

# Feeding the world

## Food security is a vital issue for everybody, but policies designed to assist small farmers have a broader effect in tackling poverty among some of the world's most vulnerable communities

By José Graziano da Silva, director general, United Nations Food and Agriculture Organization

**W**hen the G20 leaders sit down in Los Cabos, food security and poverty reduction will be among the top issues they will discuss, alongside the financial and economic crisis, climate change and sustainable development. They are closely linked.

Food security is a common thread in the pursuit of sustainable development. Development cannot be sustainable if people are left behind. And, even today, the right to food – a basic human right – is still absent from the lives of 925 million people. A few days from the start of the Rio+20, the relationship between food security and sustainable development should always be at the front of the mind.

Hunger is a global challenge. Despite much progress, there is still a lot of ground to cover. The Agricultural Market Information System (AMIS), launched by the G20 in response to rising and volatile food prices and their impact on poor populations worldwide, is an example of action that can be taken at the international level.

However, international actions must be complemented by others at the local level, because people do not eat in global markets. People eat in their homes, in their cities and their villages. It is on this turf where the fight against hunger is fought.

A revamped global governance system for food security is necessary to coordinate ongoing efforts and link them to the local level, transforming the international discussions into quick and effective action to tackle emergencies and advance to the long-term goal of food security for all.

The Committee on World Food Security (CFS), recently reformed to include representatives of civil society, the private sector and a range of international agencies and research institutions, plays this coordinating role. It can connect global

and national action. An example of this is the recent endorsement of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security. The CFS-led negotiations resulted in this milestone that will improve how countries govern access rights to land, fisheries and forest resources.

### The dangers of climate change

Why is this important? Because 75 per cent of the world's poor and hungry people live in rural areas and are among the most vulnerable to climate change. Many are subsistence and small-scale farmers with low productivity rates who depend on the food they produce either to feed themselves and their families or to earn a living. That is why assisting small-scale farmers is key to food security: this way, they are better prepared to support themselves and they increase food availability in the poor, rural areas of developing countries.

Eradicating hunger would make everyone richer. A child who is properly nourished can learn more, lead a healthier life and grow up to be more productive. This is why investing in agriculture and nutrition is good for business and good for governments. Food security is not simply an expense. Agriculture can drive socially and environmentally sustainable economic growth. Adequate nutrition reduces costs in health, education and social security.

The world's population is estimated to grow from today's seven billion to more than nine billion people by 2050. The Food and Agriculture Organization (FAO) estimates agricultural production will need to grow by 60 per cent over the next 40 years to meet the demand, exerting significant pressure on the world's resources. But this increase will only be necessary if people continue farming the way they farm and eating the way they eat.

There are other solutions. At the global level, one-third of all the food produced is



lost or squandered. Europeans and North Americans waste 115 kilos of food per capita. People in sub-Saharan Africa and South and Southeast Asia throw away 11 kilos a year. If these amounts could be reduced by 25 per cent, 500 million people a year would have food, with no need to produce a kilo more than today.

Improved food and nutrition education can reduce waste and promote healthier diets. Moreover, malnutrition also shows in the shape of overweight and obesity that affects more than one billion people worldwide.

### Changing farming methods

There is also the way people farm: intensive use of agricultural inputs such as fertilisers and pesticides has taken a heavy toll on natural resources. Farming-as-usual is no longer sustainable. The world needs



Workers in Japan sort food waste; an industry devoted to food recycling has grown up in response to the rising cost of animal feed and fertiliser

a paradigm shift to sustainably intensify agricultural production, helping farmers improve productivity while protecting natural resources. FAO calls this the 'Save and Grow' approach. It is based on traditional knowledge and local ecosystems and focuses on smallholders, who tend to have the least access to resources, technology and training and lower yields than large-scale producers.

