

The Future of Food Security: An African Case Study (by Judy Wakhungu)

Minister Westerwelle, Your Excellencies, Distinguished Guests, Ladies and Gentlemen. It is a privilege to be here with you today. I'm especially honoured to have the opportunity of making a keynote presentation at this 28th Forum on Global Issues organized by the German Federal Foreign Office and the Federation of German Scientists.

Introduction

One of the most important lessons of the past 50 years is that food security does not trickle down to the poor. The number of hungry and malnourished people in Africa – many of them children - is increasing at alarming rates. And yet much of the scientific and technical knowledge to further agricultural innovation and enhance food security in Africa, is available. In fact globally, because of agricultural knowledge, science, and technology (AKST) we are producing more food than ever before in our history. But ironically we live in a world in which almost one billion people are hungry and this means more hungry people than ever before in our history!

Sub-Saharan Africa has one of the world's fastest growing populations. But the growth rate of food production has not kept pace, and this has led to a food deficit. Agriculture is the dominant land-use with permanent pasture accounting for 35 percent and crop land only 8 percent. Moreover, the nature of agriculture is changing in Africa – the farm population is aging, and the rural to urban migration of males is high. Women grow 80 percent of the food, but men are the primary decision makers. The social and economic consequences of hunger are felt widely across all sectors.

We know that improving the productivity and economic returns of agriculture has immediate effects on hunger and poverty. But rapid depletion of natural resources and declining soil fertility threatens the livelihoods of the disenfranchised. Furthermore, Africa is the most vulnerable region in the world to climate change and yet the poor who have the least capacity to adapt are the most vulnerable to climate change.

Land and water are key factors to contributing to food security. With growing demand for water resources, many African countries will experience water stress and water scarcity. In order to benefit from

agricultural technologies such as irrigation, improved seed and fertilizer, appropriate laws, institutions, and market mechanisms will be required.

Agriculture's contribution to economic development and to achieving sustainable development goals is undermined by many factors. These include the fact that external funding for agricultural research is higher than national investments, and in formal agricultural knowledge science and technology (AKST) women are marginalized; and that current investment funds in agricultural education are inadequate to provide a cadre of national experts; and that poor infrastructure for transportation, irrigation, processing, and information communication technologies (ICT) impede the effectiveness of agricultural knowledge science and technology.

Let's face it – smallholder farm sustainability requires some difficult policy choices. Pro-poor progress requires understanding the diversified farming systems in Africa; increased public research and extension investments; presenting a basket of options to allow farmers the flexibility of choosing site-specific options; and creating opportunities for entrepreneurship which targets small-scale farmers.

I would now like to turn my attention to a few compelling examples and case studies that illustrate poignantly that 'one-shoe size' does not fit all in Africa, and that we need a whole retinue of strategies to tackle food insecurity in Africa.

Case Studies

Most of Africa's small scale farmers lack access to affordable high quality seeds. The seed sector is dominated by informal supply chains with farm saved seed accounting for almost 80 percent of planted seed. Improving smallholder farmers' access to high yielding varieties and hybrid crops requires expanded distribution systems. The **Seeds of Development Program** was therefore created to provide access to competitively priced seeds for low-income smallholder farmers in eastern and southern Africa. It has provided focused management training for small to medium sized seed companies such as Kamano Seeds in Zambia, Victoria Seeds in Uganda, and Seed Tech in Malawi. They have succeeded in selling seed around 20 percent cheaper than their larger competitors. By offering a wider variety of seeds and other inputs the Seeds of Development Program has helped smallholder farmers increase food security for their families and communities.

The **One Acre Fund** is a non-profit organization based in Bungoma, Western Kenya. It provides farmers with tools to improve their harvests. These include farm inputs, finance, access to markets, and education. When a farmer joins the One Acre Fund she receives an in-kind loan of seed and fertilizer and is partnered with a field officer who provides in field training on land preparation, planting, fertilizer application, and weeding. The field officers monitor progress during the course of the season, and at the end provide training on harvesting and storage techniques. Since joining One Acre Fund, over 23,000 families have been able double their yields and increase their profits.

Africa's water resources are rich and varied but they have not been easy to access through conventional irrigation technologies. Furthermore, compared to most other parts of the world, only about 20 percent of the precipitation is converted into 'blue water', and to exacerbate the situation rainfall in Africa is highly varied and unpredictable. Therefore, for many smallholder farmers conserving the limited water supply is as important as gaining access to water. The non-profit organization **Kickstart** has developed a line of treadle pumps that allows farmers to irrigate land situated several metres above a water source. Because women are the majority of users many of these treadle pumps have been designed to fit specifications of women's physiology. Almost 150,000 pumps have been sold in Burkina Faso, Mali, Kenya, Tanzania, and Malawi.

