

Ad Hoc Advisory Group to the Madrid Conference on Food Security  
Chaired by Prof. Jeffrey Sachs

# SMALLHOLDER FOOD PRODUCTION AND POVERTY REDUCTION

PRINCIPLES FOR A FINANCIAL COORDINATION MECHANISM  
(FCM) TO SUPPORT SMALLHOLDER FARMERS



REPORT  
January 26, 2009



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## Preface

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I am delighted that His Excellency Prime Minister Rodriguez Zapatero of Spain, invited Professor Jeffrey Sachs to lead an Ad Hoc Advisory Group on Food Security to develop recommendations for improving smallholder food production in the poorest countries. I congratulate the Government of Spain on this initiative. The practical recommendations in this report are bold and timely reminders that much more must be done to achieve an African Green Revolution.

This report calls for a new world partnership towards achieving global food security by empowering smallholder farmers to improve productivity and incomes. In particular, I welcome the establishment of the proposed financial coordination mechanism (FCM), aimed at rapidly improving smallholder agricultural productivity through a number of pertinent interventions such as input subsidy, investment and reduction in post harvest losses. This signifies a major turning point in the fight against hunger and extreme poverty.

Essentially, the report recognizes the need for specific actions to be undertaken at the national, continental and global levels to ensure food security. In summary these include: First, the need to build consensus at these levels and empower farmers to own and control agricultural and food production. Second the need for governments to increase substantially budgetary allocations to the agricultural sector. Third, the need to build up infrastructure to support smallholder farmers, including roads, bridges, storage, training and extension services, health and welfare facilities and marketing. Fourth, the need for significant increases in international financial support to agriculture. Fifth, increased private sector participation in agriculture, especially investment, research and the application of science and technology in agriculture.

I believe that the achievement of food security for all nations, rich or poor, must be the first development priority for any society. A well-nourished and healthy population is able to engage productively in economic pursuits and can participate constructively in social development processes. In contrast, food insecurity and dependency on food aid are incompatible with national sovereignty and human dignity.

By way of illustration the Malawi government began the process in 2005 to rid Malawi of the recurring scourge of hunger and malnutrition that had plagued the nation for decades. I have said many times that Malawi is capable of producing enough food to feed its people. I equally believe that developing and developed countries together have the capacity to produce enough food for all. Many countries in the world are blessed with good soil, adequate rainfall and abundant water resources. Many farmers are also hard-working and resourceful. Therefore, by improving their access to the proper inputs particularly fertilizer and improved seed, the world could become food secure and begin the transformation of the poor nations to economic prosperity.

We have tested these ideas and they indeed work. For the past four years the Malawi government has implemented a nation-wide agricultural inputs subsidy programme that enabled over two million smallholder farmers to benefit through reduced cost of fertilizer and improved seed. These farmers, mostly growing maize on less than one hectare, have responded positively to these incentives and have increased production and generated food surpluses, some of which was exported to our neighbours. In 2008/09, we allocated 14% of our national budget to the agriculture sector. This is the highest such allocation in Sub-Saharan Africa. The results have been spectacular and Malawi is now able to feed herself.

The strength of the report lies in the recognition that the global food crisis and economic recession should not divert investment away from smallholder agriculture. A global consensus has emerged of the imperative to redouble efforts to improved smallholder productivity and effect a transformation from subsistence to surplus and from survival to prosperity. I therefore believe that this report outlines a practical and affordable roadmap for achieving global food security. I encourage all governments and international agencies to lend their support.

*Dr Bingu Wa Mutharika  
President and Minister of Agriculture and Food Security, Republic of Malawi  
20 January, 2009*

“The Ad Hoc Advisory Group was chaired by Professor Jeffrey D. Sachs, at the invitation of President Jose Luis Rodriguez Zapatero in his capacity as Chairman of the IDEAS Foundation. All members of the Advisory Group volunteered their time, participated actively in the preparation of the report, and served in their individual rather than institutional capacities. The Advisory Group expresses its gratitude to President Zapatero and the IDEAS Foundation for the honour of participating in the important occasion of the Madrid High Level Meeting on Food Security for All, January 26-27, 2009. The Advisory Group also wishes to thank Ms. Aisha Dasgupta for her superb assistance with the preparation of the report”.

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#### **African Ministers of Agriculture and Permanent Secretaries who have expressed their support for the Report:**

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- Dr.Gyiele Nurah, Interim Minister of Agriculture, Ghana
- Chief of Cabinet Morlaye Toure, Guinea
- Minister Christopher Toe, Liberia
- Minister William Ruto, Kenya
- Minister Armand Panja Ramanoelina, Madagascar
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- Minister Abdessalem Mansour, Tunisia
- Minister Bright Rwamirama, Uganda

## Executive Summary

A billion people are in desperate hunger and their situation is made even more precarious by the global economic crisis. Millions of children are dying each year of chronic malnutrition. Hundreds of millions of the hungry and dying are in smallholder farm families. By boosting the productivity of smallholders, three great goals can be accomplished quickly: more food and food security for farm families and their societies (through lower food prices); greater incomes of the poorest of the poor; and the escape from poverty through the commercialization of subsistence agriculture.

This paper proposes a framework for supporting smallholder food production in the short term and the long term, in a way to achieve long-term sustainability of smallholder commercial farming. While we do not discuss emergency food assistance and nutrition programmes in this paper, we also strongly agree with the Comprehensive Framework for Action (CFA) on the Global Food Security Crisis and the World Food Programme that smallholder food production and food-and-nutrition assistance programmes are vital complementary components of a comprehensive strategy.

The means exist for a massive scale up of food yields and productivity through application of improved technologies. Financing is one of the limiting factors today. The World Bank has successfully expanded help for smallholders this past year through its bold and innovative fast-track Global Food Crisis Response Programme (GFCRP), including the establishment of a Multi-Donor Trust Fund (MDTF) for the Global Food Crisis, but was constrained sharply in its ability to act by lack of adequate additional donor funding for the MDTF. The time has come to scale up financing for inputs for smallholder farmers.

We propose a Financial Coordination Mechanism (FCM) to do just that. The FCM will help to solve many of the chronic problems that have plagued agricultural donor financing for a quarter century. The FCM will provide for greater scale, predictability, donor and recipient accountability, connection with the private sector, and country ownership. It will be a mechanism for attracting more donor resources, including from non-traditional donors. It will help to overcome long-standing market failures on the ground, such as the lack of private-sector financing of inputs, by strengthening local public-private partnerships for input financing.

*The FCM will not be a new vertical fund.* It will be a pooling and commitment mechanism for donors and recipients. There will be very little new bureaucracy. The FCM itself will be housed at an existing institution and rely on that institution as Trustee and administrative support. The World Bank's existing GFCRP could house the FCM. Indeed the new (but still under-capitalized) MDTF that is part of the GFCRP could itself become the FCM with a suitable modification of design and governance. Wherever the FCM is eventually based, the existing international institutions will continue to do their job, but the donor funding for fertilizer, seeds, and other needs of smallholders will flow straight to countries through a unified, transparent, and pooled source, rather than through a complex maze of the donor institutions themselves.

The CFA has recently underscored the importance of raising smallholder food production to meet the immediate needs of vulnerable populations, and then of sustaining the growth of food production through a combination of enabling policies and public and private investments in the agriculture sector. The basic strategy follows the recommendations of the CFA. In the short term, there are five basic actions, adapted from the CFA Menu of Actions (1.1 and 1.2), that are related directly to smallholder agriculture:

- Improve smallholder access to productivity improving locally adapted inputs (e.g., quality seeds, fertilizer, small irrigation pumps, animal feeds, and veterinary drugs and services) and knowledge through an integrated programme of smart subsidies<sup>1</sup>, extension and rural credit;
- Improve smallholder access to better post-harvest technologies and knowledge that reduce post-harvest storage losses, improve product quality, and promote value-addition through agro-processing (complementary and school feeding programmes, distribution, storage and food safety, research);
- Invest in rural and agricultural infrastructure (e.g., rural roads, electrification, small-scale irrigation, targeted large-scale irrigation, soil conservation structures);
- Remove bureaucratic obstacles to the transporting and trading of inputs and food;
- Enhance the nutritional contribution and impact of smallholder agriculture through the promotion of diversification (e.g., home gardens, legumes, and animal rearing), and stable community-based demand for the diversified production through community-based nutrition programmes, school meal programmes, and purchases by WFP and by programmes.

These short-term measures, operating over roughly a 3-year period, are expected to generate an immediate tangible impact on productivity and food security (e.g. Malawi's national input subsidy scheme). These short-term investments should be harmonized with a longer-term strategy (10-12 year) that enables local and regional market development, strengthens the private sector, sustains agricultural productivity growth of smallholders, and prepares for adaptation to climate change. The CFA identifies eight critical longer-term actions as well in the Menu of Actions for Section 2.2:

- Improve the enabling policy framework;
- Stimulate private investment in agriculture and agro business;
- Ensure secure access to and better community management of natural resources, including land, water, and biodiversity;
- Invest in agricultural research on food crops, animal production, and inland fisheries;
- Improve rural infrastructure
- Ensure sustained access to competitive, transparent and private-sector-led markets for food produce and quality inputs
- Support development of producer organizations
- Strengthen access of smallholders and other food chain actors to financial and risk management instruments

The strategy to support smallholder farmers should be contained within National Agriculture Plans (NAPs), which themselves are part of overall national development strategies.

There are many donors and many international organizations involved in supporting smallholder farmers. We applaud that diversity. These organizations fill important roles in a complex division of labour. However, as is well known, the large number of donors can create tremendous operational difficulties for aid recipients. The access to finance in the small farm sector is now even more constrained due to the problems in the world financial system and credit crunch. Thus there is an urgent need for a *transparent, quick-disbursing, evidence-based, and predictable stream of funding*, focused on critical inputs for smallholder production: improved seeds, fertilizer, small-scale water management, small-scale mechanization, and agricultural extension.

We therefore recommend that donors pool some significant *additional* resources in a Financial Coordination Mechanism (FCM) to ensure the rapid and effective scale-up of support for smallholder farmers. Salient features of the FCM will include the following.

- The FCM will not be a vertical fund. It will be a *financial pooling mechanism* just as its name implies. It will not have a large bureaucracy, nor will it provide international technical advice, a responsibility that will be left to existing institutions (FAO, WFP, World Bank, UNDP, IFAD, CGIAR, AGRA, AfDB, among others).
- The FCM will be housed at an existing institution, for example the World Bank, or the Millennium Development Goal (MDG) Fund at the UNDP, or at one of the Rome-based institutions (WFP, FAO, IFAD). The host institution will serve as Trustee of the FCM.

- Donors will each commit funding over a five-year period  
Most donors will commit their funds directly to the FCM (“pooling”), while others for legal and other reasons will maintain their funds in separate accounts but commit to co-finance with the FCM and participate in a unified decision-making and governance process with the FCM (“virtual pooling”);
- The FCM will be governed by its own Steering Committee, which will include representatives of donors (governments and foundations), international institutions (FAO, WFP, World Bank, IFAD, AfDB, UNDP, AGRA), the African Union, recipient governments, civil society, private sector, and NGOs
- Recipient governments will submit multi-year proposals to the FCM
- Proposals will be approved the Steering Committee of the FCM, based on the advice of an *independent* Technical Review Committee (TRC)
- Funds will be quick disbursing, overhead will be kept low, and FCM operations will be transparent
- The international institutions and bilateral donors will partner with the FCM, sit on its board, and work at country level to help design and implement the programs supported by the FCM
- The FCM will work closely with local and global private-sector providers (e.g. of fertilizer, irrigation, farm machinery) and with private-sector donors, to help ensure low-cost, high-volume and business-oriented flows of inputs, and to prepare the way for commercialization of smallholder inputs over time, including an expanded role of private financing of inputs.

Programmes will aim to provide critical inputs to smallholder farmers, and to facilitate the transition from subsistence to commercial agriculture. The FCM will encourage countries to make linkages between food production and local nutritional needs (e.g. through crop diversity, home gardens, small-scale poultry and aquaculture, school-meal programmes using locally produced foods). The first programmes (three-years in duration) will focus on access to inputs through “smart subsidies” for smallholders lacking market access to credits. Subsequent rounds will emphasize sustainability through the expansion of rural credit, diversification, marketing, research, and long-term rural infrastructure development. The FCM will work with the international institutions (World Bank, FAO, IFAD, WFP, CGIAR, and others) to offer countries technical assistance to support national governments in preparing submissions to the FCM.

Fifteen countries, mainly in Africa, but not limited to Africa, would be anticipated to be in a position to apply for grants in 2009. The number of FCM grantee countries would rise to around 25 in 2010, and 40 by 2013. Annual disbursements are projected to rise from around \$1 billion in 2009 to around \$6 billion in 2012. This is based on a funding estimate of approximately \$100 per household, and target coverage of around 60 million households in low-income food-deficit countries by 2013. Typically, each household will have a farm of around 1 hectare, though this will vary by agro-ecological zone and between smallholder cultivators and pastoralists.

## Introduction

A billion people are in desperate hunger and their situation is made even more precarious by the global economic crisis. Millions of children are dying each year of chronic malnutrition. Hundreds of millions of the hungry and dying are in smallholder farm families. By boosting the productivity of smallholders, three great goals can be accomplished quickly: more food and food security for farm families and their societies (through lower food prices); greater incomes of the poorest of the poor; and the escape from poverty through the commercialization of subsistence agriculture.

This paper proposes a framework for supporting smallholder food production in the short term and the long term, in a way to achieve long-term sustainability of smallholder commercial farming. While we do not discuss emergency food assistance and nutrition programmes in this paper, we also strongly agree with the CFA and the World Food Programme that smallholder food production and food-and-nutrition assistance programmes are vital complementary components of a comprehensive strategy.

The means exist for a massive scale up of food yields and productivity through application of improved technologies. We must substantially increase efforts to promote smallholder agriculture including programmes designed to maximize access by women and the poor to land and other critical inputs and services. Financing is one of the limiting factors today. The World Bank has successfully expanded help for smallholders this past year through its bold and innovative fast-track Global Food Crisis Response Program (GFCRP), including the establishment of a Multi-Donor Trust Fund (MDTF) for the Global Food Crisis, but was constrained sharply in its ability to act by lack of adequate additional donor funding for the MDTF. The time has come to scale up financing for inputs for smallholder farmers.

We propose a Financial Coordination Mechanism (FCM) to do just that. The FCM will help to solve many of the chronic problems that have plagued agricultural donor financing for a quarter century. The FCM will provide for greater scale, predictability, donor and recipient accountability, connection with the private sector, and country ownership. It will be a mechanism for attracting more donor resources, including from non-traditional donors. It will help to overcome long-standing market failures on the ground, such as the lack of private-sector financing of inputs, by strengthening local public-private partnerships for input financing.

The FCM *will not be a new vertical fund*. It will be a pooling and commitment mechanism for donors and recipients. There will be very little new bureaucracy. The FCM itself will be housed at an existing institution and rely on that institution as Trustee and administrative support. The World Bank's existing GFCRP could house the FCM. Indeed the new (but still under-capitalized) Multi-Donor Trust Fund that is part of the GFCRP could itself become the FCM with a suitable modification of design and governance. Wherever the FCM is eventually based, the existing international institutions will continue to do their job, but the donor funding for fertilizer, seeds, and other needs of smallholders will flow straight to countries through a unified, transparent, and pooled source, rather than through a complex maze of the donor institutions themselves.

Some existing institutions reportedly resist the pooling mechanism, arguing that "existing mechanisms" can do the job. Yet when the World Bank wanted to act, for example, it required a novel mechanism precisely because the existing "pipes" could not carry the expanded load at the scale, transparency, predictability, flexibility, and country-ownership needed. The world needs one predictable funding stream for smallholder inputs, rather than two-dozen small and under-capitalized funding streams.