Conservation agriculture initiatives by FAO in collaboration with national partners are proving to be beneficial for small farmers in Africa and Asia, as they have been in South America. In Tanzania, a two- to threefold increase in crop yields has been achieved over a five-year period, leading to improved income and livelihoods.

Since 2008, more than 600,000 small farmers across Africa have adopted 'no-tillage' farming practices, offering a range of

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productivity, economic and environmental benefits. But environmental virtue alone is not enough – farmers must see tangible benefits in terms of higher yields and reduced costs. With the right management those benefits can be delivered, as seen in many cases worldwide.

By supporting small-scale farmers, the world can produce food and increase the food supply where it is most needed – in developing countries. This effort can have even greater benefits when it is successfully combined with actions to improve access to food by the

most needy. In different parts of the world, innovative ways link local production with consumption through cash-for-work and cash-transfer programmes. Such efforts help vulnerable families become more resilient. Moreover, by translating unmet food requirements into demand, they help to stimulate local production.

New ways to cooperate and learn from each other are needed, in both developed and developing countries. There is a wealth of knowledge to share and to learn from.

The world must make an effort to achieve food security as fast as possible. It is a possible goal, but it cannot be achieved by FAO or any government on its own. The private sector, civil society, research institutions and academia must all come together as a whole to eliminate hunger for every man, woman and child. ■

# Feeding our hungry planet on a hectare-by-hectare basis



**Sandra Peterson,**  
CEO, Bayer CropScience

**M**eet Aep Sodikin. Out at dawn on his one-hectare rice paddy in West Java, Aep is one of Indonesia's 40 million smallholder farmers. He is also an agro-entrepreneur, embracing step-changing techniques that can both increase yields and reduce costs. Like all farmers, he faces the challenges of unpredictable weather and keeping pests at bay on a daily basis.

Although Aep doesn't start his day thinking about the impacts of world hunger and climate change, there is a vital connection between his daily work and feeding our planet in a sustainable way. As the food-water-energy nexus becomes ever more critical, smallholder farmers like Aep are going to make a huge difference: Asia is home to around 90 percent (more than 500 million) of the world's smallholding farms.

Many of these farmers grow the region's staple food crop – rice. And with two thirds of the world's one billion hungry people living in Asia, every single rice paddy counts.

Meanwhile, in Latin America and Africa, agriculture is also the lifeblood of economies and societies, with micro-scale farming being the primary income for millions of families. Our small-scale farmers around the globe have huge untapped potential to make a fundamental contribution to world food security, yet many are at a loss because of lack of access to seeds, fertiliser, equipment, technology, know-how and environmentally friendly solutions.

## Enabling farmers to adopt climate-smart solutions

Today, world food security is not only about providing food to those at or below the poverty line, it's about empowering and incentivising smallholder and largeholder farmers to adopt techniques that can help plug the hunger gap, while at the same time boost their business sustainably.

Farmers like Aep are more than ready to adopt such techniques – if we give them a chance. Take our new scheme Bayer Tabela which – using direct seeding technology – cuts out the laborious nursery stage, saving the farmer precious time and money. Today, farmers like Aep only need to employ two people, compared with the average 25 labourers required per hectare.

After using Bayer Tabela for three seasons, in combination with a Bayer rice package of crop protection products, Aep is already seeing an increase of up to 30 percent on his rice yield.

In addition, Bayer Tabela uses up to 20 percent less water and emits up to 30 percent less methane than common farming methods. Climate change may not be on Aep's agenda, but it is certainly on ours: Bayer Tabela is the first direct seeding method aiming to receive approval as a Clean Development Mechanism (CDM) from the United Nations Framework Convention on Climate Change (UNFCCC).

### Empowering farmers to propel their future growth

While saving precious resources is a crucial factor, the key to propelling farming's future lies in how we interact with farmers. We have an obligation to empower them by providing them with the tools, knowledge and motivation to grow crops sustainably.