Another compelling example of smallholder micro-irrigation systems is provided by the **Solar Electric Light Fund (SELF)** that together with community partners in Benin has introduced solar powered drip irrigation systems that is improving nutrition and raising incomes for farmers.

Poor soil fertility threatens to destroy food supply- permanently. The fact that Africa is facing a soil fertility crisis is not a revelation to experts gathered at this Forum. As you are aware, traditionally, most people have relied on animal manure as fertilizer. But population growth has reduced the amount of land that each family can farm, and the number of livestock that each family can keep. Soil fertility is further threatened by the fact that farmers can no longer rely on fallowing their land for a number of years (again because there is no land available). Farmers now have to crop their land every year in order to survive. At today's prices, nitrogen-based fertilizer is no longer feasible for smallholders.

What then are the options for affected people? There are a number of possible options, but I would only like to mention two. The first is **green manure/cover crops**. These are plants trees, bushes, or vines that allow farmers to, amongst other things, improve soil fertility and control weeds. The green cover crops of acacia trees and cowpeas are used successfully in Mali. The second is **Malawi's** compelling example a few years ago, to go against conventional ideas about providing agricultural subsidies to farmers. The government designed a program to import improved seed and fertilizer for distribution to farmers at subsidized rates through coupons. Although heavily criticized, this ambitious program needed massive financial, political and public support. By 2006/2007 coupled with increased rainfall, the program allowed Malawi to record its highest maize surplus ever.

The **Homegrown Company Ltd, Kenya** produces and exports packaged horticultural produce to the UK market. The business strategy has been the production and packaging of produce at source without further packaging at the final destination. To complement its own production, Homegrown has entered into partnerships with local farmers all of whom have supply contracts spelling out the commodity to be supplied, the period of supply, and the quantity and quality of supply. Farmers follow the recommended crop husbandry techniques, allowing them to minimize risks and to be assured of a price for the various grades of their produce.

The **OneFarm Africa** project in Tanzania (and Kenya) works with local farmers to help them safeguard the local food diversity by focusing on the revival and extension of indigenous vegetables on small beds. By organizing 500 farmers into groups of 20 each with an average of 20 beds to grow amaranths, nightshades, kales, and cowpeas –farmers have been able to generate greater returns from markets as well as use 50 percent less fertilizer and 30 percent less pesticide than conventional approaches. Farmers can harvest five to eight crops a year allowing them improve their income. Integrating on-farm diversity with sound ecological practices has a positive effect on natural, social, and human capital.

Urban agriculture is becoming increasingly important in Africa, and the majority of these urban farmers are women. It is estimated that by 2020 about 40 million Africans living in cities will depend entirely in urban agriculture. The urban poor are very competent at waste recycling and compost production. Millions of tons of waste, much of it biodegradable, are

produced annually in Africa's largest cities. Growing food in cities has many advantages over growing food in rural areas. These include proximity to markets and therefore reduced costs, reduced post harvest losses, and low transportation costs. Examples of successful urban farmer initiatives include **Harvest of Hope** in Cape Town, **Vertical Farm** and **Urban Harvest** in Nairobi. In addition because schools usually have access to land in cities they have become increasingly important in serving as agents in urban agriculture. For example the City Councils of Accra, Nairobi, and Kampala have joined school initiatives to provide urban farmers and students with training and extension services to support urban farmers.

Conclusion: What does the Future hold for Food Security in Africa?

These few case studies show us that there is no doubt, that going forward African countries shall need many options for decision makers. These include strong public policies to shift the focus from purely production technologies to understanding and enhancing the production and adapting to environmental change impacts. Africa's diversity in agricultural and ecological practices provides unique opportunities for creating solutions to local problems. Agro-ecological approaches embrace the complexity of food production, by appreciating the value of crops in relation to ecosystems. We should therefore think beyond the linear approaches of formal science. We ought to pay more attention to integrated solutions, spatial heterogeneity, tradeoffs, livelihood and environment outcomes – rather than overemphasizing productivity issues. The few case studies that I have mentioned this morning show that targeted investments in AKST can yield enormous benefits and help alleviate poverty, improve nutrition, and promote food security in Africa.

Thank you very much, indeed, I am appreciative of your attention!

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