The UN Comprehensive Framework for Action on the Global Food Security Crisis (hereafter CFA) has recently underscored the importance of raising smallholder food production to meet the immediate needs of vulnerable populations, and then of sustaining the growth of food production through a combination of enabling policies and public and private investments in the agriculture sector (UN 2008). This paper proposes a framework for supporting smallholder food production in the short term and the long term, in a way to achieve long-term sustainability of smallholder commercial farming. While we do not discuss emergency food assistance and nutrition programmes in this paper, we also strongly agree with the CFA and the World Food Programme that smallholder food production and food-and-nutrition assistance programmes are vital complementary components of a comprehensive strategy. **(Box 1)**

Smallholder agriculture in Sub-Saharan Africa, Haiti, Afghanistan and many other low-income regions is at a crisis point. For decades, the majority of Africa's small-scale farmers, living on less than two hectares, or raising livestock in impoverished settings, have grown food crops and raised livestock without access to critical inputs: fertilizer, improved seed, adequate extension advice, veterinary care for animals, and small-scale water management. Most smallholder farmers grow their crops under rain-fed conditions and suffer the seasonal consequences of increasingly erratic rainfall. Pastoralists often live in marginal lands increasingly beset by climate changes such as more frequent and intense droughts. For two decades, donors have cut aid to this sector, and are just now beginning to revive it. Much more needs to be done, and urgently.

Cereal yields in Africa have stagnated at about 1.0 metric ton (MT) per hectare over the past 40 years, while in East Asia cereal yields increased more than four-fold. The same stagnation is true in Haiti and some other impoverished regions. These smallholders are caught in a perverse poverty trap of low productivity, unable to afford fertilizer, improved seed or irrigation. Extension services have been crippled by budget cuts, inadequate transport and related low morale. For more than twenty years, donors systematically reduced their support to agriculture. As a result, most subsistence smallholders are now net consumers of food and, along with urban consumers, are hard hit by the current global food crisis. Low-income pastoralists similarly suffer from food insecurity and extreme poverty, and pastoralists are anticipated to be among the most adversely affected groups by human-induced climate change.

The most compelling evidence of successful agriculture-led poverty reduction comes from the Green Revolution in Asia. During the past three decades, this region experienced unprecedented economic growth and structural transformation. Poverty declined from 50% in the 1970s to 18% in 2004, while hunger declined from 30% to 16% over the same period. Asia's Green Revolution began in the 1960s with the development and dissemination of fertilizer-responsive, high-yielding varieties of rice and wheat. Improved access to fertilizer through state-supported subsidies, rural credit, and improved infrastructure, contributed to strong productivity growth in both crops. Asian governments supported the uptake of new technology through research and extension, and intervened in the market through price support.

With an improved understanding of Africa's (and other low-income countries') challenges and potential, and benefiting from the lessons of Asia's Green Revolution, a more positive outlook for agriculture has emerged in recent years. On 5th July 2004, a group of African Heads of State and Government, ministers, scientists, and development specialists met at the United Nations Conference Centre in Addis Ababa, Ethiopia, to share practical, innovative solutions for cutting hunger by half before 2015. The highlight of the event, co-convened by the Government of Ethiopia and the UN Millennium Project, was a call by then UN Secretary General Kofi Annan for a "uniquely African Green Revolution."

The conditions are now in place for a first Green Revolution in Africa, Haiti, and other regions still suffering from low agricultural productivity, as well as for a "Second Green Revolution" in India and other sites of the first green revolution. A 21<sup>st</sup>-century Green Revolution will build on, and improve upon, the first, by placing greater emphasis on environmental sustainability, community leadership, and a management revolution in smallholder farming. These points are emphasized by one of the fathers of the Indian Green Revolution, Dr. M. S. Swaminathan, in his call for an "Ever-Green Revolution." **(Box 2)**

In Africa, both in Sub-Saharan Africa and North Africa, there is unprecedented political commitment from the Continent's leaders<sup>ii</sup>. The New Partnership for Africa's Development

(NEPAD)'s Comprehensive Africa Agriculture Development Programme (CAADP) was launched to improve policy coherence and to mobilize investment around four strategic themes: land and water management; infrastructure and markets; food supply and ending hunger; and research, technology dissemination and adoption. The Alliance for a Green Revolution in Africa (AGRA) was established in September 2006 by the Rockefeller Foundation and the Bill and Melinda Gates Foundation, in order to spur rapid rural economic growth through multi-partner investments across the agricultural value chain. Chaired by Kofi Annan, AGRA's initial investments support better seed systems, improved soil health and improved smallholder access to water and markets. Other parts of the world, including Latin America and Asia, are also demonstrating a renewed determination to support smallholder farmers.

The years 2007 and 2008 marked the onset of an acute hunger crisis, resulting from the rise of global food and energy prices and the slowing of the world economy. Another 75 million or so were added to the world's hungry. The CFA was established to address the food crisis and the rising numbers of people trapped in hunger. The CFA emphasizes the importance of raising smallholder food production to meet the immediate needs of vulnerable populations, and then of sustaining the growth of food production through a combination of enabling policies and public and private investments in the agriculture sector. At the Hokkaido (Toyako) Summit in July 2008, the G8 pledged to work with the international community along the lines of the CFA and urged "the relevant stakeholders to swiftly implement plans to achieve prompt delivery for countries in need." The importance and potential of smallholder agriculture is also emphasized by FAO, most recently in *The State of Food Insecurity in the World 2008*.

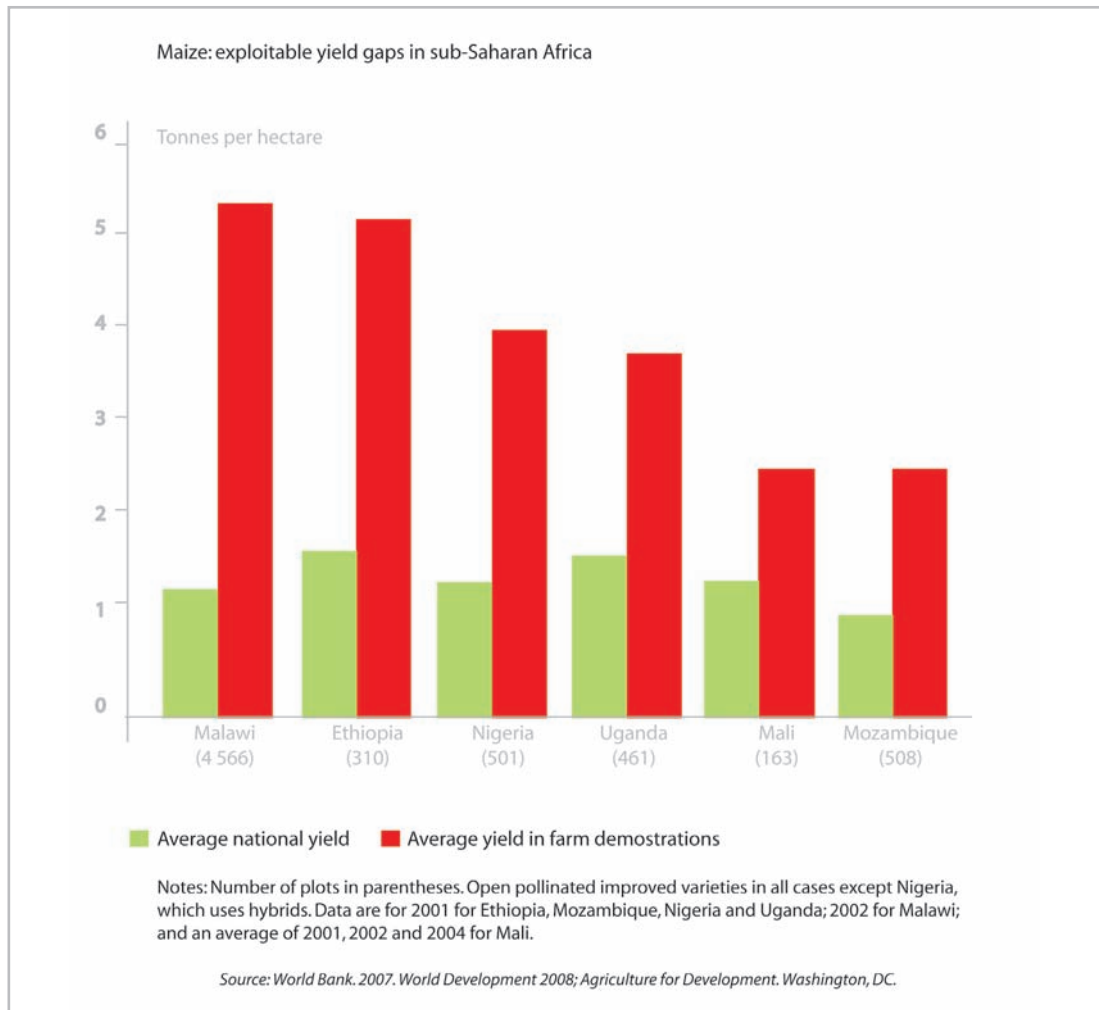
Global cereal demand is projected to be very strong in the coming decades. Unless global grain supplies are expanded, and at an accelerated rate, food prices will remain high, if not driven up even further. Higher food prices affect everyone, but especially the poor, who spend most of their disposable income to eat. Increasing supply, primarily through the generation and diffusion of productivity-enhancing new technology, is necessary to keep food prices down and is thus a prerequisite for securing minimum nutritional standards for the poor.

The scientific underpinning of agricultural productivity improvements in smallholder agriculture has been strengthened by more than three decades of research by the international research centres of the Consultative Group on International Agricultural Research (CGIAR) and their national, sub-regional and regional partners. CGIAR-supported centres spend more \$200 million annually on agricultural research for African smallholders. Furthermore, millions of dollars of research and development investments by the private sector that have also brought great benefits to smallholders in many parts of the world, but those benefits have not reached most smallholders in Africa because poverty, weak infrastructure, and gaps in policy impair the effectiveness of market systems. It is time to reap the benefits of these public and private investments in Africa and all food-deficit regions.

The means for improving agricultural productivity are well known. There are successful pilot projects in almost all low-income countries; but few have been taken to national scale. For most African and other food-deficit low-income countries' smallholders, productivity improvement can be rapidly achieved through the increased use of fertilizer and improved seed, the provision of supplemental irrigation and water harvesting to offset dry spells and extend the growing season, and the deployment of trained, equipped and motivated extension service. At the same time, social, institutional, and governance dimensions at the community level have all proven to be of enormous importance as well, for economic and environmental sustainability<sup>iii</sup>. Appropriate systems need to combine technology and effective institutions, such as farmer-to-farmer systems, and community-based management of natural resources. The potential massive productivity gains are underscored by data in the FAO's recent *State of Food Insecurity* (2008), where the data show the enormous gap between actual yields (around 1 ton per hectare) and potential yields of 3-5 tons per hectares as achieved in farm demonstration projects. **(Figure 1)**

This enormous boost of productivity is not merely a result achieved on demonstration plots. It can be achieved, and quickly, even at the national scale. Since 2005, Malawi has successfully proven the benefits of a voucher-based mass distribution of fertilizer and high-yield seeds to impoverished smallholder farmers. The results have been startling. For three harvests in a row, Malawi generated a food surplus based on a substantial increase in food production. It has

Figure 1.- Source: FAO, 2008.



accomplished this at a tiny fraction of the cost of providing Malawi's food needs through international food aid. **(Box 3)**

Another successful example is the Purchase for Progress (P4P) programme led by the World Food Programme, and recently praised by UN Secretary-General Ban Ki-Moon as one of the most innovative and promising initiatives to support low-income and smallholder farmers in the developing world. This programme aims to help smallholders get stable demand for their produce and gain access to credits, inputs, and markets to produce and sell surplus food. **(Box 4)** Yet another very important and large-scale success is the Indian Programme "Rashtriya Krishi Vikas Yojana", where the State Governments are invited to prepare specific proposals for bridging the gap between potential and actual yields of major crops at the level of each district. Already there is evidence that such a coordinated and sharply focused funding mechanism is having a good impact on enhancing small farm productivity. **(Box 5)**

An example of a large-scale programme aimed at eradicating hunger in Latin American is the "Fome Cero" Programme which was launched in Brazil in 2003, and focused on Food as a Right for All. The 30 complementary programmes were directed to 25% of the Brazilian population: the three million poor families that depend on small agriculture, and more than ten million low income households. The four areas of intervention are (i) food access through conditional transfers, complementary feeding, food banks, popular canteens, urban agriculture and food for education; (ii) income generation with microfinance programmes, development of people skills and cooperatives support; (iii) Smallholder agriculture support through harvest insurance, food purchase through public institutions (hospitals, schools, food aid) and production extension services; (iv) and articulation of citizen participation in the programme. Fome Cero has achieved great impact on families, where children have reduce the frequency of stunting by 62%. The fact that the programme has addressed productive and social constraints has been one of the keys to the success of the Brazilian government.

Another notable success in Latin America, with important lessons for Africa, is the Educampo Programme of the Mexican Foundation for Rural Development Project, which raised the productivity of nearly 1,500 poor Mexican farmers from 1.7 tons per hectare to 6-7 tons per hectare, through advanced training in best management practices.

Information and communication technologies (ICTs) enable the gains in smallholder productivity to diffuse in rural communities at vastly greater speeds than in the past. Tools include new web-based products, cell phones, training tools and precision agriculture products, such as:

- Worldwide agronomy networks
- Electronic library
- Back-to-Basic web sites - #1 soil fertility site on Google.
- Computer-based decision tools. Example: Nutrient Manager for rice.
- Mobile phone networks with direct access to advisors or information networks.
- Satellite imagery
- Electronic training courses
- Web X training tools
- Certified crop advisor programmes

*The fundamental agriculture challenges now facing African and other food-deficit low-income countries are twofold:*

- *to invest in national-scale programmes to enable smallholder farmers and communities to reap the benefits of improved technologies;*
- *to build rural institutions to ensure sustainability of these benefits, through community-based management of natural resources, modern management systems for farming, including farmer cooperatives, self-help groups, and contract farming, new opportunities for off-farm employment, including agro-processing and rural services, and strengthening of the private sector.*

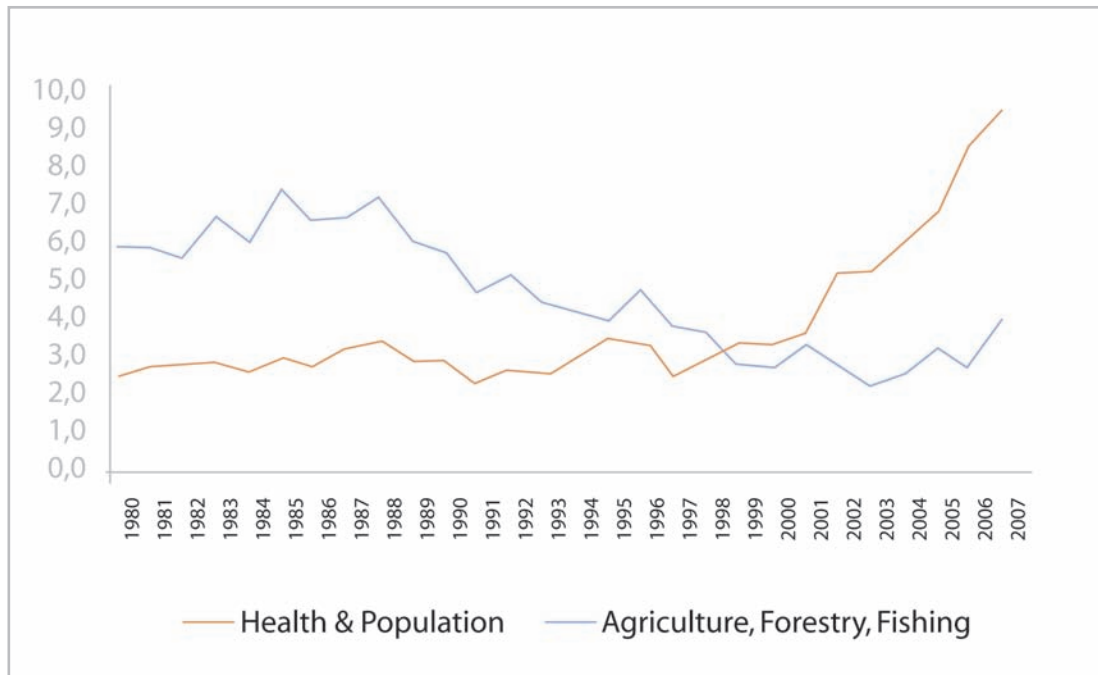
## Need for Increased Funding for Smallholder Farmers

There has been a sharp decline of aid to agriculture since 1980, as shown in Figure 2. The figure records total Official Development Assistance (ODA) for agriculture of the Development Assistance Committee (DAC) countries, measured in constant \$US 2006, and compared with ODA for health. In the case of agriculture, aid has declined by roughly half, from a peak of around \$7 billion per year in the mid-1980s to a low of around \$3 billion in the mid-2000s. There has been a slight uptick in 2007, and the data for 2008 are likely to establish an even stronger rise. We aim to support and help build on this recent recovery in aid to agriculture.