Our teams have their feet on the ground and their hands in the dirt – talking to farmers like Aep every day, listening to their problems and devising solutions that they wouldn't have considered possible. We think of ourselves as having the 'heart of a farmer and the head of a scientist': we strive to understand the implications of failed harvests and to offer tangible and lasting solutions, such as seeds that can grow into stress-tolerant, drought-resistant, predator-fighting plants. In this way, we aim to give farmers the means to steer their own future success by mitigating factors that can threaten their livelihood.

After listening to the needs of farmers in Vietnam, for example, we developed our unique Much More Rice (MMR) programme. Featuring new hybrid rice seeds, crop protection products, as well as training on Good Agricultural Practices, our holistic MMR package can reduce costs, improve rice quality, and increase yield and profitability by more than 10 percent. Based on the success of this rice initiative, we are now extending it to other countries in Asia.

## Our teams have their feet on the ground and their hands in the dirt – talking to farmers every day, listening to their problems and devising solutions

My favourite example of empowering farmers is Bayer's Model Village Project, which transforms them into frontline sustainable entrepreneurs. Last year, we launched two Model Villages in the Indian state of Karnataka. Both villages offer farmers a host of benefits including productivity-boosting know-how and tools; weather insurance schemes; agricultural consultancy; crop protection products and fertilisers; as well as education and schooling for children. They also feature eco-advantages such as special drip irrigation systems. Under the Model Village Project, Bayer representatives work closely with local Indian farmers, providing them with a passport to pilot their own future success.

The model village is a microcosm of what we believe farming could look like on a global scale under the new World Economic Forum's New Vision for Agriculture – an initiative involving 27 global companies, including Bayer Crop Science, which aims to help farmers thrive as key providers of sustainable food security.

### Catalysing our progress with partnerships

In order to increase the global footprint of successful projects like Bayer's Model Village, we need to sharpen our focus on forging public-private partnerships across the world. Our successful



**Bayer CropScience CEO Sandra Peterson: impressed with Indonesian rice farmer Aep Sodikin's entrepreneurial spirit and readiness to adopt climate-smart techniques, such as Bayer Tabela**

partnership with the International Rice Research Institute – which aims to strengthen rice productivity through improved disease management and reduced greenhouse gas emissions – is a step in the right direction. But it's not enough.

We also need to strengthen links with partners across the whole value chain. At Bayer, we're currently building on our strong foundation of food chain partnerships to help enhance farmer empowerment and sustainability from seed to shelf. Our recently sealed agreement with PepsiCo, for instance, provides customised training in sustainable agricultural practices to PepsiCo's potato growers in South America.

These examples are but a handful of projects being carried out by one company in its quest to help feed a hungry planet. With the ever looming target to ramp up food production by 70 percent to feed an estimated nine billion people by 2050, we – governments, NGOs, universities and companies – must speed up and execute clear action points within strict time frames.

The aforementioned New Vision for Agriculture (NVA) has already defined clear targets to achieve 20 percent improvements per decade in the fields of economic growth and opportunity; food security and nutrition; and environmental sustainability. Although there is no one silver bullet when it comes to food security, the NVA has the potential to be a highly effective weapon in our global fight against hunger. Ultimately though, the most powerful step is to put the farmer at the centre of a multi-stakeholder axis that connects the dots among all stakeholders concerned. By breaking down our mission hectare by hectare, we can provide farmers like Aep with climate-smart solutions and tools that allow them to farm more efficiently. Then, by continuing to forge sustainable connections with multiple partners, we can and will make meaningful advances towards the common goal of feeding our hungry planet.



**Bayer CropScience**

[www.bayercropscience.com](http://www.bayercropscience.com)

# Investing in agriculture to drive sustainable development

## Smallholder and family farms are the key to food security and poverty reduction in developing countries. But we must improve gender equality and target investment to close productivity gaps

By Kanayo F Nwanze, president, International Fund for Agricultural Development

**T**he world is at a historic juncture in global agriculture, with demand for food – including high-value products such as fruit, meat and dairy – growing exponentially. This demand is being driven by an ever-growing world population and the emergence of an expanding middle class across much of the developing world. To meet this demand, food production will need to rise 60 per cent by 2050.

