



**AgEcon** SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

## **An African Green Revolution Leading to Development**

**Namanga Ngongi**

*Paper prepared for presentation at the “World Food Security: Can Private Sector R&D Feed the Poor?” conference conducted by the Crawford Fund for International Agricultural Research, Parliament House, Canberra, Australia, October 27-28, 2009*

*Copyright 2009 by Namanga Ngongi. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.*



## An African Green Revolution Leading to Development

**NAMANGA NGONGI**

Alliance for a Green Revolution in Africa (AGRA)

Email: [NNgongi@agra-alliance.org](mailto:NNgongi@agra-alliance.org)

Africa is short of food, due particularly to increasing population and under-investment in agriculture and agricultural research. For several reasons farm yields are about one-quarter of the global average. New broad cooperative approaches to the problem have had very encouraging results; Malawi for example has been able to export food to neighbouring countries. Significant factors in this success include comprehensive policy support by governments for farmers, innovative financing arrangements, and institutional innovations that have encouraged small-scale domestic agribusinesses, especially in the supply of good seed and fertiliser. There are further opportunities to build on the resulting expansion of rural economies, for example by new crops and local processing, and to extend these examples to other countries. Increased vigilance is required to maintain farmer access to good farmland, and to anticipate and offset adverse effects of climate change.

Dr Namanga Ngongi has had extensive experience in agriculture and management of international organisations. He worked in Cameroon in the ministry of agriculture before being assigned in 1980 as representative to the UN food agencies in Rome. He joined the World Food Program in 1984 and became Deputy Executive Director in 1994. In 2001 he was appointed Special Representative of the UN Secretary General to the Democratic Republic of Congo, and led the peace-keeping mission (MONUC) for two years. He helped put together the transitional government. Dr. Ngongi retired from the UN in 2003. He joined the Alliance for a Green Revolution in Africa (AGRA) as its President in November 2007. Namanga obtained a BS in agriculture from the California State Polytechnic University in 1968, and MS (1973) and PhD (1976) degrees from Cornell University.

### Introduction

It is a great honour to address this conference on behalf of AGRA, the Alliance for a Green Revolution in Africa. The Chairman of our Board, Mr Kofi Annan, former Secretary-General of the United Nations, extends his warm regards.

I thank the Crawford Fund for its dedication to addressing a central issue of development: the effective use of research to achieve food security, especially for Africa, where one-third of the population faces chronic hunger.

Today's gathering is indeed impressive, as it brings together public and private partners who have within their collective grasp the opportunity to help transform African agriculture, which has long languished even as other world regions have doubled and quadrupled their productivity.

Africa has a problem: there is not enough to eat. Africa has been food-insecure for decades. Per capita food availability has declined; more than 250 million Africans live with daily hunger. Meanwhile agricultural imports are on the rise, especially for rice, wheat and even maize — the continent's most important food staple.

AGRA works across the agriculture value chain, in partnership with the public and private sectors, to transform the subsistence existence of our smallholder farmers into viable commercial activity. Make no mistake: agriculture in Africa is smallholder agriculture. Seven out of every ten Africans gain their livelihoods through farming. Most are women, and most cultivate a hectare or less of land. Their yield is one-quarter the global average. Working with little more than a hoe and some saved seed, they struggle to feed a continent

of nearly one billion people. It is time to ensure that they have what they need to succeed.

To do so, we must be willing to break with old orthodoxies and ingrained ways of working. We must think out of the box to put in place the programs, policies and partnerships that can rapidly increase farmers' productivity, add value to their goods, move those goods to markets, increase incomes and employment, and launch Africa on a path of prosperity and food security.

We are talking about nothing less than an African Green Revolution — a uniquely African and sustainable Green Revolution that will not only beat the odds of today, but also those of tomorrow, those being thrust upon the continent by climate change. Everything we do must not only improve productivity today, but also consider tomorrow, and help the farmer adapt to and mitigate climate change, and protect the natural resource base upon which all of farming depends. But I am speaking to Australians — and you know what I am talking about. Like Africa, Australian agriculture has already felt the hot dry winds that can come with climate change. We cannot afford to wait to address this problem or it will be a total catastrophe, especially for Africa where 70% of the population depends on agriculture for our livelihoods.

Africa's Green Revolution must deliver proven scientific innovations to farmers without further delay! It must transfer research results into development. While basic research will and must also continue, there are so many existing technologies that have yet to reach our farmers. These research results must be adapted to African conditions and put to wide use in the field.