It is interesting and important to compare the trend in agriculture with the health sector. ODA for health remained at approximately \$3 billion for twenty years or so, but has expanded remarkably in the current decade. By 2007, ODA to health is roughly three times the level of 1980 (\$9 billion compared with roughly \$3 billion in 1980). Part of that increase resulted from new financing mechanisms established to promote quick disbursements of key life-saving interventions.

The cut in agriculture aid was heavily ideas-driven, based on the notion that smallholder agriculture would be modernized through market forces and privatization. Along with the cuts in donor support, state enterprises were privatized, agricultural extension was sharply curtailed, and government subsidies were eliminated. As the World Bank has made clear in several important recent studies, including the Independent Evaluation Group Report on *World Bank Assistance to Agriculture in Africa* (2007) of the World Bank's and the 2008 *World Development Report*, this strategy failed, since markets did not in fact replace the drop in aid. Critics of the structural adjustment approach to agriculture had already emphasized back in the 1980s that markets alone would not work for smallholder farmers who lacked the creditworthiness, collateral, market access,

Figure 2. Official Development Assistance for Agriculture and Health (\$US 2006 billions)



OECD.Stat, ODA by Sector, converted to constant dollars using overall ODA price deflator (Data provided by Brian Hammond, OECD, retrieved on 1/9/2009). Agriculture refers to agriculture, forestry, and fishing.

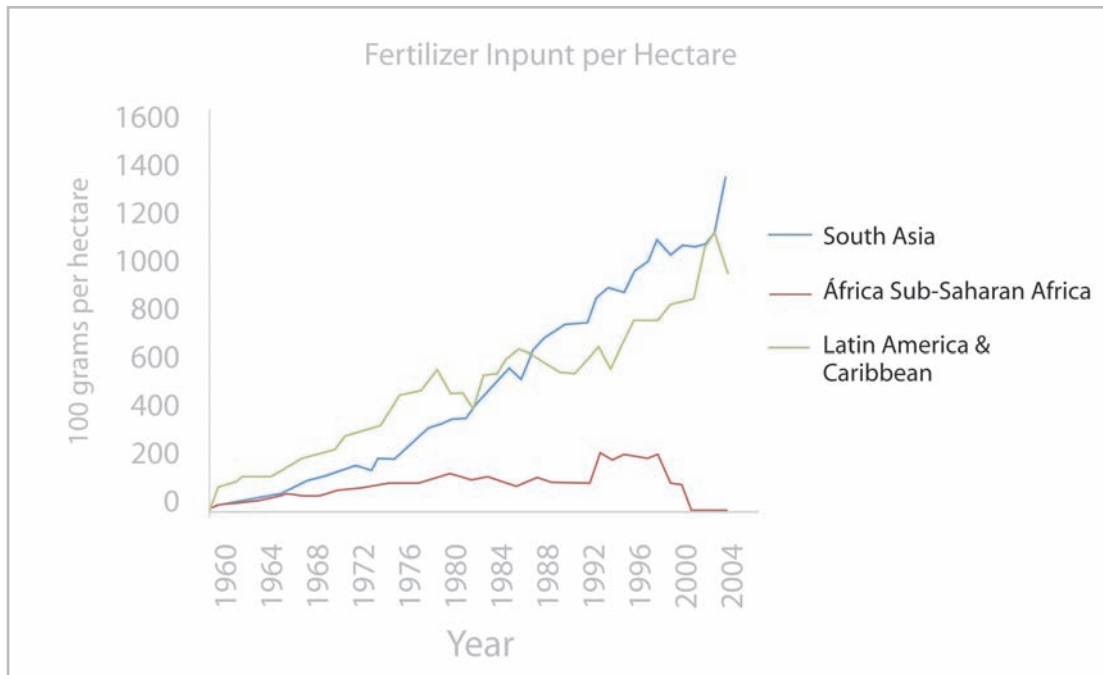
and basic infrastructure to participate effectively in markets. They emphasized that Asia's Green Revolution was a public-private partnership, including substantial subsidies and government credit schemes to ensure access of smallholders to the critical input package.

The result since the early 1980s in Africa and other impoverished regions has been that smallholder farmers have been unable to access basic improved inputs – especially improved seed, fertilizer, small-scale water management, and extension services – resulting in a poverty trap.

The trap has worsened appreciably as soil nutrient depletion, especially nitrogen, has intensified because of the lack of fertilizer use. The dramatic inability of African farmers to access fertilizer is now well appreciated, and is illustrated in **Figure 3**. (The situation is even more dramatic than depicted, since the low fertilizer use in Africa is almost entirely directed to cash crops, so that the actual use on staple food products is even lower than shown). This lack of improved inputs is the single most important factor in the continued poor yields in smallholder farming in Africa. Put conversely, the package of improved inputs was the key to the Asian Green Revolution, and remains the core of the forthcoming African Green Revolution.

The rise in ODA for health provides several vital lessons for re-establishing an effective and credible aid programme for agriculture and for scaling up critical interventions. The increase in aid for health came in the early years of this decade, following the realization that, as in agriculture, the cuts in aid during the 1980s and 1990s had not revived the health sector, and indeed had prevented the poorest countries from confronting several emerging health catastrophes, most notably the HIV/AIDS pandemic, the resurgence of malaria, and the spread of drug-resistant TB. The Commission on Macroeconomics and Health (2001) of the World Health Organization (WHO) called for a significant scaling up of donor resources to the health sector. Two new special funds were created: the Global Alliance for Vaccines and Immunization (GAVI, 2000) and the Global Fund to Fight AIDS, TB, and Malaria (GFATM, 2001). The World Bank initiated a special fast-track programme as well for AIDS scale-up and then later for malaria scale up. These were followed by two important U.S. Government initiatives, President's Emergency Plan for AIDS Relief (PEPFAR, 2003) to prevent and treat HIV/AIDS, and the President's Malaria Initiative (PMI, 2005) to control malaria. UNICEF, WHO, and international NGOs (including the Carter Center, Rotary International, Novartis Foundation, and others) have scaled up programmes to fight specific diseases including measles, leprosy, schistosomiasis, Guinea worm, under-nutrition, and others.

Figure 3. Negligible Fertilizer Use in Sub-Saharan Africa



World Bank World Development Indicators

The two special funds created this decade (GAVI and GFATM) deserve special mention, since they have enabled recipient governments to achieve rapid national-scale impacts based on targeted inputs and results-based management. This is in line with the intentions of the FCM in agriculture. Both GAVI and GFATM have succeeded in a massive and rapid uptake of low-cost, high-return interventions, including a range of new vaccines, and control measures for AIDS, TB, and malaria. A summary of results for GAVI is shown in **Example 1**, and for GFATM in **Example 2**.

Various other forms of donor assistance – from the World Bank, bilateral programmes, and sector-wide approaches (SWAPs) have simultaneously helped to bolster health systems along side the targeted quick-impact measures. There is a growing sentiment that greater targeted funding for health systems (including physical infrastructure, training, and salary support) could usefully complement or build upon the targeted funding for specific disease control measures.

Both GAVI and GFATM share key strengths, including:

- Donor resources are pooled into a single fund to support national strategies, thereby streamlining the scaling up of financing and ensuring its transparency
- Funding approvals are based on technical assessments made at the international level
- Funding commitments are made over several years, enabling countries to undertake multi-year programmes
- Programmes are quantified regarding inputs, salaries, and expected outcomes
- Programmes rely on proven packages of technologies
- Results are monitored, audited, and evaluated
- Each fund is supported by an alliance of partners, including donor governments, private-sector organizations, foundations, international agencies, scientific advisors, and recipient governments

It is important to emphasize that GAVI and GFATM do not operate in isolation of other international institutions and the private sector. Their effectiveness indeed depends on being part of a global network of institutions including the WHO, the World Bank, UNICEF, bilateral donor agencies, pharmaceutical companies, foundations, and others. Yet by mobilizing large-scale and rapidly disbursed funding, GAVI and GFATM also have empowered these other institutions as well. All have benefited from the availability of quick-disbursing resources which can be put to use in coherent programmes of health scale up. Even though GAVI and GFATM are focused on specific interventions, their partnerships with other institutions helps to ensure that together they and the recipient countries are working towards more effective health systems.

**Example 1. The GAVI Results During 2000-2007**

Since its creation in 2000, the GAVI Alliance has helped to increase significantly the number of children worldwide who have access to immunisation.

WHO estimates and projections for the period 2000-2008 show GAVI support has:

- \* prevented a cumulative 3.4 million future deaths. (This was estimated to be 2.8 million for the period 2000-2007);
- \* protected a cumulative 50.9 million children with basic vaccines against DTP3 (diphtheria, tetanus, and pertussis.) (This was estimated to be 37.9 million for the period 2000-2007);
- \* protected a cumulative 213 million children with new and underused vaccines (This was estimated to be 172 million for the period 2000-2007);

This figure of 213 million represents the total number of children reached with any GAVI-supported vaccine, corrected so that children receiving multiple vaccines are not double-counted.

The breakdown of new and underused vaccine coverage show:

- \* a cumulative 192.2 million children have been immunised against hepatitis B (This was estimated to be 155.7 million for the period 2000-2007);
- \* a cumulative 41.7 million children have been immunised against Haemophilus influenzae type b (Hib) (This was estimated to be 28.2 million for the period 2000- 2007);
- \* a cumulative 35.6 million children have been immunised against yellow fever (This was estimated to be 26.3 million for the period 2000-2007).

Since the GAVI Alliance inception, spending on routine immunisation in GAVI implementing countries has risen from all sources.

SOURCE: [http://www.gavialliance.org/performance/global\\_results/index.php](http://www.gavialliance.org/performance/global_results/index.php)

**Example 2. The GFATM Results during 2002-2007**

By 1 December 2008, the Global Fund had signed grant agreements worth US\$ 10.2 billion for 579 grants in 137 countries, and has disbursed US\$ 6.8 billion to grant recipients.

Results as of 1 December 2008 show that Global Fund-supported programmes have significantly expanded the delivery of key services, with:

- \* AIDS treatment for 2 million people currently on antiretroviral (ARV) treatment for HIV
- \* TB treatment for 4.6 million people under Directly-Observed Treatment, Short-course (DOTS)
- \* Distributing 70 million insecticide-treated bed nets (ITNs) distributed to protect families from malaria, saving an estimated 2.5 million lives

The Global Fund supports integrated country strategies to fight the three diseases. Additional results in treatment, prevention and care include:

- \* 62 million people reached with HIV counseling and testing
- \* 3.2 million orphans and vulnerable children provided with basic care and support
- \* 91 million people reached with community outreach services
- \* 8.6 million health or community workers trained to deliver services for prevention and treatment of AIDS, TB or Malaria.

Source: <http://www.theglobalfund.org/en/results/?lang=en>

## How an FCM will assist both donors and recipients

A new Financial Coordination Mechanism (FCM) for smallholder agriculture will produce quick impacts of improved food security and higher yields. These gains will become financially sustainable over time, especially since they will be carried out in conjunction with a broader range of reforms supported by the international community. The FCM will be a part of an overall global partnership for food security, not something that stands outside of the partnership. Programmes by the World Bank, AfDB, FAO, IFAD, WFP, AGRA and other agencies will complement the input support offered by the FCM. And by speeding the flow of resources to smallholders, the FCM will improve the performance of the partner institutions. A brief listing of key partner institutions is provided in **Example 3**.

While the FCM itself focuses heavily on the financing of inputs, we fully recognize that a supply-side approach based on inputs for smallholders is necessary but far from sufficient. Sustainable rural development requires at least three more dimensions of change, to be provided by host governments and international institutions: (i) great emphasis on rural development in national decision-making and budgeting; (ii) the encouragement of institutions that help to overcome market failures of smallholder agricultural production (including access to financing, appropriate risk management, suitable technology and the provision of public goods); and (iii) the promotion of the smallholder farmers' voice and their participation, in a more active way, in the collective decision-making processes both at the local and national levels.

### **Example 3. Leading International Institutions in the Fight Against Hunger**

*The FCM would complement the work of a network of global institutions involved with support of smallholder agriculture in low-income, food-deficit countries. Its core function would be quick-disbursing aid for agricultural inputs and support in the transformation of subsistence smallholder farming to commercial farming. Other key institutions and their respective roles include:*

- *Food and Agriculture Organization (FAO): the leading normative body for global food and agriculture, as well as provider of technical assistance*
- *World Food Programme (WFP): the leading provider of food-and-nutrition assistance programmes, including emergency food aid, as well as longer-term support for nutrition through food assistance (e.g. school meal programmes) and safety nets, local purchase, logistics and large-scale deep field delivery capacity*
- *Alliance for a Green Revolution in Africa (AGRA): Gates Foundation funded-institution for catalytic programmes in soils, water, markets*
- *Consultative Group on International Agricultural Research (CGIAR): Tropical agriculture research units (in need of increased funding)*
- *International Fund for Agricultural Development (IFAD): Rome-based agency undertaking innovative rural development projects*
- *World Bank (WB): World Bank increasingly funds agricultural development programmes after a long hiatus*
- *European Union (EU): Lead donor for Africa, whose recent commitment of 1 billion Euro during 2008-2010 leads the new round of scale up for smallholder farmers*
- *African Development Bank (AfDB): Lead institution focusing mainly on infrastructure investment in Africa, including rural infrastructure, with interest in promoting lower-cost fertilizer availability through improved logistics and various economies of scale*
- *Asian Development Bank (ADB): Undertakes extensive programmes in rural development, agricultural productivity, and nutrition in Asia*
- *Inter-American Development Bank (IDB): Undertakes extensive programmes in rural development, agricultural, productivity, and nutrition in Latin America and the Caribbean*

*All efforts will be made to harmonize the programmes funded by the FCM with the work of these other organizations and donors, for example, through the inclusion of representatives of these institutions on the Steering Committee of the FCM.*

There are five major shortcomings to the current financing arrangements for agricultural inputs for smallholders that the FCM will help to overcome:

- Chronic underfunding of overall needs and opportunities
- High fragmentation of donor funding for agriculture and low donor accountability
- Lack of multi-year predictability of donor support
- Donor-driven rather than country-driven programmes
- Lack of adequate coordination with the private sector

*Chronic Underfunding.* The UN Secretary General's MDG Africa Steering Group identified external grant needs of \$8 billion per year as of 2010 for African agriculture. As shown in **Table 1**, actual aid commitments are roughly one-fourth of the needed level, around \$2 billion per year. Note, in fact, that the \$2 billion recorded in 2007 are commitments, with actual disbursements likely to have been lower. Moreover, the aid is highly dispersed across donors, and extremely difficult for low-income African countries to mobilize.

*More than a dozen low-income food-deficit African countries sought donor financing for inputs in 2007 but were unable to secure it.*

Existing institutions play a vital role, but do not provide national-scale financing for needed inputs. The International Fund for Agricultural Development (IFAD), for example, plays an invaluable role in identifying and launching innovative development programmes for smallholder communities, but IFAD does not have the funding or donor mandate for national-scale inputs programmes. IFAD's total programme commitments for Sub-Saharan Africa for 2007 came to \$155 million, and the average for 2005-7 was \$95 million. Even with the new donor commitments for IFAD of an additional \$1.2 billion over three years for all regions of the world, IFAD will lack the flow of funds needed to support national-scale input programmes in Africa.

The largest single donor, IDA, provided an average of \$300 million per year in total funding for agriculture for Sub-Saharan Africa, for a wide variety of programmes. This amount is likely to rise. The World Bank has recently boldly stepped up its disbursements for smallholder inputs to around \$300 million in the final six months of 2008 as part of its Global Food Crisis Response Program (GFCRP). This is a very important and bold step forward, but is still far below what is needed and has not been at the size per country to finance national-scale programmes.

*Still, IDA has reached practical limits of scale up with its current funding levels. This is why the World Bank itself has launched a Multi-Donor Trust Fund, which could indeed become the FCM. So far the Multi-Donor Trust Fund has not yet attracted the scale of donor commitments needed. By forming the FCM, it could do so.*

FAO has similarly advocated a special fund of \$1.7 billion on an urgent basis for smallholder inputs, but raised only a small fraction of that in appeals to donors during 2008. The rest of the ODA for agricultural was divided among a large number of donors, with 17 bilateral donors each providing under \$50 million per year in specific programmes and projects. Little of this went for commodity support for improved seed, fertilizer, small-scale water management, and extension.