As a result, there is an unprecedented potential for agriculture to be the centre of new and vibrant markets, triggering sustained economic growth in countries across Africa, Asia and Latin America. In this context, agricultural development can make a significant and lasting contribution to increased food security and poverty reduction, but only if development efforts centre on smallholders and family farmers.

The world's 500 million smallholder and family farms are well positioned to be the key suppliers of today's growing urban markets, as well as continuing to supply rural markets. Today, many are poor, but with the right policy support and investments, they can supply these markets on better terms with greater capacity. More than half of these farms are in G20 countries.

The G20 clearly recognises the importance of food security. The International Fund for Agricultural Development (IFAD) is pleased to see the priority given this year to inclusive green growth, food security and improved infrastructure. Agriculture does not occur in a vacuum. It affects and is affected by a range of areas including environment, energy, finance, labour and education. The close proximity of

the 2012 G20 and G8 summits to the Rio+20 conference has helped advance the realisation that sustainable and resilient agriculture is part and parcel of inclusive green growth and a green economy. However, much work remains to be done to ensure that this realisation translates into placing agriculture at the centre of a green growth, green economy agenda for sustainable development.

### Wider benefits

Investing in agricultural development not only makes good business sense but also has much wider benefits. Numerous studies have confirmed that growth generated by agriculture is at least twice as effective in

### ***Yields on farms headed by women could rise by as much 30 per cent if they had the same access to resources as men. This would result in 150 million people emerging from poverty***

reducing poverty as growth in other sectors.

The pay-off for investment in agriculture is generally highest when that investment is targeted towards public goods, such as infrastructure, education, and research and development. These issues were also at the centre of a joint report that international organisations, including IFAD, presented to the G20 earlier in 2012. All these areas require urgent attention to close the large productivity gaps that still exist on smallholder farms around the world, and among the women and men on these farms.

Efforts in agricultural development must indeed include creating the conditions for

women to be on an equal economic footing with men. In developing countries, women make up 43 per cent of all farmers. But they are held back by deeply unequal access to services and resources such as credit, extension, and improved seeds and fertiliser. All too often, they do not have title rights to the land they farm. Yields on farms headed by women could rise by as much as 30 per cent simply by giving women the same access to resources as men. Just levelling the playing field between women and men would result in 150 million people emerging from poverty and hunger.

It is important to remember, in considering how to advance agriculture for development, that farming is a business, no matter how small. Creating the conditions for poor farmers to grow their businesses – first to achieve food security and then to produce a surplus – allows them to break out of poverty definitively. Smallholders, and farmers in general, are the biggest investors in agriculture in developing countries. They invest not only their own money, but also their time and labour. Recognising small farmers and their organisations as primary stakeholders in development requires genuine collaboration and inclusive processes that start with the design of programmes and continue through evaluation.

Investment is rightly a central element of the food security agendas of the G20 and G8 this year. Smallholders need greater domestic and international investment in rural areas that is sustainable – economically, environmentally and socially.

IFAD works to ensure that its programmes and projects address these three pillars of sustainable development, which are also central to an inclusive green growth agenda.

### Biogas success

IFAD's work with biogas is one example of the effectiveness of this approach. Eleven years ago, IFAD joined forces with the government of China to pioneer the use of biogas for poverty reduction. Manure is a source of methane. When it is released directly into the atmosphere, it is about 22 times more damaging than carbon dioxide. But when methane is burned it is

Marta Yat Chipel packs green beans for export at a cooperative in Uspantán, Guatemala. Gender equality has been shown to drive prosperity and well-being



©IFAD/Santiago Albert

less harmful, and provides a source of renewable and affordable energy. Biogas digesters allow waste to be channelled from domestic toilets and animal shelters into a sealed tank, where it ferments and is converted into gas and compost. Villagers who burn gas do not need to burn wood.

