set of procedures for evaluating and classifying agricultural land, which incidentally shares similarities with conventional methods, our conclusion is that cumulative traditional and scientific information and knowledge can enhance food production in the area.

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Low investments in agriculture at the processing level are major constraints to achieving food security in various parts of Africa. Lack of women's involvement in commercial farming, continuous dependence on subsistence farming, ineffective land reforms to enable women to have access to large areas of farmlands constitute major obstacles to food security in Africa.

The absence of strong linkages between agriculture and industry to enable local sources to market their produce and

provide raw material for local industries poses a challenge. Organizations promoting small-scale industrialization at the community level are inadequate and under resourced.

Action must be taken to promote: gender mainstreaming through the use of disaggregated data; gender auditing of agricultural policies and gender budgeting of agricultural expenditures and investments; increased capacity building of actors, decision-makers, management and implementation.

Lack of modern agricultural services and technology, inaccessibility and affordability to women who are disproportionately affected by the lack of access to these improved services — these among others could be considered as some of the most important constraints to achieving food security in some parts of Africa.

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Over the last decade, poor soil fertility, low fertilizer use, persistently low crop yields and food insecurity in sub-Saharan Africa have received much attention. But despite many conferences, hundreds of papers, and thousands of wish-lists, the issue has not been solved. That is not because it is so complicated but because some fundamentals have been ignored: the adequacy of soil information, and soil scientists. Africa relies on a soil map from the 1960s, which is out-dated and incomplete. Despite the number of groups working on soil fertility problems, mapping of African soils ceased in the 1980s. Spatial soil information is, however, essential to distinguish different kinds of soils and their different management requirements. How can Africa achieve food security if the soil resource, on which all agricultural production depends, is such a large black box with very few people studying it? The solution to this

issue lies in getting to the root of the problem. Begin with the soil and ensure there is a critical mass of scientists to expand the frontiers of soil knowledge in Africa.

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Certain export-oriented crops, such as cocoa, are often criticized for competing with other domestic food crops and hence threatening food security in Africa. However, the most recurrent problem is not competition as these cash crops can usually be intercropped with staples. Deforestation, caused by the expansion of cultivated land, reduces the yields of all associated crops and threatens food security. Since animal husbandry is not widespread in the African humid tropics, deforestation and the disappearance of game further aggravate the issue as farmers suffer from chronic lack of protein.

Additionally, while in theory cash crops could provide the income needed to compensate for shortages of locally produced food, heavy taxation frequently threatens farmers' ability to buy and invest.

Lastly, land tenure and security issues also constitute an important constraint to achieving food security. Migrants in West Africa, who formerly enjoyed easy access to land and forests, are now facing land conflicts. Yet, if the migrants are expelled the food supply will shrink even further.

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In Africa, where large numbers of food insecure people live, hunger does not simply mean an absence of food, but also embraces multiple dimensions of food insufficiency, lack of access, underutilization and vulnerability, caused by low production, lack of proper political/financial governance and accountability, and weak regional cooperation, leading to perennial territorial, ethnic and ideological conflicts. This reality implies the need for institutionalization of a permanent mechanism to provide a cushion against food shortages and scarcity.

Africa should therefore establish, through an all-party agreement, a large Reserve in which countries would collectively earmark a specific quantity of food grains to use in emergency situations. If such a Reserve was in place, along with an all-inclusive decision-making system, it would help the region address the problem of collective self-reliance with respect to food security as a means of combating the adverse effects of natural and man-made

calamities, and generally help alleviate poverty. To be effective, the agreement should describe the procedures for the replenishment, stocking and release of food grains, including the types of emergency during which withdrawals can be made and each country's entitlement, the schedules for earmarking purposes and the quality control standards, and include a multi-tier dispute resolution mechanism acceptable to all.

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The 'bifurcated state', as Mamdani* calls Africa's public sector, may well be the single most important constraint to achieving food security in most parts of rural sub-Saharan Africa. Colonial 'retribalization' of the myriad loosely structured, downward accountable chieftaincies since the 19th century resulted in a dichotomy that today's independent national and local governments battle to overcome. A 'customary' rural sphere exists alongside a 'formal' post-colonial sphere. Thus, many parts of rural Africa still lack a public institution to implement public functions that anywhere else in the world appeared pivotal for smallholder agricultural growth as an engine of overall economic development. This includes functions like land reform, catalyzing the provision of agricultural inputs, technologies, and extension; building and protecting agricultural markets; and investing in water storage and infrastructure to mitigate Africa's extreme climatic vagaries. Hence, creating a unitary sovereign, service-delivery oriented agricultural and rural public sector is both the most important and the most challenging condition for food security today.

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The population of Africa, the majority of which are among the world's poorest people, is expected to double from 600 million in 1995 to 1.2 billion by 2020. Poverty, a result of cultural and other factors, is rising in Africa in absolute numbers and as a share of the population. There is increasing rural-urban drift, susceptibility to climate stress and environmental degradation. Incidences of diseases

* Mamdani, Mahmud, 1996. *Citizen and Subject. Contemporary Africa and the legacy of late colonialism*. Princeton Studies in Culture/Power/History. Princeton, New Jersey: University Press.

such as AIDS, malaria and schistosomiasis are also increasing.

African farmers have lower market opportunities due to their lack of access to well developed infrastructure (e.g., dams and irrigation schemes), schools, health services, communications, roads and navigable rivers with access to the ocean for easy transport and trade. Soil fertility has depleted as a result of repeated harvests without replenishment.