The FCM is therefore needed because existing financing mechanisms will not reach the required financial scale. New mechanisms such as the World Bank's (MDTF) as part of its GRCFP, could be the precursor of the FCM. The FCM is therefore vital for practical scaled success in 2009 and beyond<sup>iv</sup>. Moreover, the FCM will provide a vital focal point for public campaigning and advocacy for increased donor funding for smallholder farmers. Taxpayers in donor countries would see quick impacts and clear results with donor funds, as they have with GAVI and GFATM. They will also know "where their money is going" for smallholders. The result will be not only predictability and accountability, but also increased overall public support and funding.

*High fragmentation and low donor accountability.* The challenge is not only chronic underfunding, but the multiplicity of donors. When countries need funding for urgent scale up of agriculture programmes, they have no single place to turn. The World Bank, IFAD, and FAO all deserve enormous credit for championing the cause of smallholders in recent years, but none of these organizations has had the financial heft to respond at scale. Funding from bilateral donors is even more fragmented. The

FCM will provide critical accountability vis-à-vis the donors. The world would know how much has been committed for smallholder farmers. Recipient countries will be assured that technically sound programmes would be approved. Non-Governmental Organizations would be represented on the Steering Committee of the FCM, and thereby play a constructive role in monitoring its performance.

*Lack of donor predictability.* Most of the donors, including almost all of the bilateral donors, do not currently make multi-year commitments to smallholder input financing. Therefore the plans that are being financed are not only insufficient in scale but are also very short term in nature. The FCM will enable donors to make multi-year commitments and recipient countries to make multi-year programmes in ways that have simply not been possible in recent years. GAVI and GFATM have demonstrated how committed pooled funding mechanisms can support multi-year donor commitments.

*Donor-driven rather than country-driven programmes.* For more than 20 years, the agriculture agenda was driven mainly by the international donors rather than by the low-income food-deficit countries. Now it is also time to put the recipient countries in the driver seat of their own policies.

**Table 1. Donor Support for Agriculture in Sub-Saharan Africa, 2005-7**  
(ODA commitments, \$ millions)

Donor			2005	2006	2007	Average
(All)			1.053,8	1.378,0	2.092,5	1508,1
(All)	Bilateral		637,1	584,1	1.240,9	820,7
	Bilateral	Australia	0,4	2,1	0,6	1,0
		Austria	4,8	5,2	3,0	4,4
		Belgium	66,4	53,5	53,2	57,7
		Canada	43,5	5,9	41,4	30,3
		Denmark	115,0	2,5	31,5	49,6
		Finland	0,1	1,2	1,9	1,1
		France	32,1	87,7	342,4	154,1
		Germany	66,9	54,3	56,3	59,2
		Greece	0,2	0,1	0,5	0,3
		Ireland	12,7	22,6	24,8	20,0
		Italy	3,1	10,4	13,6	9,0
		Japan	59,2	66,1	73,4	66,2
		Luxembourg	1,4	1,8	6,7	3,3
		Netherlands	36,2	19,0	20,7	25,3
		New Zealand	0,1	0,1	0,0	0,1
		Norway	20,8	50,3	40,6	37,3
		Portugal	1,3	0,5	0,9	0,9
		Spain	4,0	5,6	16,8	8,8
		Sweden	5,9	60,6	18,1	28,2
		Switzerland	15,7	19,0	13,0	15,9
		United Kingdom	45,1	30,7	18,3	31,4
		United States	102,3	84,8	463,1	216,7
	Multilateral		416,7	793,9	851,6	687,4
		AfDF	146,4	180,5	182,1	169,7
		EC	65,8	125,4	114,8	446,6
		IDA	125,4	446,6	327,8	300,0
		IFAD	78,6	51,5	155,4	95,1
		UNDP	0,5	0,5	0,0	0,4

Source: OECD.Stat, retrieved on 1/9/2009.

The FCM is designed to enhance country ownership. Financing decisions will be taken transparently through an independent technical review at the international level. Of course, donors and international institutions will play an enormous role in the design of the national plans, through consultations, technical advice, technology transfer, and more. Decisions will be made more systematically and with much better results than during the past quarter century.

Each country will need, over time, to enrich its long-term agriculture strategy to guide its activities. These strategies will need to be developed in participatory ways with key stakeholders, based on evidence-based policy analysis, and modified over time to reflect lessons learnt, if these strategies are to successfully guide and coordinate the activities of a number of disparate agents. **(Box 6)**

*Lack of adequate coordination with the private sector.* The private sector, both local and international, traditionally has a difficult time establishing an effective partnership with the official donor community. Just as with the recipient countries themselves, the private sector is lost in the maze of two-dozen donor agencies, various rules, unclear procurement schedules, and the general unpredictability of aid flows. Because the FCM will approve and finance programmes on a multi-year and scaled basis, it will be vastly easier to arrange pooled procurement of inputs (e.g. fertilizer and machinery), and to work with the private sector to establish programmes of input credits (e.g. bank lending to smallholders), smart subsidies using electronic vouchers and other ICT-based tools, seed multiplication programmes, linkages between suppliers and training of extension workers, and more public-private areas of cooperation.

*Summary of the Benefits of the FCM.* The FCM is needed, in short, to support donors and recipients to make the most of an agreed commitment to scaling up resources for smallholder agriculture. The current system does not deliver the needed *scale* of funds, does not provide a single *transparent* mechanism for submitting and approval country plans, does not achieve *predictability* of donor funds, does not *streamline* donor funding, has been vulnerable to ideology rather than *technical evidence*, creates inadvertent barriers to *public-private partnerships*, and does not ensure *country ownership*.

Countries currently face a maze of uncertainty, complexity, delay, and under-funding. The African countries, and other low-income food-deficit countries need the benefit of a unified mechanism that is agile, responsive, transparent, and that bridges the public and private sectors. That is why we recommend the FCM. We are firmly convinced that an FCM will empower not only the recipient countries to undertake bold scale-up plans to overcome hunger, but also the partner institutions who are valiantly engaged in the fight against hunger. The FCM will be a boost for the effectiveness of FAO, IFAD, WFP, and the World Bank, just as it is for the smallholders they are striving to support.

## Plan of Action for the FCM

We recommend that the FCM be established for a period of five years, with a possible renewal for another five years if approved by the Steering Committee following an independent evaluation in Year 4. The FCM will be established at the scale of at least \$1 billion per year in commitments, but will presumably increase in scale based on a track record of success. The FCM will be an independent entity, housed at one of the existing international development institutions, which would serve as Trustee and would provide administrative support. Possible hosts include: the World Bank, IFAD, FAO, or the UNDP. The FCM would operate within the context of the Paris Principles on Donor Assistance. **(Box 7)**

The basic structure and mechanisms of the FCM are shown in **Figure 4**. Key characteristics of the FCM would include the following.

- The FCM will not be a vertical fund. It will be a *financial pooling mechanism* just as its name implies. It will not have a large bureaucracy, nor will it provide international technical advice, a responsibility that will be left to existing institutions (FAO, WFP, World Bank, UNDP, IFAD, CGIAR, AGRA, among others).

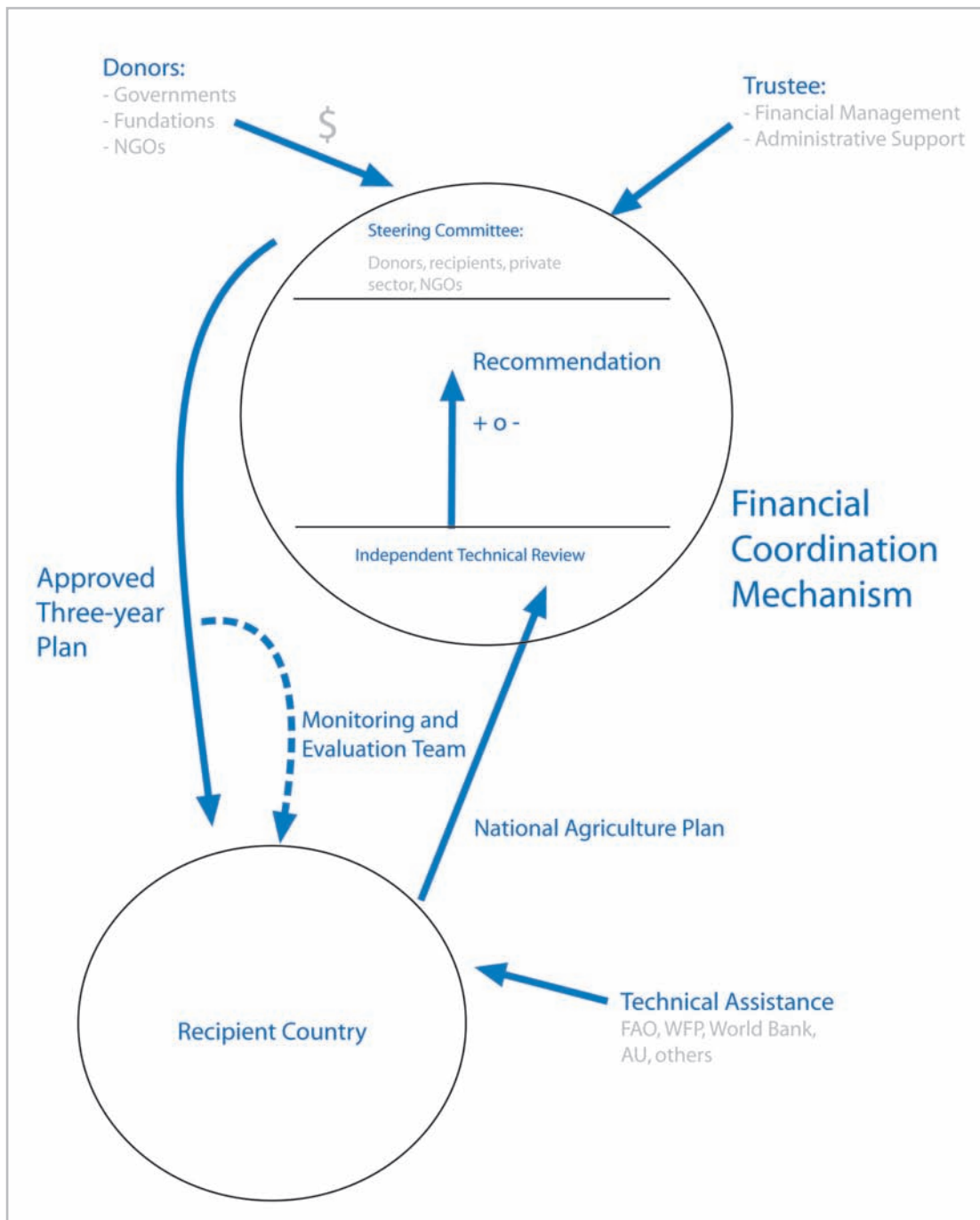


Figure 4: Financial Coordination Mechanism

- The FCM will be housed at an existing institution, for example the World Bank, or the Millennium Development Goal (MDG) Fund at the UNDP, or at one of the Rome-based institutions (WFP, FAO, IFAD). The host institution will serve as Trustee of the FCM.
- Donors will each commit funding over a five-year period
- Most donors will commit their funds directly to the FCM (“pooling”), while others for legal and other reasons will maintain their funds in separate accounts but commit to co-finance with the FCM and participate in a unified decision-making and governance process with the FCM (“virtual pooling”);
- The FCM will be governed by its own Steering Committee, which will include representatives of donors (governments and foundations), international institutions (FAO, WFP, World Bank, IFAD, AfDB, UNDP, AGRA), the African Union, recipient governments, civil society, private sector, and NGOs

- Recipient governments will submit multi-year proposals to the FCM
- Proposals will be approved the Steering Committee of the FCM, based on the advice of an *independent* Technical Review Committee (TRC)
- Funds will be quick disbursing, overhead will be kept low, and FCM operations will be transparent
- The international institutions and bilateral donors will partner with the FCM, sit on its board, and work at country level to help design and implement the programs supported by the FCM
- The FCM will work closely with local and global private-sector providers (e.g. of fertilizer, irrigation, farm machinery) and with private-sector donors, to help ensure low-cost, high-volume and business-oriented flows of inputs, and to prepare the way for commercialization of smallholder inputs over time, including an expanded role of private financing of inputs.
- Programme funding is intended for food-deficit, low-income countries. Eligibility will be established by the Steering Committee.

Key characteristics of FCM-supported programs will include the following:

- Programme investments will focus on crucial inputs for smallholder farmers, including improved seeds, fertilizers, water, machinery, rural infrastructure, and veterinary services
- Programmes will link local food production and local nutritional needs (e.g. through crop diversity; home gardens; small-scale poultry, livestock, and aquaculture; and school-meal programmes using locally produced foods);
- Programmes will emphasize national-scale interventions;
- Funds will be rapidly disbursed, with a goal of no more than four months from application to approval and disbursement;
- Each programme round will last for three years. Countries will be eligible to apply for a maximum of four consecutive rounds (12 years), with approvals and funding based on past performance;
- The first rounds will focus on “smart subsidies” for inputs, and the encouragement of market linkages and institutions. Later programmes will emphasize the transition to financial self-sustainability, through rural credit systems, diversification, higher value-added outputs, and so forth.

## Timetable for Implementation and Financial Requirements

The FCM will be launched early in 2009. With the establishment of the FCM, it is anticipated that at least 10 countries will be ready to submit proposals by 31 March 2009, and that first disbursements would begin no later than 30 June 2009. Another 5 countries will likely be ready to submit proposals by 30 September 2009. A further 10 countries would be ready to apply in 2010.

We anticipate that FCM programmes in 2009 will cover approximately 10 million farm households, with 100 million people, in the first year, at a cost of \$1 billion in disbursements. Our estimates are based on an average size of 1 hectare per farm (larger equivalent farm size for pastoralists and farmers in dry areas), and requiring donor grants of roughly \$100 per household for the first few years of operation. Each farm supports on average 5 people. Over time, and donations permitting, the FCM should rise in scale, to reach roughly 60 million farm families, by 2013 (**Table 2**). Note that the FCM would account for around half of total external donor funding for smallholder agriculture, and perhaps *one fourth* of all funding when taking into account host-country domestic financing of agriculture. Therefore, total coverage of expanded agriculture programmes would be perhaps four times as large as the direct coverage of the FCM itself.

Note also that in later years, donor funding per hectare will diminish as private financing assumes a greater absolute and proportionate role. Donor financing indeed will be used to leverage private-sector financing, as exemplified by the recent programmes in which the Rockefeller Foundation and AGRA provide guarantees to commercial banks who in turn provide input-financing for smallholder farmers. Donor resources are greatly leveraged by private sector funds in this manner. Indeed, one of the central contributions of the FCM will be to spur the creation of novel kinds of private (and public-private) financing of inputs. (**Box 8**).