The project has contributed to higher incomes and reduced deforestation. Poor people who were not on the power grid now have energy for lighting and cooking and even for running generators. They can generate income from the animals that produce milk,

meat, wool and eggs in addition to the dung needed for the biogas digesters. Children have light at night so they can study. Kitchens that were once filled with choking smoke now have clean air. And sanitation has been significantly improved.

The initial project was so successful that it is being scaled up in rural areas around the world. Today, IFAD supports biogas projects in China, Eritrea, Nigeria and Rwanda.

IFAD hopes that leaders at the Los Cabos Summit will take to heart the international organisations' report on sustainable

productivity growth, in particular the recommendations for a holistic approach to bridging the productivity gap on smallholder and family farms. We also hope that food security and agriculture will remain central to the development agenda of the G20 for years to come. By placing these farms at the centre of agricultural development and supporting them by establishing inclusive markets, infrastructure and supportive policies, we will truly bridge the productivity gap and ensure that the improvements to rural lives and the rural environment last for generations. ■

# Performance with Purpose

The Promise of PepsiCo



PepsiCo is guided by Performance with Purpose, because doing what's right for people and our planet leads to a more successful future for PepsiCo.

As a global food and beverage company with brands that stand for quality and are respected household names—Pepsi-Cola, Lay's, Quaker Oats, Tropicana, Gatorade, Sabritas, Gamesa and Sonrics—among many others, we will continue to build a portfolio of enjoyable and healthier foods and beverages, find innovative ways to reduce the use of energy, water and packaging, and provide a great workplace for our associates.

Additionally, we respect, support and invest in the local communities where we operate, by hiring local people, creating products designed for local tastes, and partnering with local farmers, governments and community groups.



Performance

Human Sustainability

Environmental Sustainability

Talent Sustainability



**PEPSICO**

PepsiCo is proud to have been in Mexico for over one hundred years and it remains one of our largest markets. In line with our Performance with Purpose mission, we are committed to the people, the environment and the communities where we work, and actively design and implement initiatives that have a positive impact.

We seek to **deliver sustained business growth** in the country, building on the 3 billion dollar investment we made in 2009 for innovation, infrastructure, communication and community.



Our **High Oleic Sunflower Oil project** has allowed us to re-launch the sunflower crop in Mexico, through a sustainable plan that includes small producers in our value chain. This also helps us include healthier ingredients in our portfolio.

We have developed **water-efficiency methods**, put in place measures to reduce the impact of our packaging, added **wind energy** in some of our production facilities, and integrated the use of **hybrid vehicles** among many other activities to help us protect the Earth's natural resources.



We help our **associates accomplish their goals** through healthier lives, enhanced education and the possibility to successfully combine family and professional development. This is achieved by offering workplace wellness programs and by fostering diversity and inclusion programs.



All of these efforts result in better performance of our business, while stimulating sustainable practices. We know a **healthier future for all people and our planet** means a more **successful future for PepsiCo**.

# Financing food security: the role of the private sector

**The private sector will key in helping to achieve world food security, but concerted international effort, with leadership from the heads of the G20 countries, will be necessary to coordinate policies**

**By** Lars H Thunell, executive vice president and CEO, International Finance Corporation, World Bank Group

**T**here is widespread agreement that the private sector should play a greater role in food security, moving markets in ways that help the world's most vulnerable groups. It can, and should, happen. But it has not happened yet – at least not with the necessary scope and or on the necessary scale. Not in a world that must produce 70 per cent more food to feed the two billion more people it will have by 2050. Meeting this goal will require an estimated \$83 billion per annum in new investment. Most of this will have to come from the private sector, and we are not there yet.