Today in Africa we find that even when new research is used, it is often not used at a scale large enough to attract the attention that it deserves. Take conservation agriculture for example: everyone knows it works. Farmers can plant trees in their fields to improve soil fertility, but in most cases trees alone will not solve farmers' problems. They must be combined with other interventions. The question is, how do we link things up and carry out demonstrations of a scale that will catalyse change for thousands?

Take the situation in Kakamega, in Western Kenya, an area with enormous agricultural potential but even more poverty! Unlike so much of Kenya, it has plenty of rain. What it doesn't have is good soil. Acidic soil depresses yield by at least

30%. But this problem has a solution — one used all over the world — lime. And, in fact, there are two regional lime companies; there are agro-dealers to sell the lime to farmers. There is a research centre developing new seeds and soil management practices; there is an extension service to train farmers in use of lime and conservation agriculture. But until recently there was no way to link up these distinct parts of the value chain as there was one major missing ingredient — finance — loans affordable to smallholder farmers and agro-dealers so that they could purchase the lime, fertilisers and seeds to stock, sell and grow. Now, thanks to an innovative program by AGRA and Equity Bank, such loans are available, and lime is on its way to thousands of farmers, with a target of 50 000, in a program sponsored by AGRA and coordinated by KARI-Kakamega.

Success will come when we find the right ways to link all things together. We can then achieve system-wide change that benefits smallholders. To link things together we need to build public-private partnerships that think outside the box. New approaches and guiding principles are emerging from recent successes across Africa, and I would like to share six of these with you.

## 1. Comprehensive policy support

Malawi, in Southern Africa, is a great place to start. The government also broke with conventional wisdom when it boldly decided to provide smallholder farmers access to inputs, storage and good pricing. For decades, support of any kind for Africa's farmers had been condemned by international development partners — despite the fact that support for farmers was clearly essential to the success of farming in developed countries. At any rate, Malawi broke the mould. The government facilitated access by smallholder farmers to improved seeds and fertilisers from agro-dealers through a voucher system. It worked brilliantly: not flawlessly, but brilliantly.

Government support translated into increased farm productivity and growth of the private sector. Other government policies supported the development of roads, irrigation and innovative marketing boards.

As a result of this comprehensive approach — and the blessing of good rain — Malawi averted famine and became a net exporter of maize. It has now been self-sufficient in maize for four straight years, exporting its surplus and giving 10 000 metric tons of maize as food aid to Swaziland and Lesotho. This year, it will export maize to Kenya, whose harvest has been crippled by drought.

This shows us that African governments must be supported in developing their own home-grown policy solutions that provide farmers with comprehensive support. We cannot underestimate the significance of such a change. For decades, African governments have neglected agriculture, sometimes in efforts to meet the mandates of international donors, whose structural adjustment policies called for replacing public-sector involvement in agriculture with private sector. While perhaps good in theory, it didn't work for Africa and the result was disastrous.

Even today, African governments on average devote just 4–5% of their national budgets to agriculture. In contrast, during the height of the Asian Green Revolution, Asian governments were dedicating over 15% of their total government spending to agriculture. Then, as now, we get what we pay for.

But African government priorities are changing. The African Union's Comprehensive African Agriculture Development Program, known as CAADP, commits governments to dedicating 10% of national budgets to pursue 6% annual agricultural growth. So far six countries have met this goal, and others are stepping up.

## 2. Innovative finance

Another example of successful innovation is in Tanzania. Last year, 700 000 smallholder farmers in the Southern Highlands produced five million tons of maize. It was a record-breaking year, which the Minister of Agriculture attributed in part to the government's partnership with AGRA, whose programs are increasing the availability of good seeds and fertilisers with the help of a revolutionary new finance program for smallholder farmers and small- and medium-sized agri-businesses.

AGRA and its partner, the Financial Sector Deepening Trust, put up \$2 million to guarantee \$10 million worth of loans made by the coun-

try's National Microfinance Bank (NMB) to support smallholder farming. Meanwhile, as in Malawi, the government put in place a program of farmer support, with vouchers for farmers use to purchase seeds and fertilisers from rural agro-dealers. At the same time, new seed varieties developed by the national agricultural research organisation and distributed by AGRA-supported seed companies were reaching farmers. This combination of affordable finance — enabling agro-dealer to stock their shelves and farmers to buy inputs, often with the support of government vouchers — led to impressive increases in farmer productivity. The World Bank even took note, and is supporting the extension of the government's voucher program with \$160 million.