Hydrological insecurity has resulted from overdependence of African economies on rainfed agriculture (more than 90% of the food crops) which has been severely affected by high levels of temporal variability and spatial maldistribution of rainfall and other water sources. Even in those sub-regions with sufficient water resources, there is a lack of appropriate financial, institutional and human resource capacity to enhance the amount of water required through research and technology applications.

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Poverty, conflict, disease (HIV/AIDS) and unfair global trade all contribute to food insecurity in Africa. Sub-Saharan Africa is home to around 25% of the world's malnourished. Meanwhile, food production in this region has not increased in the last 30 years, due principally to degradation of the natural resource base supporting agriculture. In particular, depletion of soil fertility is currently the major constraint upon increasing food production and establishing long term food security.

An effective and resilient solution to degraded soil is required which does not create further economic and environmental problems and which takes account of climate change impacts. While the sheer variety of soils and microclimate in Africa precludes the application of one universal solution, soil nutrient replenishment can be achieved with proven biodiversity-based approaches and natural resources locally available to farmers (e.g., agroforestry, green manures). In contrast to expensive and potentially damaging GE seeds or synthetic fertilisers, these approaches can be successfully implemented with investment in human capital. Moreover, these approaches also contribute to climate change mitigation by sequestering carbon in the now degraded soils. Empowering farmers with knowledge of their options for managing soil fertility and their crops is a powerful means of fighting food insecurity in Africa.

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Agriculture in Sahelian Africa is primarily rainfed, except for limited vegetable gardens near homes or in wadis. The rainfed crops of sorghum, millet, corn, groundnuts, etc. are dependent upon the movement of the Intertropical Convergence Zone, ITCZ, to bring seasonal rains. The ITCZ controls rainfall across most of Sahelian Africa so timely forecasts of its onset and persistence would be invaluable to local farmers across Africa.

A sharing of the indigenous knowledge in this belt would greatly enhance the capabilities of farmers to cope with the uncertainty of the rainfall season and enable them to better manage risk.

The capacity to store surpluses from one season to meet the needs in years with poor yields would provide a more dependable source of major food grains and greatly improve food security.

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Despite pockets of success, many African Governments have, for the most part, been unable to ensure physical and economic access to sufficient and safe food that can lead to a healthy and productive life for their people.

First, we are unable to feed ourselves because we are poor and our agricultural sector is selling the continent short. In Africa, poverty, poor agricultural performance and food insecurity represent the sides of a three-sided dice. In a situation where over 80 percent of the people live in the rural areas and between 60 and 70 percent derive their livelihoods from agriculture, as goes the agricultural economy so goes poverty and food security.

Second, the environmental hand we were dealt by nature and by history was not too good, and it has not gotten better. We are in a classic spiral of inadequate agricultural performance, relatively high population growth rates, and an environment that is deteriorating fast. We continue to face formidable challenges in introducing cost effective strategies for reversing the continuing erosion of the fundamental basis of African agriculture — the soil — in funding economical methods of irrigation, in developing reliable and sustainable systems of agriculture, and in developing the supporting human, institutional, and physical infrastructural services which are the foundation of sustainable food security in Africa.

Third, while conflicts have declined in other parts of the world, they have not in Africa. Research by the International Food Policy Research Institute shows that since 1980, more peaceful conditions would have increased Africa's food security situation by up to five percent.

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The most important constraints to achieving food security are weak state capacity and accountability. Whereas Amartya Sen may be correct that “famines are incredibly easy to prevent” if there is political will, this is less true of food insecurity. Effective government strategies such as Malawi’s fertiliser subsidy have until recently been undermined by donor opposition. HIV/AIDS has made thousands of new households chronically food insecure and drained states’ financial and human resources. Low life expectancy, even for civil servants and extension workers, militates against long-term food strategies. Moreover, where Alex de Waal’s “new variant famines” have arisen, previously successful poverty reduction projects — focusing on crop or livelihood diversification — have been rejected by their increasingly risk-averse intended beneficiaries.

Some governments have not helped themselves by politicizing food distribution or refusing to heed early warnings from civil society or outside agencies. Yet a regime seeking to avoid condemnation for food crises it cannot prevent has an incentive *not* to declare famine, or to submit to public scrutiny. But without transparency and accountability, corruption can thrive and worsen food security further, for example through the mismanagement of agricultural marketing boards and strategic grain reserves.

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The tremendous ecological, institutional and cultural diversity of the African continent precludes any definitive answer to that question. Nonetheless, especially in Africa, food security is constrained by misleading representations regarding what constitutes the civil society. It is further inhibited by state institutional deficiencies and global structures of trade and commoditization. If development interventions can improve crop production, experts failing to take into account local dynamics and the aspirations of people and organizations can hinder sustainable food production.

Local, so-called “traditional knowledge” is often pragmatic and adapted to local conditions, although its utilization can be constrained by social turmoil or ill-designed top-down policies. However, local initiatives are no panacea in Africa as elsewhere. The lack of national price stabilization policies, or transport infrastructures, for instance, often undermines efforts to improve food security. Moreover, national governments’ means to undertake development endeavours and to respond adequately to extreme climatic events are often impeded by financial constraints or administrative deficiencies. Food production, as a socially embedded practice, relies on institutional stability and cautious utilization of knowledge.

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