The G8 Camp David Summit's announcement in May 2012 of the New Alliance for Food Security and Nutrition, including a commitment to mobilise new private capital, was especially welcome. It is a promising initiative, but it is still very much in the early stages.

Much good work is already being done in many quarters to stimulate this process. The business community, bilateral donors, private foundations, international finance institutions, civil society, research organisations and others are all making important contributions. But a great deal has occurred in individual pilot projects. The issue must instead be addressed holistically if a food crisis is to be averted.

## Reframing food security issues

Achieving this transformation will not be easy. It will take sound government policies that attract significant levels of private investment. To get there, one central point

needs to be remembered: farmers are business people, too. Reframing the food security debate along these lines is one of today's great challenges of development facing the international community. As the G20 leaders gather in Los Cabos for their annual international policy coordination talks, good models of a private sector-based agricultural transformation must not be left behind.

Consider just one case: Nigeria. In the 1960s its share of global exports was more than 60 per cent in palm oil, 30 per cent in peanuts and 15 per cent in cocoa. Yet today its share in these markets has fallen

***Farmers produce enough to feed everyone on Earth. But poor storage, distribution and other factors leave a billion people hungry. Left unattended, this tragic situation will only become worse in the coming years***

to five per cent or less. Africa's most populous country is now a net importer of agricultural products, spending more than \$4.2 billion in hard currency reserves each year to import wheat, fish, rice, sugar and other essentials to feed its nearly 160 million people.

Clearly a new, private sector-based approach must be taken in Nigeria and other developing countries with great potential for increased production of food crops.

A good overarching framework for such an approach, including vital questions of land use, now exists in the Principles for Responsible Agro-Investment launched by the World Bank and key United Nations

agencies in 2009, drawing support from the following year's G8 Muskoka Declaration. IFC, a member of the World Bank Group, is pleased to partner with the G20 on a global initiative to build the private sector's role in food security in the world's poorest countries: the Global Agriculture and Food Security Program (GAFSP).

## Future directions

A multilateral mechanism to help implement pledges from the G20 summit in Pittsburgh in September 2009, GAFSP's largest component is a public sector window managed by the World Bank that has total funding of \$697 million pledged by seven donors to date.

Complementing these efforts on the government side is GAFSP's private-sector window managed by IFC. Designed to provide long- and short-term loans, credit guarantees, and equity to support private-sector activities for agricultural development and food security, it now has approximately \$200 million in funding, with a recent large Dutch contribution supporting existing grants from Canada and the United States.

IFC announced the first transaction under the private-sector window of the programme on 4 April 2012. Together, IFC and GAFSP provided a \$15 million loan to expand production at PRAN, a food-processing company based in Bangladesh. This project will help fulfill continued growth in domestic demand as well as increased export market demand in India, Africa and the Middle East for packaged food products. It will soon be followed by many more.

More large-scale efforts of this kind must follow to tap into the private sector's capital, technology and management expertise in ways that help the poor and hungry. The focus must be on improving infrastructure and logistics, on increasing access to finance and on raising farmers' productivity, education and incomes.

Farmers produce enough to feed everyone on Earth today. But poor storage, distribution and other factors leave a billion people hungry. Left unattended, this tragic situation will only become worse in the coming years. So innovative approaches are needed to

mitigate risks that have so far kept many of the world's major logistics companies from entering markets where they are needed most. Attracting them into new public-private partnerships would allow them to cut today's excessive rates of wasted food by building new silos, cold storage facilities, warehouses and ports.

Meanwhile, new risk-sharing facilities and other measures should be developed to help small-scale farmers start to attract more financing from the local banks that rarely do business with them now. This would allow them to invest in new seed, fertilisers, machinery and other key needs to increase production.

This could include work with a major global reinsurance company on a large-scale fund to help local farmers better manage their biggest risk – weather.

It also could include a significant portfolio-based bank risk-sharing facility with a donor-funded first loss facility. There are many good ideas to be considered in the context of a new global commitment for private-sector action to finance improved food security.