Since AGRA first launched its innovative financing program in Tanzania, it has built on this success. We have leveraged US\$160 million for funding small-scale farmers and African agri-businesses. Standard Bank, one of Africa's largest financial institutions has provided \$100 million to be disbursed in Uganda, Tanzania, Ghana and Mozambique. Equity Bank in Kenya, one of Africa's fastest-growing financial institutions, has allocated \$50 million, with AGRA and the International Fund for Agricultural Development each injecting \$2.5 million as security.

Such financing represents a total break with past lending practices by African commercial banks, which have made less than 1% of their lending available to smallholder agriculture. New operating principles are at work including loan guarantees that reduce banks' risks of lending to agriculture; the development of appropriate financial products for farmers; improved performance of agricultural markets; and efforts to improve farmers' financial literacy. These approaches make it possible for banks to provide low-interest loans for smallholder farmers — a win-win situation.

AGRA is moving quickly to build on these successes. We are now working with partners to develop a syndicated loan guarantee facility that will leverage one billion Euros from commercial banks into smallholder agriculture.

### 3. Institutional innovations

Rwanda, in Central Africa, is also making major strides in feeding its people. As part of this silent revolution, the government has increased farmers' access to fertiliser. To do so, the government of this landlocked country rocked the boat. It ended the state's control over fertiliser distribution. Such control was totally ineffective! Instead, the government devised a way to involve and strengthen the private sector. The government imports fertiliser in bulk, and auctions it to the private sector, which sells it to farmers. Some of this distribution goes through village-based agro-dealers, reaching farmers far from any paved road. As a result of this and other innovations, Rwanda's food production grew by 15% in 2007 and 16% in 2008: a green revolution is in the making.

Another institutional innovation is networks of agro-dealers: small-scale business women and men who work in remote rural areas, getting farmers affordable high-quality seed, fertiliser and other inputs they would otherwise either go without, or have to walk many kilometres to find.

Today, AGRA is strengthening agro-dealer networks in eight countries in Eastern and Southern Africa, and three countries in West Africa. In just four countries — Malawi, Tanzania, Kenya and Zambia — AGRA has funded the training of 4500 agro-dealers, leading to the certification of more than 3500. They have collectively sold 115 700 metric tonnes of fertiliser and 35 285 metric tonnes of seeds to farmers.

Agro-dealers represent a thriving new branch of Africa's agricultural private sector, and need to be scaled up further to reach tens of millions of smallholder farmers with affordable, appropriate farm inputs.

Other institutional innovations are needed, such as countries banding together for regional procurement of fertiliser. Currently, on average, African farmers use one-tenth the amount of fertiliser used elsewhere in the world, leaving three-quarters of farmlands severely depleted of soil nutrients. The price of fertiliser is totally beyond reach of most smallholder farmers. One way to lower the cost is to purchase in bulk, and AGRA is working with the African Development Bank to open a Fertiliser Financing Facility which does just that. Meanwhile, AGRA is also supporting national efforts to develop African fertiliser manufacturing capacity.

### 4. Developing Africa's agricultural private sector

The potential of the private sector in African agriculture may be one of the continent's best-kept secrets. Imagine it: hundreds of millions of smallholder farmers are essentially private businesses. The problem is that, until now, they have been failing businesses. This is changing, and as it does, the opportunities of Africa's economic growth will blossom.

In the past, when populations were much smaller, people could be happy with annual food production of one ton per hectare. It was sufficient to feed a small population. That is no longer the case. The possibilities of making a decent living with low-input agriculture have dwindled. There is clearly a need for locally adapted, improved seed; integrated soil-fertility management which blends organic and inorganic nutrients; small-scale irrigation and other technologies that make the most of soil moisture and rainfall; and other farm inputs.

To really flourish, smallholder farmers need opportunities to add value to their crops. They need to be able to process cassava into flour, turn bananas into baby food and combine grains into high-nutrient energy bars. Everywhere one looks in African agriculture there are opportunities for business growth and development.

The paradox is that African agriculture has not attracted the interest of research and commercialisation efforts, especially those operated by the private sector. This is both because African agriculture has been low-input, and because we have so many diverse agro-ecologies.

The seed sector is a good example. Smallholder farmers are in desperate need of improved, locally adapted seed — but seed development must be tailored to the location and conditions. Africa has dozens of staple crops and hundreds of varieties of those crops that must meet consumer tastes as well as local ecologies. This offers great scope for small-scale businesses, but not much for large-scale businesses that can sell billions of dollars worth of a single seed type.

Recognising that small- and medium-sized African businesses must be the core of a private-sector revolution in agriculture, AGRA has provided start-up capital for 32 African seed enterprises in 23 countries. In two years or less, most of these companies have doubled their production of

improved seed. They are selling every last seed produced — and could sell even more. African entrepreneurs are hungry for the opportunity to grow businesses that serve smallholder farmers.