**Table 2. Illustrative disbursement of FCM funds (2009-2013)**

Year	2009	2010	2011	2012	2013
Countries w/ FCM hrants	15	20	25	25	40
Amount disbursed (US\$ billion)	1	2,5	4	5	6
Direct Coverage by FCM (persons covered) (million)	50	125	200	250	300

## How the FCM will combine short-term and long-term strategies

The basic strategy follows the recommendations of the CFA. In the short term, there are five basic actions, adapted from the CFA Menu of Actions (1.1 and 1.2), that are related directly to smallholder agriculture:

- Improve smallholder access to productivity improving locally adapted inputs (e.g., quality seeds, fertilizer, small irrigation pumps, animal feeds, and veterinary drugs and services) and knowledge through an integrated programme of smart subsidies<sup>v</sup>, extension and rural credit (see **Box 9** on the importance of extension services). Technical advice, market and price information, local seed multiplication and targeted interventions for women farmers, ethnic minorities and other vulnerable groups should be included. For landless rural poor people, a similar package may be provided together with access to small cultivation plots for market or kitchen gardens.
- Improve smallholder access to better post-harvest technologies and knowledge that reduce post-harvest storage losses, improve product quality, and promote value-addition through agro-processing (complementary and school feeding programmes, distribution, storage and food safety, research).;
- Invest in rural and agricultural infrastructure (e.g., rural roads, electrification, small-scale irrigation, targeted large-scale irrigation, soil conservation structures);
- Remove bureaucratic obstacles to the transporting and trading of inputs and food;
- Enhance the nutritional contribution and impact of smallholder agriculture through the promotion of diversification (e.g., home gardens, legumes, and animal rearing), and stable community-based demand for the diversified production through community-based nutrition programmes, school meal programmes, and purchases by WFP and by programmes. (**Box 10**)

These short-term measures, operating over roughly a 3-year period, are expected to generate an immediate tangible impact on productivity and food security (e.g. Malawi's national input subsidy scheme). These short-term investments should be harmonized with a longer-term strategy (10-12 year) that enables local and regional market development, strengthens the private sector, sustains agricultural productivity growth of smallholders and prepares for adaptation to climate change. The CFA identifies eight critical longer-term actions as well in the Menu of Actions for Section 2.2:

- Improve the enabling policy framework;
- Stimulate private investment in agriculture and agro-business;
- Ensure secure access to and better community management of natural resources, including land, water, and biodiversity;
- Invest in agricultural research on food crops, animal production, and inland fisheries;
- Improve rural infrastructure
- Ensure sustained access to competitive, transparent and private- sector-led markets for food produce and quality inputs
- Support development of producer organizations
- Strengthen access of smallholders and other food chain actors to financial and risk management instruments

Raising staple yields is only the first step of the transformation from subsistence to sustainable commercial. Large and sustainable gains in income can be achieved through improved post-harvest storage, better marketing linkages, diversification of crops, and community-based agro-processing, all of which can substantially multiply the incomes of poor farm communities. Studies from Asia over the past two decades found that households moved out of poverty through diversification of income away from rice (Asia's dominant staple) to non-rice crops, livestock and non-farm sources. Increased income generated through increased agricultural productivity was invested in schooling and the development of non-farm rural enterprises, creating important new opportunities for employment and higher incomes in rural areas. However, this transformation would not have been achieved without the foundation of household food security.

Complementary investments in agro-processing can greatly encourage smallholders to grow surpluses and to transform their additional production. As one recent example, mechanized threshing/shelling private service providers in Ethiopia are servicing about 10,000 farmers. The quality of the machine-threshed teff and maize fetches a higher price in local markets (5-10%), and helps reduce labour bottlenecks. Adding value through simple agro-processing can increase primary product value by 50-100%. As another example, wheat threshers in Pakistan (first stationary, then self-propelled) went from 2,000 in 1970 to 57,000 in 1985, with most produced locally (especially the ubiquitous stationary threshers). A similar process is possible in Africa, driven by simple thresher-shellers, driven by a 7-hp motor, mounted on an animal-drawn cart, as an enterprise serving 100 farmers and handling 200-300 tons per season. Besides the time, quality, and cost advantages to the farmers, this helps to build artisanal capacity, and later more developed rural agro-equipment industries. This kind of technological capacity is already very well developed in South Asia, and offers an important opportunity for South-South cooperation between South Asia and Sub-Saharan Africa.

Programmes supported by the FCM will generally begin as direct "smart subsidy" programmes to smallholder farmers and communities, but will then gradually move from direct subsidies to various forms of credit, including micro-finance and seasonal production credit, and to the promotion of farmer cooperatives and self-help groups to support input procurement and marketing. The long-term financial sustainability of the Green Revolution therefore depends on the long-term institutional development in local communities, especially through the collective action of communities in saving, rural investment, sustainable environmental management, the marketing of an increasing range of high-value-added products, and the generation of non-farm employment. A holistic community-based approach is needed to promote these multiple objectives. **(Box 11)**

Such programmes will also need to be well managed, especially with the participation of local communities and smallholder farmer associations. As an example of a partial success that now should be strengthened further through more community involvement, we may cite the Ghana national school feeding programme. This programme has been highly successful in quantitative terms, with 400,000-500,000 children now being fed at school with a fairly nutritious meal. Qualitatively, however, it has (so far) been less strong, as the local farm communities were hardly involved, food was bought at open markets (in some cases even imported food), and with large margins for intermediate dealers. The result has therefore favored large farmers over smallholder farmers, and the programme has not yet fulfilled its great promise of combining the gains of school meals with the large benefits for the smallholder farmers.

Longer-term strategies will emphasize even more extensive coordination and cooperation between the public and private sectors. Increased communication between these sectors will be necessary and encouraged to understand the policies, infrastructure, financing and other investments necessary to develop sustainable, market-driven, long-term programmes. Significant emphasis will need to be placed on local and regional market development that enables smallholder farmers to secure prices at harvest, opportunities to attract private capital through local banks to provide rural credit, the ability to mitigate risk through crop insurance, and fundamental practices that provide the predictability private industry needs to manage seasonal operations and meet customer demands. As noted earlier (and in Box 7), it will be possible to leverage donor assistance substantially through partnerships with commercial banks.

Since rural and agriculture transformation are complex social and political processes, they require long-term vision, patience, learning and flexibility to adapt. In order to increase their impact

and their sustainability, the NAPs should be considered as ongoing rather than rigid blueprints fixed in time. In this context, building national partnerships among stakeholders – the public sector, private sector, civil society, universities, and other groups would be fundamental to the construction, implementation, monitoring, learning and evaluation of the NAPs and to the programmes supported by the FCM.

Donors may also wish to support “Policy Hubs” within countries to support the research and analysis that will underpin each country’s unique Green Revolution. The policy hubs should include universities, NARs (national agricultural research systems), and think tanks, working together to identify policies, data systems, monitoring and evaluation systems, and other critical foundations for strong policy making. Donors would support the research staffs, competitive funding programmes for research, and support to agriculture ministries to access focussed research outputs prepared by the policy hubs.

### How the FCM will support environmental sustainability

Programmes supported by the FCM will need to pay careful attention to environmental sustainability. Impoverished communities often find themselves trapped in a downward spiral of environmental degradation and poverty, because out of short-term desperation they deplete local environmental resources (e.g. soil nutrients and tree cover) in order to make ends meet. The escape from extreme poverty opens us the possibility of ending this downward spiral. Yet there is nothing automatic about environmental sustainability, even when extreme poverty is relieved. More intensive production can also lead to new forms of environmental degradation, e.g. pollution from overuse of pesticides and chemical fertilizers, farming in inappropriate fragile zones such as wetlands, overuse of water resources including groundwater depletion, or the loss of local biodiversity.

Typically, market forces alone cannot remedy these problems. Some form of collective action at the community scale to manage Common Property Resources (CPRs) has repeatedly been shown to be necessary and feasible<sup>vi</sup>. National Agricultural Plans should therefore find nationally appropriate ways to empower local communities for natural resource stewardship, and the FCM should promote financing of these strategies.

The challenges of environmental management are not only the result of local pressures, however. Global climate change is posing increasing, and often devastating threats to impoverished smallholder communities. One of the tasks of NAPs, and of the FCM, will be to finance climate-change adaptation strategies, such as drought reliance through improved water storage, irrigation, and appropriate crop varieties.

The risks are multiplying rapidly. Between 1980 and 2006, the number of reported climate-related disasters worldwide has quadrupled –most of them floods, cyclones and storms. Over the same period, the number of those affected by these disasters has increased from 170 million to over 250 million a year. Climate-related disasters are heavily concentrated in poor countries. Some 262 million people were affected by climate disasters annually from 2000 to 2004; and over 98 percent of them lived in the developing world.

Climate-related disasters have nutrition, health, and education implications, perpetuating poverty and hindering human development. The reach of hunger is inter-generational. For example, in Ethiopia and Kenya, two of the world’s most drought-prone countries, children aged five or less are respectively 36 and 50 per cent more likely to be malnourished if they were born during a drought; in Niger, children aged two or less, born in a drought year, are 72 percent more likely to be stunted.

There is, in summary, an increasingly urgent need to focus on climate change adaptation, disaster risk reduction, and rehabilitation of degraded lands and fragile ecosystems, and to integrate these urgent priorities into National Agricultural Plan. Especially important are community-based efforts to enhance resilience of food-insecure populations.

## The Time for Action

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There has never been more urgency and more opportunity to address global hunger than today. While there are a variety of challenges to be addressed, the opportunity to boost smallholder productivity and thereby to support the transformation of sub-subsistence farming to commercial farming marks one of the world's greatest opportunities to fight poverty, hunger, and disease. The technologies have been identified, the workable programmes are already demonstrated, the power of information and communications technologies multiply what can be accomplished in a short period of time, the donors are ready to step up their support, and the leading international agencies are geared for action. By streamlining the approach to aid finance – through pooled resources, multi-year commitments, and transparent funding based on national-scale proposals – we can reach tens of millions of farm families, and hundreds of millions of their dependents, within five years. The Financial Coordination Mechanism proposed in this paper points the way to enormous breakthroughs by the entire global partnership in the fight against hunger.

## Box 1. Two-Pronged Approach: Increased Agricultural Production combined with Emergency Food and Ongoing Nutritional Assistance

(Prepared by Josette Sheeran, World Food Programme)

Even a few months of inadequate nutrition could have lifelong consequences, not only for the individual – and her offspring – but also for the growth prospects of the country. Urgent and comprehensive action is needed. Increasing agricultural productivity is critical, but it will take years to accomplish and cannot address the immediate food and nutrition needs of vulnerable populations.

Food prices have declined in recent months, but the food crisis is not over. The fight against hunger and malnutrition is as imperative as ever. High food prices and the financial crisis are having a devastating impact on vulnerable households. The “bailout” of the hungry poor is as important for economic growth as the strength of the financial system. Scaling up resources for food and nutrition assistance and safety net programmes such as school feeding, mother/child nutrition, food for work, cash and voucher transfers and other targeted schemes are still a high priority, despite pressures on government budgets.

The costs of these programmes are small compared to the cost of hunger. We know that children under two will face lifelong consequences in terms of health, education and productivity if they do not receive enough nutritious food. In Guatemala, children between the age of zero and 2 years who had benefited from a nutritious drink in the early 1970s, enjoyed about 30 years later wages that were 46 percent higher than children who had received a less nutritious drink. Investment in nutrition has very high benefit-cost ratios.

Having enough staple foods (or energy) to eat, while essential, is not enough to prevent hunger, ensure good health or maximize child growth. There are proven effective interventions to reduce stunting and micronutrient deficiencies. To successfully address the problem of child under-nutrition requires a focus on ensuring adequate nutrient intake during the golden interval for intervention – from pregnancy to 2 years of age. Micronutrients play a particularly critical role in both saving the lives of young children and in ensuring that they grow well.

Globally, almost 1 billion people of all ages are malnourished and over 2 billion people suffer from deficiencies in key vitamins and minerals. According to WHO, deficiencies of micronutrients, such as vitamin A, iron, iodine and zinc, have emerged in the last ten to fifteen years among the ten leading causes of death through disease in developing countries. Moreover, malnutrition and micronutrient deficiencies have significant negative effects on physical and mental growth of children, with life-long consequences in terms of educational performance, health and productivity.

As emphasized in Box 9, stronger linkages need to be developed between agriculture, nutrition and the food processing sector to ensure that increased agricultural productivity translates into maximal gains in human productivity, nutrition and health status.

*A menu of actions for emergency food assistance, nutrition interventions and safety nets enhanced and made more accessible*

The Comprehensive Framework of Action recommends to

- **Ensure that emergency needs are fully met**, including by scaling up food assistance, nutrition interventions, and safety net programmes, such as school feeding and job creation schemes, to address hunger and malnutrition in the most vulnerable populations.
- **Protect basic consumption needs of the poor**, including unconditional transfers to vulnerable groups, such as the elderly and disabled, internally displaced persons, refugees, female headed households, orphaned and vulnerable children. Assistance can be provided in the form of food aid, vouchers or cash transfers, taking into account the nutritional and dietary needs of recipients, local food market conditions and financial infrastructures. Unconditional transfers can go hand in hand with self-targeting programmes which engage beneficiaries in training, asset and job creation. Channeling

food assistance via women should be encouraged and opportunities to improve programme efficiency should be pursued.

- **Scale up nutritional support through safety nets** to meet specific food and nutrition needs of vulnerable groups and prevent longer-term health consequences. For instance, mother and child health programmes can address nutritional deficiencies with focused preventative and treatment programmes, using multi-micronutrient supplementation for pregnant women and nursing mothers as well as timely complementary feeding for infants and young children with quality foods and nutrient products. Assistance can be provided in conjunction with improved access to primary health care services and a campaign to promote breastfeeding, food hygiene and dispel inappropriate food taboos and restrictions. Nutrition interventions should follow a coordinated approach.
- **Support management of under-nutrition, including therapeutic feeding** to treat severe acute malnutrition of children. Capacity building is required in improved management of moderate and severe under-nutrition and the provision of adequate supplies of therapeutic foods through community-based interventions.
- **Promote school feeding** to address hunger among children, improve their enrolment and attendance in school. As in the case of mother and child health programmes, school feeding can make use of micro-nutrient fortified foods, though nutrition may not be the primary objective of household members through take-home rations.
- **Adjust pensions and other social protection programmes with broad coverage to account for food prices** in cases where these are not indexed to cost of living or are adjusted only on an annual basis. Such adjustments can be an important, visible response by government, which does not require additional implementation capacity. Food insecure people who do not benefit from existing schemes should be integrated as quickly as possible.

## Box 2. From Green Revolution to an Ever-Green Revolution

(Prepared by Dr. M. S. Swaminathan, Chairman of the M. S. Swaminathan Research Foundation)

The term “Green Revolution” was coined by Dr William Gaud of USA in 1968. This year therefore, marks the 40th anniversary of the onset of green revolution in our farms. Green revolution is another term for improving crop production through enhanced productivity by enabling the plant to utilize sunlight, irrigation water, and nutrients more effectively. In other words, green revolution involves a vertical improvement in productivity and not a horizontal expansion in area. Since arable land and irrigation water are shrinking resources for agriculture, we have no option except to produce more from less land and less water. Also, smaller the farm, the greater is the need for marketable surplus in order to have some cash income.

During the last decade, there has been reference to the fatigue of the green revolution because of stagnation in productivity and production. Steps taken in recent years are helping to overcome this fatigue and it is estimated that the growth rate in agriculture during 2008 may be 4.5 percent. Lack of progress in productivity improvement is however persisting. The reasons are two-fold – environmental and economic. When farm ecology and economics go wrong, nothing else will go right. This then is the greatest challenge before us during 2009. During the coming year, we should achieve a paradigm shift from green to an ever-green revolution. Ever-green revolution involves enhancement of productivity in perpetuity without associated ecological harm. We must reduce the ecological debt we are now incurring particularly in the heartland of the green revolution, namely, Punjab, Haryana and Western Uttar Pradesh. In this fertile crescent of India, Bio-capacity, i.e., nature’s ability to meet the growing demand, is decreasing. Compounding all these factors are likely adverse changes in growing conditions associated with global warming.

The ecological debt can be overcome by promoting conservation agriculture and organic farming. The National Commission on Farmers (NCF) has suggested how this can be achieved through synergy between technology and public policy. Adequate support should be given to farmers to adopt conservation agriculture, just as USA is doing through provisions in their Farm Bill. NCF has proposed an initial allocation of Rs. 1000 crores (\$US 240 million) to help farmers in the heartland of the green revolution to defend the gains already made through soil health

care, efficient water use and varietal diversity. The economics of farming depends largely on opportunities for assured and remunerative marketing. Agriculture is the largest private sector enterprise in India involving nearly 700 million of our population. NCF has proposed that the support price given to farmers should be total cost of production and an additional 50 percent of this cost.

More than 80 percent of our farms are one hectare or less in size. We need therefore a Small Farm Management Revolution which will help to confer on small producers the power and economy of scale both in the production and post-harvest phases of farming. A small farm management revolution can be achieved through cooperative farming, formation of self help groups, small farmers' companies and contract farming. To be successful and sustainable, contract farming should involve a win-win situation both for producers and purchasers. The small farm management revolution should be designed not only for higher productivity but also greater income through value addition to primary products.

The small farm management revolution should be implemented in a holistic manner to include five key actions:

- Conservation and enhancement of soil health
- Rainwater harvesting, watershed management and water use efficiency
- Ecologically and agro-meteorologically sound technologies supported by appropriate services like the distribution of seeds, fertilizers etc.,
- Availability of credit and credit linked insurance
- Assured and remunerative marketing

Conservation agriculture and producer oriented marketing are the two pillars of the small farm management revolution. For the purpose of giving the power of scale, culturally and socially sustainable approaches like cooperative farming, group farming, contract farming etc., can be promoted.