Given today's serious constraints on land and water resources, a focus on increased productivity, education and incomes must be embedded in all these efforts. IFC's experience shows that one of the best approaches here is to bring more small-scale farmers into the supply chain of demanding, sustainability-driven global food companies.

These buyers' high standards drive the producers to increase their productivity, especially in export crops such as coffee and cocoa. But this same approach can and should be taken as well with the domestic-market staples on which the most poor and vulnerable people depend.

### **An urgent need**

IFC is the world's largest global development finance institution focused on the private sector. In the past four years, the World Bank Group has increased its annual agriculture investment from approximately \$4 billion to \$8 billion, nearly half of which now comes from IFC.

IFC welcomes the G20's current emphasis on food security issues. We are pleased to be part of the response – one we hope will only grow stronger in the future. The world's poor deserve nothing less. ■



In India and other developing countries, the private sector plays a key role in increasing food supply for poor and vulnerable people

Photo Credit: Brad Roberts/IFC

# Feeding Tomorrow

Throughout history, agriculture has been a driver of social progress and nutritious food has been the fuel for people to reach their full potential.

Today, with 7 billion people on the planet, there is greater demand than ever before to increase food production and allow more people in more countries to lead healthy, safe and productive lives.

At PotashCorp, we produce potash, phosphate and nitrogen to help farmers improve yields and produce more food. Our fertilizer ingredients help grow food – and by growing more food, we feed more hope for tomorrow.



**Bill Doyle**  
President and Chief Executive Officer  
PotashCorp

## Supporting the G20 Vision

With the world's population expected to reach 9 billion by 2050, farmers are being asked to boost production by as much as 70 percent over the next few decades, with the majority of that increase to come on existing farm land.

Achieving the required increases is possible, but requires a commitment to improving crop nutrition practices around the world. This will allow farmers to grow the crops needed to meet rising demand for food, fuel, animal feed and fibre without aggressively moving production to rainforests and other green space.

Adopting high-yield agricultural practices in more parts of the world is important to fighting against climate change and reducing greenhouse gas emissions. Since the 1960s, it is estimated that modern farming practices have kept 590 billion tonnes of carbon dioxide from entering the atmosphere.

This level of success is, in part, a product of the "Four Rs" of crop stewardship: right source, right rate, right place and right time. It is also a measure of the importance of another "R": research.

PotashCorp wholeheartedly supports the G20's commitment to "invest in and support research and development of agricultural productivity." We view this as an important step to meeting the needs of the world today and for generations to come.

## Doing Our Part

An invigorated focus on global agriculture can help unlock the vast untapped potential of people around the world, especially in countries that have been traditionally undernourished.

It is our vision that farmers around the world will maximize the potential of their soils – and by doing so, they can help build a nutritious foundation on which their communities can thrive.

As a company, we will continue to pursue initiatives that encourage agricultural research and drive increased yields in a manner that is sustainable and environmentally responsible.

Together with other members of the global fertilizer industry, we support the International Plant Nutrition Institute (IPNI), a not-for-profit, science-based organization that has stationed scientists in many countries for hands-on involvement in agricultural research and development programs. IPNI's goal is to identify methods to achieve higher crop yields and to teach people how to improve production.

We believe farmers can produce enough food for our growing population. Like a seedling sprouting from the soil, food security solutions will rise from a foundation of research.



**9 billion+**

Expected global population by 2050

Source: United Nations

**~ 50%**

Current crop yield directly attributable to fertilizer use

Source: Agronomy Journal (January-February 2005), IPNI

**70%**

Estimated increase in crop production required by 2050

Source: FAO

**90%**

Expected percentage of required new crop production to be grown on existing cropland

Source: FAO



**PotashCorp**

Helping Nature Provide

# Improving nutrition for Africa's food security

**Undernutrition has an enormous impact on the life chances of millions of Africans. It is crucial that international efforts ensure that the world's poorest people have adequate access to essential nutrition**

By Jay Naidoo, Global Alliance for Improved Nutrition

In June the world will turn its attention to the G20 Los Cabos Summit, where leaders from across the globe will gather to discuss some of today's most pressing problems. Food security, with an emphasis on food price volatility, will rightfully be high on the agenda.