There are, however, continuing challenges for these young companies, challenges that span the value chain, and many in simply establishing smooth collaboration between the public and private sectors, and increasing capacity at the rate and to the scale needed. For instance, a continuing challenge faces smallholders who grow legumes, such as cowpea, pigeon pea and soybeans. These crops are packed with protein and nutrients and their use improves soil fertility. However, because they are self-pollinated and can be retained by the farmers for several planting seasons, seed companies do not make big profits for selling them as seeds. They have been among the many ‘orphan crops’ of Africa, neglected by R&D. While African crop breeders have begun to develop improved high-yielding varieties of legumes and a few companies are multiplying and disseminating them, the challenge now is finding ways to support community-based organisations or farmers’ groups to produce the improved varieties in quantity for sale to local farmers.

## 5. Breadbaskets and land grab

All of these innovations, from improved high-quality seed to affordable finance, will be most effective when they are linked together, especially in areas that have the highest potential for rapid agricultural growth: Africa’s breadbaskets.

Breadbasket areas have relatively good rains, soil and infrastructure; large numbers of smallholder farmers; and governments committed to agricultural development. The question is how best to develop these areas.

Recently, a spate of land deals has been consuming huge tracts of African farmland. Although the headlines have faded, this trend has not gone away. As a result, countries and corporations from China, Great Britain, Qatar, Saudi Arabia, South Korea and other countries have entered into deals with governments from Kenya to Sudan, Congo, Mali, Senegal, Mozambique and Zambia. African governments have been trading away some of their best lands in exchange for one-time investments. African countries who are net importers of food and reliant on food aid are now bargaining their futures away, often with little transparency, regulation or environmental oversight. And small-

holder farmers are losing their already tenuous rights to the land.

It need not be so. African countries would benefit more — in terms of broad-based agricultural growth, increased food security and lower food prices — by investing in their own breadbaskets in ways that benefit the smallholder farmers who work them. In some situations, African countries can negotiate mutually beneficial terms with foreign investors. To create a win-win situation, these terms must include and uphold the interests of smallholder farmers. They should bring investment capital, training opportunities, infrastructure development and skills that benefit smallholder farmers.

Primarily, however, Africa must invest in its breadbaskets for its own benefit. This will take strong partnerships and significant resources, especially in the area of infrastructure development. Africa’s roads, power grids, storage facilities, clean water supplies and irrigation systems are all areas crying out for investment which is essential to the success of an African Green Revolution.

Africa has less infrastructure today than Asia had in the 1950s, and the negative impacts are staggering. It costs \$3000 to ship a container from Mombasa to Kigali next door. Whereas transport is 15% of the cost of the fertiliser to Asian farmers, it adds 40% to the cost of fertiliser to the African farmer.

One other thing is needed for breadbaskets to realise their potential: Africa’s farmers, especially its women farmers, must become better organised. They must aggregate to strengthen both their political power and their negotiating power. Farmers can use aggregation to improve their access to markets, including the carbon market.

## 6. Climate change

Climate change is perhaps the largest challenge facing Africa’s smallholder farmers. It could derail Africa’s Green Revolution.

Africa did not cause climate change — the continent contributes less than 3% of global greenhouse gas emissions — but we now bear its brunt. Climate change poses major threats to Africa’s smallholder farmers and to the continent’s food security. Mounting temperatures and intensified droughts are predicted to cut the yield of rain-fed agriculture by up to 50% in Africa. An

African Green Revolution must urgently help farmers to adapt to climate change. This will take technological, institutional and policy innovations, many of which can come only from public–private partnerships.

At the same time, Africa’s smallholder farmers can and must be part of the global solution. They can help mitigate climate change through sustainable farming practices that sequester carbon and conserve forests across hundreds of millions of hectares of land. Their efforts should be valued and included in the global carbon market.

## **Conclusion**

We reap what we sow. If African farmers are able to sow their fields using the high-quality improved seeds of Africa’s staple crops, using fertilisers tailored to the soils, crops and cropping systems of Africa, using sustainable soil, land and water management techniques, then they will reap enough to feed Africa and to help feed the world. If we apply the power of knowledge and technology to meet the needs of smallholder farmers, their communities and the natural environment we can transform African agriculture into a highly efficient, productive, competitive and sustainable system. This is the way forward for an African Green Revolution and for achieving a food-secure and prosperous Africa, a full partner in the pursuit of a food-secure and stable world. Let’s put our heads together, be bold, think outside the box, and commit ourselves to the changes needed.