Unlike industry, agriculture promotes job-led economic growth. The first casualties of the current global economic melt-down are jobs. Modern industry unfortunately promotes jobless growth, which under our conditions will be joyless growth. If we want to reduce the adverse impact of the economic crisis, greater attention to agriculture is the pathway. I hope that during 2009, we will work for increasing small farmers' income, employment opportunities and food security for the nation."

### **Box 3. Malawi: A National Programme with High-Productivity Quick Impact**

(Prepared by Glenn Denning of The MDG Centre, East and Southern Africa, Nairobi)

The smallholder sub-sector of Malawi comprises about 2.4 million households with an average farm size of 1.2 ha. Maize, the staple food crop, is grown by 97% of farming households on about 1.6 million ha of smallholder farms and contributes 60% to total calorie consumption. Over decades of intensive cultivation in the absence of significant fertilizer use, soils in smallholder fields have been depleted of nutrients, particularly nitrogen. National yields of smallholder maize have averaged 1.3 MT/ ha during the last 20 years. More than half of the farming households operate below subsistence. Only 20% of maize producers sell their product and most households purchase maize at much higher prices when stocks are exhausted.

In the 2004/5 rainy season, many parts of the country went without rain for up to one month during January and February 2005. This dry spell had a devastating effect on maize production: the national average yield dropped to 0.76 MT/ha, one of the lowest on record. Total maize production for the 2004/5 season was just 1.23 million MT -- a decline of 24% from the previous year, and just 57% of the estimated national maize food requirement. The UN issued a "flash appeal" for food aid and agricultural inputs. Donors responded with food aid but were unwilling to support an input subsidy.

The Government of Malawi responded in mid-2005 with a national scheme to subsidize improved seed and fertilizer. The scheme involved the distribution of fertilizer vouchers (not more than two per household) and seed vouchers that enabled most smallholder farmers to purchase fertilizer and seed at about one quarter of the market cost. Drawing on \$58 million from its national budget in 2005, \$65 million in 2006, and an estimated \$80 million in 2007, the programme reached most of Malawi's smallholder maize farmers. Resulting harvests in 2006, 2007, and 2008 have dramatically improved the level of national and household food security (see below). In the past three seasons, the country's smallholders have recorded large increases over the 2001-2005 (pre-subsidy) average. The surplus of over a million MT in 2007 enabled the country to export 300,000 MT maize to Zimbabwe and contribute to regional food security through World Food Programme procurements.

	2003	2004	2005	2006	2007	2008
Production (mil MT)	1,98	1,61	1,23	2,58	3,44	2,78
5 - yearav. (2001-2005 ) (mil MT)	1,62	1,62	1,62	1,62	1,62	1,62
% above av.	22	-1	-24	59	112	72

Malawi's experience demonstrates the feasibility and value of investing in food crops grown by smallholders as a first step towards sustained economic growth. In a country where agriculture employs 78% of the national labour force and provides food security and livelihoods for over 10 million people, agricultural productivity growth is having a direct positive effect on the broader achievement of the MDGs. The number of Malawians at risk of hunger decreased from 5 million in late 2005 to just over 500,000 in late 2007. Beyond the most obvious impacts on reducing hunger, the maize surpluses reduced the risks of disease and increased school attendance. Communities also report increased economic activity in areas where productivity increases have been most pronounced. Moreover, at a time when many countries experienced food riots, Malawi's surplus over the past year has buffered the population from the recent food price increases.

#### Box 4. Purchase for Progress

(Prepared by Josette Sheeran, World Food Programme)

Purchase for Progress (P4P) is a private/public partnership, led by WFP, to connect low-income farmers, most of whom are women, to markets by creating a platform of demand for food staples in developing countries. It helps to give farmers greater security to invest in technologies and practices that boost production. There is a particular focus on smallholder farmers. Making smallholder farming more productive, profitable, and sustainable is fundamental in addressing the root causes of the food crisis and to achieving Millennium Development Goal 1 to halve extreme poverty and hunger by 2015.

Purchase for Progress is part of regional and country led programmes aimed at combining supply-side interventions designed to raise farm productivity with measures that reduce market volatility and enhance farmers' access to stable and sustainable demand for their farm products. With Purchase for Progress, innovative procurement practices are being introduced to reduce risks faced by farmers.

The initiative helps to secure profitable markets for farmers' surpluses in regions where markets are otherwise under developed, while also addressing short term emergency food assistance needs of vulnerable groups or opening up opportunities for more stable demand through longer term school-feeding and nutrition programmes. Purchase for Progress also supports local food processing, thereby increasing the availability of nutritious products in local markets.

Financing is required for the actual purchase of food through WFP's various project categories.

### Box 5. Rashtriya Krishi Vikas Yojana

(Prepared by M S Swaminathan, Chairman of the M. S. Swaminathan Research Foundation)

In India, at the instance of the National Commission on Farmers which M S Swaminathan chaired, the Government of India has initiated a National Programme titled “Rashtriya Krishi Vikas Yojana”. This programme has a fund of Rs. 25,000 Crores (about US \$6 billion) for a period of four years. Under this programme, the State Governments are invited to prepare specific proposals for bridging the gap between potential and actual yields of major crops at the level of each district. This “Bridge the Yield Gap Programme” is designed to accelerate progress in filling the gap between potential and actual yields even with the technologies currently on the shelf (in many rainfed areas in India, this gap is as high as 300 per cent). Such a bridging the yield gap programme will involve concurrent attention to the following areas:

- Soil health enhancement
- Water harvesting and efficient management
- Spread of appropriate environment friendly technologies together with the inputs needed for the adoption of the relevant technology by small holder farmers; technologies should include both production and post-harvest technologies, so that conservation, cultivation, consumption and commerce form a continuous chain
- Credit and insurance
- Assured and remunerative marketing : In ultimate analysis, assured and remunerative marketing is the major trigger for generating enthusiasm among farm families for the adoption of the integrated package.

Already there is evidence that such a coordinated and sharply focused funding mechanism is having a good impact on enhancing small farm productivity and increasing the agricultural growth rate which has reached the level of 4.5 to 5 per cent during 2008 as against less than 2 per cent during the last decade.

### Box 6. ‘National Policy Hubs’ to Develop Evidence-based Policies for Smallholder Farmers

(Prepared by Akin Adesina, Vice President, AGRA, and Peter H. Hazell, former Director, IFPRI)

A profound challenge facing a small farm led green revolution in Africa is the need to integrate the supply of extension, seeds, and fertilizer, credit and marketing services into critical packages that enable the green revolution technology to be adopted. Piece-meal approaches cannot bring a successful green revolution since all the parts must come together in an integrated way at the farm level. In Asia, the state played a heavy handed coordinating role led by key ministries. This heavy state role is less relevant for Africa today given its very different institutional landscape. The challenge is to create a different and softer kind of entity that can successfully catalyze, guide and coordinate the activities of public, private and civil society agents within countries.

Each country will need to develop its own **National Green Revolution Strategy** to guide its activities over a period of 10-15 years. If these national strategies are to successfully guide and coordinate the activities of a number of disparate agents, they will need to be developed in participatory ways with key stakeholders, based on evidence based policy analysis, and modified over time to reflect lessons learnt. It is also critically important that these strategies align well with the Paris Declaration principles of local ownership, alignment with country priorities, coordinate with all other donor programs and policies within countries; and have predictable country and donor financial support.

National green revolution strategies will also need to be developed in ways that complement their CAADP and Poverty Reduction Strategy processes, and agricultural sector-wide investment programs. This is necessary to influence policies and leverage the levels of public funding required for a green

revolution, and to avoid creating conflicting agendas within key government agencies. On the other hand, these processes can be slow and have broader agendas than launching a small farm led green revolution, so the national green revolution strategies may need to be fast tracked.

There will be need to give high priority to strengthening national capacities for developing and monitoring national green revolution strategies. The policy agenda must be country owned and led if it is to seriously influence national policies, and that key public, private and civil society stakeholders should have a voice in the process. There will be need for effective national capacities for evidence-based policy analysis and policy communication and advocacy, as well as the development of appropriate fora for engaging key stakeholders in policy dialogue. This will require close cooperation with the CAADP process, especially the country round table processes.

Establishing **National Green Revolution Policy Hubs** as focal points for developing and guiding the green revolution strategy and complementary investments in capacity building in the form of training and institutional support to strengthen policy research, communications and dialogue are the primary entry points.

A core objective in creating the policy hubs is to bring together policy analysts, farmer groups and policy makers to collaborative form a Green Revolution Strategy. However, if the strategy is to succeed, a significant re-prioritization of the national budget and enhanced and well-coordinated donor support will be required.

No country can expect to achieve a Green Revolution unless its national budgetary resources and donor funds are directed by a Green Revolution Strategy. The national policy hubs play a critical role in marshalling the resources needed to achieve this goal, but the effort will not succeed without the creation of a Multi-lateral donor facility for a Green Revolution. Re-prioritization of the national budget to deploy more resources towards the Green Revolution will create winners and losers as the budget alignment occurs. National politicians will endure these political costs only if they foresee a net increase in resources available for agriculture. If the realignment of involves a mere substitution, rather than additionality, it is far less likely that a Green Revolution Strategy will be supported. Similarly, knowing that additional resources will be deployed following a well-reasoned Green Revolution Strategy provides a reason for donors to contribute to the Facility.

### **Box 7. Harmonization of the Financial Coordination Mechanism with the Paris Declaration**

(Prepared by Lawrence Haddad, Director, Institute of Development Studies, Sussex)

The Financial Coordination Mechanism aims to promote the Paris Declaration principles in the following ways:

- Advancing country ownership through the support of National Agriculture Plans (which themselves are aligned, in the case African countries, with CAADP)
- Harmonization of donors and creditors--through the FCM itself
- Alignment with country-led strategies -- through the national action plans
- Managing for development results -- the proposals selected for the FCM will have to demonstrate the case for impact and will have to have a convincing M&E plan and can be expected to have these properly resourced by the FCM
- Mutual accountability for the use of aid -- the FCM will be operated in a transparent way that makes it clear who is funding what action plan, who is deciding on the projects, on what basis, and who is implementing the plan from the country and FCM side.

In establishing the FCM, all stakeholders should be aware of the strengths and limitations of the Global Fund to Fight AIDS, TB, and Malaria, as well as its operational weaknesses. The new FCM will aim to build on the strengths of the GFATM and seek to avoid the pitfalls<sup>vii</sup>.

The GFATM has successfully demonstrated two of its core assumptions. First, international donor financing was indeed a major constraint to addressing the three killer diseases, AIDS, TB,

and malaria. With the availability of GFATM financing, there has been a major and rapid scale up of effective interventions against these diseases. Second, the GFATM helped to leverage new donation as well as many other complementary efforts, including by the World Bank, the U.S. Government, and others. The GFATM has been a catalyst, not a substitute, for global actions in other ways.

On the other hand, the GFATM has hit bottlenecks in implementation, and has sometimes imposed undue pressures on other stakeholders. The FCM will need to be flexible in this regard, taking the lead from National Agricultural Plans to promote harmonization of all key stakeholders. Moreover, many GFATM programmes did not sufficiently stress the needs for factoring in capacity building, institutional strengthening, and political support into the scale up processes.

GFATM programmes have suffered from the lack of complementary financing for health systems building (“horizontal programmes”) aligned with the scale up of disease control (“vertical programmes”), and as a result of inadequate systems support at the start, the GFATM is increasingly funding health system priorities (e.g. the training and mobilization of community health workers, physical facilities, salaries of key personnel) in addition to narrower disease-control interventions.

There are other important “process” lessons from the GFATM that should be incorporated into the FCM design from the start. These include the importance of health infrastructure for successful programme performance; the poorer performance of programmes based on weak initial proposals; the vulnerability of large projects to poorer outcomes; and the substantial variation in outcomes across the three diseases and across countries.

These lessons underscore several points about National Agriculture Plans and financing from the FCM. Most importantly, programme design will matter enormously for the long-term success of programmes supported by the FCM. Even though early plans might be designed very simply for quick impacts started for quick impacts (e.g. through voucher-based distribution of fertilizer and high-yield seeds), long-term sustainability will depend on well-designed national programmes. Careful choices will have to be made about the design of programmes, e.g. according to crops, agro-ecological zones, and objectives.

### **Box 8. Using Donor Funds to Unlock Commercial Financing For Agriculture**

(by Akin Adesina, Vice President, AGRA)

In addition to donor financing for inputs, it should prove possible to leverage greater private financing as well. Some impoverished smallholders will not be creditworthy to borrow, even if private banks are ready to lend. At the start, grant financing may be the only viable alternative for millions of farmer, and tens of millions of the poorest of the poor, because these farmers lack the wealth, capacity to bear risk, or farm size to justify a commercial loan. On the other hand, some farmers are already prepared to borrow commercially if private banks can be induced to lend, and more will be over time as they build up assets and farm productivity. Several experiments are pointing the way to mixed public-private partnerships with the banking sector in order to spur greater private-sector lending and hence greater leverage of official funding.

In Uganda, through an investment by the Rockefeller Foundation in 2003, \$500,000 was invested in the Centenary Rural Development Bank (CERUDEB), with an agreement to cover credit risk of first loss of up to 50%. As a result, CERUDEB lent \$ 1 million initially to farmers. Five years after the guarantee the result has been impressive: the total default and draw down on the guarantee has been only \$10,400. The deposit however generated more returns in interest payments.

AGRA has more recently been leading a drive on this with a number of partnership efforts with commercial banks. In Tanzania, AGRA worked with the National Microfinance Bank on a loan guarantee facility for farmers and the rest of the agricultural value chain. With \$1.1 million in loan guarantee by AGRA and the Financial Sector Deepening Trust, which covers the risk of first loss up to a maximum of 50%, the National Microfinance Bank started lending \$5 million to the sector.

AGRA initiated in 2008 a larger effort in Kenya with the Equity Bank of Kenya. AGRA and (IFAD) provided \$2.5 million each as loan guarantee to the bank, leveraging the bank to commit \$50 million to new lending to agriculture. This is making access to finance available for 2.5 million farmers in Kenya and 15,000 agricultural input retail businesses in rural areas. AGRA is currently working with one of the largest banks in Africa to leverage \$200 million in new lending for smallholder farmers and the agricultural value chains.

We have learned several important lessons from this experience. First, it is possible to meet part of the resources needed for the MDG 1 (i.e., the \$8 billion) through the use of innovative financing partnerships with local banks in Africa. In some cases, it may be possible to use loan guarantees to leverage up to 10 times the value of the guarantees.

Second, loan guarantees allow banks to lower their interest rates to farmers. Prohibitively high interest rates prevent farmers from investing in new agricultural technologies. In all cases where AGRA has used the loan guarantee risk sharing arrangement, the banks have been able to lower their lending rates significantly.

Third, using loan guarantees also gives incentives for banks to reduce their demands for collaterals. In Kenya, banks often ask for collaterals that are in excess of 130% of the value of the loan. In Zambia, banks ask for collaterals in excess of 200% of the value of the loan. In Kenya, AGRA loan guarantee allowed the bank to lower its lending rate to 12% from 18%. In Tanzania, the NMB lowered its lending rate from 28% to 15%.

Fourth, based on the early experience of AGRA, the risk of loss may be lower than the perceived risk of banks. The guarantee funds can assist banks to reduce their learning curve and risks associated with poor financial infrastructure in rural areas on a sustainable basis.

### **Box 9. Strengthening the extension delivery system**

(By Belay Ejigu Begashaw, Senior Agricultural Policy Specialist, The MDG Centre, East and Southern Africa, Nairobi)

The need to strengthen the extension delivery system can be considered as a critical part of “creating an enabling environment by the government”. The challenge of increasing agriculture productivity and thus farm income requires, among other things, a strong agricultural technology dissemination system, which can be defined as comprising all individuals, groups, government and non government service delivery system. Lack of proper extension services in Africa is partially to blame for continued poor performance of agriculture according to participatory poverty assessments conducted in several African countries, for example Kenya in 2000, and Ethiopia 2001.

The extension system in many countries in Africa today is pluralistic, with the government, private companies, and NGOs all providing extension. Recently community-based extension mechanisms have come to the fore as an alternative to overcome the management inefficiencies of these systems. However, though, there might be several other locality-specific problems that can be responsible for its failure, incompetence of grass root-level extension agents is found to be a single common factor. This incompetence among other things includes lack of skill, communication techniques, interest, creativity and operational funding

In order to be successful in transforming the dominant subsistence agriculture into a market oriented one, extension educators must be technically competent in disciplines related to agriculture, and highly competent as educational practitioners. They also need to bring an attitudinal change, towards entrepreneurship that may include support for business, promotion of marketing, support business planning, business decision making, negotiation and farmer’s organizations.

A strong system for training and organizational development is essential to ensure that extension educators develop programmes that are technically sound, conveniently delivered, economically valuable and customer focused. By developing a set of core competencies for

extension educators and an organizational development system capable of responding to producer needs, the capacity of the extension to better serve its customers can be enhanced and sustained. The process for developing core competencies must be highly participatory. It must enable extension employees and volunteers to continuously identify and validate the knowledge, skills, and observable behaviors that are needed to achieve professional excellence. Training at farmer's level should also be guided by similar principles. Farmers should be able acquire sufficient skills and knowledge, that will enable them meet expected standards set by domestic and international markets in order to sustain in the market.

In order to be successful and bring the anticipated transformation the extension service may need to play additional roles, other than the conventional "technology transfer".

These may include:

- Delivering the day-to-day extension message
- Training the existing and would-be farmers on specializations
- Conveying information on quality, standards, inputs, and prices
- Demonstrating entrepreneurship by running model businesses at the extension centres
- Consulting farmers (cooperatives) on enterprise appraisal, project development, and different loan schemes.

Delivering these additional services may require deployment of more than one extension agent in a given centre. With regard to raising the interests of the extension agents, though, the solution may be locality-specific, so the need for having in place a career structure is imperative. Experience shows that there is nothing better as a remedy for reducing the attrition level, (that sometimes reaches 50 percent after three to four years' service under harsh rural condition) than indicating the possibilities for future income and security in payment for longevity of service. These types of policies will not only help retain extension agents and promote their commitment to working more closely to farmers, but also will help to guarantee quality services to farmers.

### **Box 10. Addressing Nutrition through Smallholder Agriculture**

(Prepared by Dr. Jessica Fanzo, Nutrition Specialist, The MDG Centre, East and Southern Africa, Nairobi /Earth Institute at Columbia University, and Lawrence Haddad, Director, Institute of Development Studies, Sussex)

#### **Magnitude of the Problem**

Many developing countries throughout the world continue to struggle with malnutrition with young children bearing the largest burden. Worldwide, maternal and child malnutrition is an underlying factor in at least 3 million child deaths and also contributes to an estimated 35% of total disease burden (Black et al. 2008). Sub Saharan Africa is a region of concern because of the widespread prevalence of child malnutrition. An estimated 28% of all children under five in Sub Saharan Africa are moderately to severely underweight (weight-for-age), 9% are moderately to severely wasted (weight-for-height), and 38% are moderately to severely stunted (height-for-age), an indication of chronic malnutrition (UNICEF 2008). The prevalence of under-nutrition amongst children under-five are even higher in Southern Asia with 42% moderately to severely underweight<sup>2</sup>. Malnutrition is the result of sustained interactions between deficits of care, food and health inputs.

#### **Consequences**

Malnutrition, even when not resulting in mortality, has severe consequences for quality of life. Children who are stunted during the first two years of life experience decreased adult height, low birth weight offspring, and there is substantial evidence indicating that malnutrition hinders cognitive development and impacts school performance and labour market productivity. Furthermore, evidence suggests that low birth weight and malnutrition before the age of 2 increases the risk for chronic disease in adulthood especially if there is rapid weight gain after the age of 2 (Victora et al. 2008). Furthermore, micronutrient deficiencies have been shown to

contribute to the disease burden with vitamin A and zinc deficiencies having the most impact on child morbidity and mortality.

### **The role of agriculture**

Priority recommendations to tackle the heavy burden of malnutrition that require the participation of smallholder farmers are as follows:

On the demand side, raising smallholder agricultural productivity in general is vital. This raises income in a broad based way and allows families to purchase more food and to allow them to diversify their diet.

But we cannot rely solely on demand to rapidly increase the supply of diet diversity and the associated micronutrients lacking in the diet of Sub Saharan populations, such as zinc, vitamin B12, and iron. Supply-side responses include:

- Introduction and promotion of home gardens can increase dietary diversity of micronutrient-rich non-cereal plant food sources, thus enhancing nutritional status, but also provide income to allow for the purchase of animal and higher quality plant products<sup>6</sup>. Green leafy vegetables and fruit trees can be grown by smallholders, and can increase micronutrient intake including iron, zinc, calcium, vitamin C and A.
- Small animal rearing in conjunction with home-gardening may have an even greater impact on the household consumption of animal and higher quality plant products because of the direct availability of those products in the household and their potential to provide additional income. Previous studies have shown an increase in household income of up to 200% over a three-month period among households raising animals in addition to using home-gardens. The additional income served to increase food security as well as dietary diversity in the populations studied (Hellen Keller International 2004).
- Introduction of food legumes to farming system improves soil health through nitrogen fixation and increases protein and micronutrient intake in the diet. Food legumes may also provide an additional source of cash income for smallholders.
- Biofortification technology and introduction of nutrient rich foods such as orange-fleshed sweet potato (OFSP) can increase key micronutrients into the diet. OFSP is a good source of vitamin A and energy, easy to cultivate, vegetatively propagated, and drought tolerant with potential high food security. OFSP has been shown to increased Vitamin A intake and serum retinol concentrations in young children in rural Mozambique (Low et al. 2007). Biofortification of seeds is the breeding of crops with high amounts of minerals and vitamins in their seeds, mainly from staple crops including rice, wheat, maize, beans and cassava with increased concentrations of bioavailable iron, zinc, and provitamin A carotenoids. Crops shown to be successful include iron-efficient soybeans, iron and zinc fortified wheat and rice, and “golden rice” with beta-carotene.
- The potential of home-grown school meals. The UN Millennium Project Task Force on Hunger (2005), NEPAD and the UN General Assembly formally endorsed the important role that home grown school meals (sourcing food locally for school feeding) can play in reducing hunger and improving school attendance. In 2008, the MDG Africa Steering Committee further reconfirmed the importance of school meals. Home grown school meals can be an effective way of stimulating local production, improving nutrition knowledge, and allowing children to better focus on their lessons. They are also a highly effective way of increasing school attendance, which, for girls, is vital to reduce the age of first pregnancy and improve birth weight. The evidence on whether school feeding remains the most effective way of increasing the net food intake of school age children is less clear, although it probably improves diversity of diet if the foods provided are rich in micronutrients. The risk of diverting development resources away from the 0-2 age group also has to be monitored and managed.

### **Participation of citizens**

Whether or not actions designed and promoted are on the supply or demand side, the involvement of rural communities has been shown to be highly effective for both the prevention (see above) and treatment of malnourishment. The onset of malnourishment is strongly shaped by the social, political and environmental determinants that characterize extreme poverty (Bhutta et al. 2008). Deprivation leads to inadequate nutritional diversity in the food supply, restricted access to health clinics and limited knowledge of appropriate provision of care.

On the prevention side, exclusive breastfeeding for the first 6 months of life is the key intervention as the recent Lancet report reaffirmed. On the treatment side the Irish Hunger Task Force (2008) highlighted the positive experience with Community Based Therapeutic Care (CTC). As an integrative public health programme linked with locally produced ready-to-use therapeutic food, CTC utilizes a community-based approach aimed towards rural, vulnerable populations. Specifically, this approach emphasizes maximizing coverage of vulnerable populations through active case-finding and rigorous follow-up care (Collins 2007).

### Box 11. Integral Rural Development and Institution Building as a Participatory Learning Process to enhance development effectiveness

(Prepared by Gabriel Ferrero y de Loma-Osorio, Professor of Development Management at the Technologic University of Valencia, Spain. Currently Deputy Director for Development Policies and Aid Effectiveness. D.G. of Planning and Evaluation of Development Policies, Secretary of State of Development Cooperation. Government of Spain)

A lot has been learnt during the past decades about the success and failure of rural development and agricultural development programmes. The experience with Integrated Rural Development projects during the 70s and 80s has been a fruitful source of learning.

We now acknowledge that a comprehensive approach is needed; that a strong role from states is necessary; that development can no longer be considered as blueprint. A “new” integral concept (as named by de Janvry 2004) is needed, considering a territorial approach, a different role of states –including local authorities–, a broader partnership including private sector, CSO and communities, and development as a process in all its complexity.

In promoting rural development several territorial levels should be considered, where public policies and programmes are developed and where social interactions—including partnerships between several stake and shareholders- take place (and in consequence social capital is developed or erased). Those are: a) Household, community and local level; b) Territorial or regional –sub national in any case- level; and c) National level.

In the local and territorial level agriculture production, diversified rural development and social protection networks can be linked adopting a territorial approach to rural development, so several strategies should be considered simultaneously:

- a. Enhancing local and community partnerships for agriculture production and development.
- b. Enhancing Local governance and empowering participation -especially of the poor- in decision-making (Blackburn et al. 2000; Chambers 1997; 2005), including the decision of what to produce and what to eat.
- c. Promoting Grassroots organizations and their articulation (community committees, cooperatives, trade unions ...) (Uphoff 1993; Krishna, Uphoff & Easman 1997).
- d. Valuing and mobilizing local knowledge –locally owned generation, sharing, application, dissemination- using community and local based social networks and farmer-to-farmer practices (Leach & Scoones 2006).
- e. Creating or supporting locally adapted mechanisms of association, but also mechanisms for redistribution, access to assets –including land, finance, knowledge and technology and services-, addressing inadequate patron-client relationships.
- f. Take into account social relationships, institutions and the potential of social capital (Dasgupta & Serageldin 1999).

Four principles can synthesize the local dimension of rural development (Korten, 1984; Mosse, et. al., 1998):

- **Local specificity** (context-adapted programmes and policies)
- **Empowerment** (related to voice, power relationships, Rights, access to assets, participation of the poor, governance and local knowledge, accountability)
- **Comprehensive approach to agriculture** (related to sustainable livelihoods, gender, culture

diversity, intermediate technologies, non-farm income, diversification, nutrition and rural-urban linkages)-.

- **Learning Process Approach** (related to the complexity of rural development, rural production and uncertainty, to the need for adaptation in the programmes and policies, and to knowledge management)

Aid Effectiveness principles (Paris Declaration plus Accra Agenda for Action) constitute an excellent basis for implementing adequately aid-supported strategies at the national level, and synthesizes a more comprehensive framework for achieving development results than coordination considered in an isolated manner –coordination is a necessary condition but not enough.

But Ownership, Alignment, Harmonization, Managing for Development Results and Mutual Accountability must be considered also at local and regional level as principles for an effective rural or agriculture development. They can be synthesized in a “**local and democratic ownership**” principle if a participatory bottom-up process approach as described previously is adopted. For doing so, and both for national or local level, it is necessary to support public policies, national and local governments, without creating parallel programmes or parallel implementation units, in order to generate adequate bottom-up processes and supportive country level public policies.

## Biographies of Members of the Advisory Group

### Akin Adesina

Akin Adesina is Vice President (Policy & Partnerships) at the Alliance for a Green Revolution in Africa (AGRA). He holds a PhD in Agricultural Economics from Purdue University, USA. He worked for a decade (1988-1998) in senior research positions in the CGIAR (ICRISAT, WARDA and IITA). He was appointed Associate Director for Rockefeller Foundation, where he worked for a decade until his appointment at AGRA. A distinguished agricultural development expert, Akin has published extensively on issues of agricultural development in Africa and helped to design the landmark Africa Fertilizer Summit where 40 heads of state agreed to launch the African green revolution and end the fertilizer crisis on the continent. He is President of the African Association of Agricultural Economists. He is a Yara Prize Laureate, which was won in Oslo, Norway, and a winner of the *Distinguished Agricultural Alumni Award*, Purdue University.

### José Antonio Alonso

José Antonio Alonso holds a PhD in Economics and is Professor of Applied Economics at Complutense University of Madrid. He is Director of the Complutense Institute of Foreign Affairs (ICEI), and a specialist on economic growth and development, and international economic relations. He is part of the Spanish Council of Cooperation for Development and a member of the UN Committee of Development Policy. He has published his work in specialized journals such as *Applied Economics*, *Journal of Post Keynesian Economics*, *European Journal of Development Research*, *Revista de Economía Aplicada*, *Principios. Estudios de Economía Política*, *International Journal of Development Planning*, *Literatura o Información Comercial Española*, among others. His most recent book is *Acción Colectiva y Desarrollo. El Papel de las Instituciones*, Editorial Complutense 2008.

### Tom Arnold

Tom Arnold was appointed Chief Executive of Concern Worldwide, Ireland's largest humanitarian organisation, in 2001. He was previously Assistant Secretary General with the Irish Department of Agriculture and Food. He has been a member of the UN Hunger Task Force and the Irish Hunger Task Force. He is a member of the International Food Policy Research Institute's (IFPRI) 2020 Advisory Council, and the UN's Central Emergency Response Fund's (CERF) Advisory Group. He is Chairman of the European Food Security Group (EFSG), a network of 40 European NGOs engaged in food security work and a former chair of the OECD's Committee of Agriculture (1993 – 98).

### Thijs Berman

Thijs Berman is 1<sup>st</sup> Vice-Chairman of the Development Committee of the European Parliament, of which he is a member since 2004 for the Netherlands Social-Democrat (Partij van de Arbeid).

### Norman Borlaug

Borlaug, an agricultural scientist, is credited with launching the Green Revolution in Asia in 1960s and 1970 that saved hundreds of millions from hunger and starvation. For this work, he was awarded the Nobel Peace Prize. Borlaug's career began in Mexico with the Rockefeller Foundation as a wheat scientist in 1944. In 1966, he joined the International Maize and Wheat Improvement Center (CIMMYT) in Mexico and built an international wheat research and development program that has impacted more than 50 developing countries. In 1984, Dr. Borlaug became the Distinguished Professor of International Agriculture at Texas A&M University. In 1986, he joined Jimmy Carter and the Nippon Foundation of Japan to establish the Sasakawa-Global 2000 agricultural program in Sub-Saharan Africa.

### Niels Christiansen

Dr. Niels Christiansen is Vice-President of Public Affairs, Nestlé, S.A., the world's largest food and beverage company, based at their global headquarters in Vevey, Switzerland. Prior to joining Nestlé he was a member of the faculty of the Harvard University School of Public Health Nutrition. He is currently Co-chairman of the International Food and Beverage Alliance, a consortium of the major food companies in liaison with the World

Health Organization to further the objectives of the WHO Global Strategy on Diet, Physical Activity and Health. He is also President of the International Infant Food Manufacturers Association, and a founding Board Member of the International Cocoa Initiative, an industry, union, and NGO led organization dedicated to implementing ILO Convention 182 regarding the elimination of unacceptable child labour.

#### **Sir Partha Dasgupta**

Sir Partha Dasgupta is the Frank Ramsey Professor of Economics at the University of Cambridge. His research interests have covered welfare and development economics; the economics of technological change; population, environmental, and resource economics; the theory of games; and the economics of under nutrition. Dasgupta is a fellow of the British Academy, a fellow of the Royal Society, foreign honorary member of the American Academy of Arts and Sciences, member of the Pontifical Academy of Social Sciences, foreign associate of the U.S. National Academy of Sciences, and fellow of the Third World Academy of Sciences. He is a past president of the Royal Economic Society (1998-2001) and the European Economic Association (1999). Dasgupta was named Knight Bachelor by Her Majesty Queen Elizabeth II in 2002 in her Birthday Honours List for services to economics, and is the recipient of the John Kenneth Galbraith Award, 2007, of the American Agricultural Economics Association.

#### **Glenn Denning**

Dr. Glenn Denning joined the Earth Institute at Columbia University in July 2004 as Senior Research Scholar and Associate Director of the Tropical Agriculture and Rural Environment Program. He played a lead role in establishing the Earth Institute's Millennium Development Goals (MDG) Centre in Nairobi, where he serves as Director. Denning has more than 30 years of experience in international agricultural research and development. He earlier held senior management positions at the International Rice Research Institute and the World Agroforestry Centre. Denning received national honours from the governments of Cambodia and Vietnam for his contributions to agriculture and rural development.

#### **H.E. Aberra Deressa**

H.E. Aberra Deressa holds a PhD in agronomy and soil science from Tashkent Agricultural University, in Uzbekistan. Dr Aberra began his scientific career in 1974 at Ethiopia's Institute of Agricultural Research, working first as an agronomist, then as coordinator of research extension and finally Centre Manager. Dr Aberra has made outstanding contributions in research programme development; in extension services, technology transfer and capacity building; and in improving links among widely diverse stakeholders in agricultural development. In 1993 Dr Aberra was appointed Deputy Director General of the Ethiopian Agricultural Research Organisation (EARO), where he served until his appointment as State Minister in Ethiopia's Ministry of Agriculture and Rural Development.

#### **Christopher Dowswell**

Dowswell has worked with Norman Borlaug for more than 30 years. He is an agricultural economist by training, but has worked in agricultural communications for most of his career—as an extension agent at Oregon State University, a communications specialist at the International Fertilizer Development Center, the head of information services at CIMMYT, and for the past 20 years, as a senior staff member in the Sasakawa-Global 2000 program in Africa. Dowswell served on the UN Millennium Project Hunger Task Force during 2002-03.

#### **Hans Eenhoorn**

Hans Eenhoorn studied economics and business-administration at Groningen University. He worked with Unilever for 32 years in commercial and general management functions in Europe and Latin America, ultimately as senior-vice president in Unilever's Foods division. He was a member of the steering committee for Unilever's Sustainable Agriculture strategy. In 2002 he was invited to join the United Nations Taskforce on Hunger, which task it was to deliver realistic action plans to achieve the Millennium Goal of halving hunger by 2015. In 2007 he was appointed Associate Professor for "Food security and Entrepreneurship" at Wageningen University. Hans Eenhoorn is a member of the board of "SOS-Childrens Villages International" and a non-executive board member of food companies in The Netherlands and USA.

**Thorleif Enger**

Dr. Thorleif Enger has a Ph.D, an M.Sc. and a B.Sc in Structural Engineering from the University of Colorado, USA. Employed by Norsk Hydro from 1973 to 2004, Dr. Enger has held numerous positions. He served as Executive Vice President of Oil and Energy, President of Hydro's Exploration and Production Division, and Executive Vice President of Hydro Agri. He served as President and CEO of Yara International from 2004 to 2008, and is presently chairman of the Yara Foundation and President of the International Fertilizer Industry Association.

**Gabriel Ferrero y de Loma-Osorio**

Dr. Gabriel Ferrero y de Loma-Osorio, has been working for more than ten years as a professor of Development policies and management. He has provided advisory services to several governments on rural development policies and participated in local and rural development programmes and projects in Africa and Latin America, and recently advisor on the design of the UNDP-Spain MDG Fund. He has recently published "*Supporting Development Processes: Approaches and Methods for a More Inclusive Aid*" (2008); "*Poverty, Culture and Citizenship. A Contribution to the 5th Forum of the Alliance of Cities Against Poverty*" (2006); "*Ideas that should change aid history: Process Approaches and Participation to expand capabilities*", Human Development and Capabilities Association Conference, New York, (2007).

**Dean Fairchild**

Dean Fairchild is Vice President of agronomy for The Mosaic Company. Mosaic is an international manufacturer of fertilizer products for agriculture. In his role, he manages a worldwide network of Mosaic agronomists. This group transfers BMPs for crop production to agriculture in various regions of the world. In the past, he held various agronomic, training and R/D positions with Cargill and CENEX. Dean recently received the American Society of Agronomy 2008 Agronomic Industry award.

**Lawrence Haddad**

Professor Lawrence Haddad is the Director of the Institute of Development Studies in the UK and formerly Director of the Food Consumption and Nutrition Director at IFPRI. He is an economist working at the intersection of issues around poverty, agriculture, food security and nutrition. He is President of the Development Studies Association of the UK and Ireland.

**Carlos Mulas-Granados**

Carlos Mulas-Granados holds a PhD in Economics from the University of Cambridge and a Masters from Columbia University. He is a tenured professor of applied economics at Complutense University and the Director of International Economics in the Complutense Institute of Foreign Affairs (ICEI). He has been the Deputy Director of the Prime Minister's Economic Office, during Zapatero's first term in office. He has coordinated this report on behalf of IDEAS Foundation.

**Amadou Niang**

As Director of the Earth Institute's MDG Centre for West and Central Africa since February 2006, Amadou Niang manages multi-million, multi-sectoral projects in Ghana, Liberia, Mali, Nigeria and Senegal, including the Millennium Villages Project. Before joining the Earth Institute, Amadou Niang was the regional coordinator of ICRAF Sahel. As scientist and regional coordinator he was in charge of the development of agro forestry based innovations to combat desertification, and improved the livelihoods of the rural communities living in these semi-arid dry lands of West Africa. During this period he helped develop research and development consortium to speed up the generation and the adoption of agro forestry technologies. Amadou worked in West Kenya and coordinates the ICRAF/KARI /KEFRI soil fertility team and developed integrated soil fertility based innovations which are widely adopted by farmers. Amadou has also worked in Rwanda, Burkina Faso and Senegal and published more than 50 scientific papers and reports

**Jeffrey Sachs**

Jeffrey Sachs is the Director of The Earth Institute at Columbia University. He is also Special Advisor to United Nations Secretary-General Ban Ki-moon. From 2002 to 2006, he was Director of the UN Millennium Project and Special Advisor to United Nations Secretary-

General Kofi Annan on the Millennium Development Goals. Sachs is also President and Co-Founder of Millennium Promise Alliance, a nonprofit organization aimed at ending extreme global poverty. He is widely considered to be the leading international economic advisor of his generation. For more than 20 years Professor Sachs has been in the forefront of the challenges of economic development, poverty alleviation, and enlightened globalization, promoting policies to help all parts of the world to benefit from expanding economic opportunities and wellbeing. He is author of hundreds of scholarly articles and many books, including the New York Times bestsellers *Common Wealth: Economics for a Crowded Planet* (Penguin, 2008) and *The End of Poverty* (Penguin, 2005).

#### **Pedro Sanchez**

Pedro Sanchez is the Director of the Tropical Agriculture and the Rural Environment Program, Senior Research Scholar, and Director of the Millennium Villages Project at the Earth Institute at Columbia University. Sanchez was Director General of the World Agroforestry Center (ICRAF) headquartered in Nairobi, Kenya from 1991-2001, and served as Co-chair of the UN Millennium Project Hunger Task Force. Sanchez received his BS, MS and PhD degrees in soil science from Cornell University. His professional career has been dedicated to help eliminate world hunger and absolute rural poverty while protecting and enhancing the tropical environment. He is the author of "Properties and Management of Soils of the Tropics" (rated among the top 10 best-selling books in soil science world-wide), co-author of "Halving Hunger: It can be done" and of over 250 scientific publications. Sanchez is the 2002 World Food Prize laureate and 2004 MacArthur Fellow.

#### **H.E. Tiemoko Sangare**

Tiemoko Sangare is the Minister of Agriculture of Mali. Additionally, Mr. Sangare is the vice-president of the Executive Committee of the ADEMA-PASJ. From 2006-2007, he was the coordinator of the unit responsible for the preparation of cadastre in Bamako and its surroundings. From 2003 to 2007, he was a technical advisor to the Minister of State and Land Affairs. Prior to occupying different positions in Government, he taught at the Ecole Nationale d'Ingenieurs de Bamako for over 10 years. Mr. Sangare holds a PhD degree on Technical Sciences from the Institute of Engineers Geodesic, aerial photography and cartography of Moscow.

#### **Rajiv Shah**

Raj manages global programs to improve agricultural productivity to reduce extreme poverty and hunger throughout the developing world. Raj previously served as Director of Strategic Opportunities and as the foundation's Senior Economist. He helped develop the foundation's global health strategy and \$1.5 billion Vaccine Fund. Raj previously worked as a health care policy advisor on the Gore 2000 campaign and on Pennsylvania Governor Rendell's Transition Committee on Health. Raj serves on the boards of the Alliance for a Green Revolution in Africa, Seattle Community College District, and Seattle Public Library. Raj earned his M.D. from the University of Pennsylvania Medical School and M.Sc. in Health Economics at the Wharton School. He is a graduate of the University of Michigan and the London School of Economics.

#### **Jerry Steiner**

Jerry Steiner is Executive Vice President, Sustainability & Corporate Affairs, with responsibility to lead the company's sustainability strategy and global corporate government, public and industry affairs. Coming from a dairy farm in Wisconsin, Steiner has deep roots in agriculture. He received a B.S. degree in Agricultural Economics from the University of Wisconsin and an MBA from Washington University in St. Louis. He has worked for Monsanto for over 25 years. He is a board member of The Keystone Center, Corporate Council on Africa and a member of the International Food and Ag Trade Policy Group (IPC).

#### **Nick Stern, Lord Stern of Brentford**

Lord Stern is IG Patel Professor of Economics and Government at the London School of Economics, where he is also head of the India Observatory within the LSE's Asia Research Centre, and Chairman of the Grantham Research Institute on Climate Change and the Environment. Previously, having held academic posts at the Universities of Oxford and Warwick and the LSE, he was then Chief Economist for the European Bank for Reconstruction and Development and subsequently Chief Economist and Senior VP of the World Bank. In

2005, he was appointed by the UK government to conduct the influential Stern Review, which analysed the economic costs of climate change.

#### **M S Swaminathan**

Professor Swaminathan is Chairman of the M S Swaminathan Research Foundation. A plant geneticist by training, his advocacy of sustainable agriculture leading to an ever-green revolution makes him an acknowledged world leader in the field of sustainable food security. Professor Swaminathan's awards include the Albert Einstein World Science Award in 1986, the first World Food Prize in 1987, the Mahatma Gandhi Prize of UNESCO in 2000 and the Lal Bahadur Sastri National Award (2007). Professor Swaminathan is a Fellow of many of the leading scientific academies of India and the world, including the Royal Society of London and the US National Academy of Sciences. He is a Member of the Parliament of India (Rajya Sabha), to which position he was nominated by the Government of India in May 2007 in recognition of his contributions in the field of agricultural research and development.

#### **H.E. Tumusiime Rhoda Peace**

Tumusiime Rhoda Peace was elected Commissioner for Rural Economy and Agriculture at the African Union Commission in May 2008. She previously served in the Government of the Republic of Uganda as Commissioner for Agricultural Planning and Development and, prior to that, as Commissioner for Women and Development. At national level, she chaired high-level Committees and Working Groups dealing with policy issues ranging from trade, agriculture, environment, to gender and HIV/AIDS. She has in particular, been associated with the promotion of the implementation of the pillars of the Comprehensive African Agriculture Development Programme (CAADP). Mrs Tumusiime Rhoda Peace has a Masters of Arts Degree in Economics majoring in Planning and Management of Rural Development, obtained from the University of Manchester, UK in 1994; and a Bachelor's degree in Agricultural Economics obtained from Makerere University, Kampala, Uganda, in 1975.

#### **Joachim von Braun**

As IFPRI's Director General, von Braun guides the Institute's research on production, market, and nutrition policy and strategy toward solutions for ending hunger and malnutrition. With about 300 staff members -one third of which are based in developing regions- IFPRI is the world's premier research center on food and agriculture policy research. Dr. von Braun has done economics research at global and regional levels and in Egypt, Sub Sahara Africa, China, and Russia. He has published extensively, chiefly on the topics of economic policy, agriculture change, science and technology and on policy issues relating to trade, hunger, health, and nutrition.

#### **H.E. Stephen Wasira**

Stephen Wasira served as Deputy Minister of Agriculture in the first phase Government under President Julius Nyerere and also served as the Deputy Minister for Local Government and later as the Minister of Agriculture and Livestock Development under second phase President Ali Hassan Mwinyi. He was appointed as Minister of Water on January 4, 2006, when Jakaya Kikwete, who had been elected President, named his new cabinet. He was then moved to the position of Minister for Agriculture, Food Security and Cooperatives on October 15, 2006. *He was re-appointed Minister for Agriculture, Food Security and Cooperatives in May 2008*

#### **Derek Yach**

Derek Yach is Vice President of Global Health Policy at PepsiCo. Previously he has headed global health at the Rockefeller Foundation, been Professor of Public Health and head of the Division of Global Health at Yale University, and is a former Executive Director of the World Health Organization (WHO). At the WHO he served as cabinet director under Director-General Gro Harlem Brundtland. He placed tobacco control, nutrition and chronic diseases prominently on the agenda of governments, non-governmental organizations and the private sector. Dr. Yach previously established the Centre for Epidemiological Research at the South African Medical Research Council. He serves on several advisory boards including those of the Clinton Global Initiative, PAHEF Foundation, the Oxford Health Alliance and Vitality USA.

**Acronyms:**

**ADB** Asian Development Bank  
**AGRA** Alliance for a Green Revolution in Africa  
**AfDB** African Development Bank  
**AIDS** Acquired Immunodeficiency Syndrome  
**CAADP** Comprehensive Africa Agriculture Development Programme  
**CERUDEB** Centenary Rural Development Bank  
**CGIAR** Consultative Group on International Agricultural Research  
**CFA** Comprehensive Framework for Action on the Global Food Security Crisis  
**CTC** Community-Based Therapeutic Care  
**CPR** Common Property Resource  
**DAC** Development Assistance Committee  
**EU** European Union  
**FCM** Financial Coordination Mechanism  
**FAO** Food and Agriculture Organization of the United Nations  
**GAVI** Global Alliance for Vaccines and Immunization  
**GDP** Gross Domestic Product  
**GFATM** Global Fund to Fight AIDS, TB, and Malaria  
**GFCRP** Global Food Crisis Response Programme  
**HIV** Human Immunodeficiency Virus  
**ICT** Information and communication technologies  
**IDB** Inter-American Development Bank  
**IFPRI** International Food Policy Research Institute  
**IFAD** International Fund for Agricultural Development  
**MDG** Millennium Development Goal  
**MDTF** Multi-Donor Trust Fund  
**MT** Metric tonne  
**NAP** National Agriculture Plan  
**NCF** National Commission on Farmers  
**NEPAD** New Partnership for Africa's Development  
**NGO** Non-governmental Organisation  
**ODA** Official Development Assistance  
**OECD** Organization for Economic Co-operation and Development  
**OFSP** Orange-Fleshed Sweet Potato  
**P4P** Purchase for Progress  
**PEPFAR** President's Emergency Plan for AIDS Relief  
**PMI** President's Malaria Initiative  
**SWAP** Sector-Wide Approach  
**TB** Tuberculosis  
**TRC** Technical Review Committee  
**UNICEF** United Nations Children's Fund  
**WFP** World Food Programme  
**WHO** World Health Organisation  
**WB** World Bank

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- i Smart subsidies may include the use of vouchers and digitized smart cards, and working through private agro-dealers, and financing through banks and micro-finance institutions.
  - ii Ministers of Agriculture of Egypt, Morocco, and Tunisia contributed to the deliberations on this report, and emphasized their countries' commitment to the MDGs, agriculture, and smallholder farming, both in their country and throughout the continent. Morocco recently launched its National Plan for Agricultural Development named the Green Morocco Plan which aims to increase the contribution of agriculture to Gross Domestic Product (GDP). Egypt offered to transfer some of its successful smallholder experience to other countries.
  - iii See Krishna, Uphoff and Esman, Eds. (1997): *Reasons for Hope. Instructive Experiences in Rural Development*, Kumarian Press, West Hartford, Co. for a very rich study cases all over the world.
  - iv Many African agriculture ministers strongly emphasized to this Ad Hoc Advisory Group the urgent need for more financing, and their inability to obtain the amounts needed from existing channels.
  - v Smart subsidies may include the use of vouchers and digitized smart cards, and working through private agro-dealers, and financing through banks and micro-finance institutions.
  - vi See Dasgupta, P. (2008), "The Role of Nature in Economic Development," for a conceptual and empirical discussion of community-based management of Common Property Resources, and Ostrom, E. (1990), "Governing the Commons", with many remarkable examples of successful community-based management.
  - vii For background, see papers by Radelet and Siddiqi Lancet 2007 369: 1807-13 and by Radelet and Caines, CGD 2005 for DFID suggest (partial list).





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