But strengthening food security goes well beyond the challenges of increasing food production to meet future demand and addressing short-term price volatility. For poor consumers, the issue is not just about the quantity of food that they eat, but also the quality. The nutritional quality of the food eaten underlies health and well-being, and affects almost all aspects of people's lives and livelihoods.

This is why any consideration of food security in Africa must move beyond whether there is enough food to consider whether that food can deliver life-sustaining nutrients, particularly for the millions of pregnant and lactating women and infants and young children who have greater nutritional requirements than the general population.

## The legacy of early deprivation

*Global Monitoring Report 2012: Food Prices, Nutrition and the Millennium Development Goals*, published by the World Bank, makes this point clear:

"Vicious interactions between malnutrition, poor health, and impaired cognitive development set children on lower development paths and lead to irreversible changes... The most dramatic effect of the food price crisis is an increase in infant mortality, especially in low-income countries. Other hard-to-reverse impacts include growth faltering (stunting or low height for age) and lower learning abilities. Malnourished young children are also at more risk for

chronic diseases such as diabetes, obesity, hypertension, and cardiovascular disease in adulthood. Moreover, declines in human capital in a crisis tend to be more pronounced than the corresponding increases during economic booms."

*The Lancet* series in 2008 on maternal and child undernutrition put a number on the impact of nutrition on child health, calculating that undernutrition accounts for a staggering one-third of total child deaths globally – some 2.6 million each year. Even for those children who survive, undernutrition has produced generations of children who suffer from chronic malnutrition. Millions more suffer from vitamin and mineral deficiencies, which touch an estimated

## Nutritional quality needs to become an active and measurable objective

two billion people, affecting their health, development and educational attainment, as well as their economic outcomes.

Moreover, acute malnutrition, which demands emergency treatment, affects an estimated 55.5 million children globally. These conditions are exacerbated during times of economic crisis and food insecurity, and by poor access to clean water, good sanitation and adequate healthcare.

It was following up on these shocking statistics that the Scaling Up Nutrition (SUN) movement was born, designed to help governments, civil society, the private sector, research institutions and the United

Nations system work together to fight hunger and undernutrition through expanding proven interventions. Far from being a silver bullet, the SUN movement recognises that addressing undernutrition will necessitate coordination and collaboration among the food, health and hygiene sectors.

And what of Africa? Why does Africa, a continent with such abundant agricultural potential, face such a challenge in food and nutrition security? Certainly, land and water management practices, limited uptake of agricultural technologies, poor infrastructure, a weak enabling environment that has inhibited particularly private sector investments, dysfunctional markets and few means to manage risks associated with excessive price volatility of agricultural commodities play critical roles.

But these challenges also relate to a failure to view food as a conduit to good nutrition and ultimately to positive health and economic outcomes. One need only look at progress towards achieving the Millennium Development Goals (MDGs) to see that Africa's statistics illustrate this.

Progress in the health-related MDGs, particularly maternal, infant and child mortality, is significantly lagging with respect to the 2015 targets. Progress towards reducing undernourishment also has a long way to go, with only 15 per cent of sub-Saharan African countries having achieved or on track to achieve MDG 1 – leaving 85 per cent off track.

## Improving access to nutritious foods

The real question is what can be done, and where should the G20 focus its efforts if it cares about both economic development and the health and welfare of the world's poor. Evidence from the recent food price crisis indicates that increases in global prices have not only decreased access to food but have also forced the poor to sacrifice the consumption of nutrient-rich foods such as fruits, vegetables and animal products.

Improving the production, access and use of nutritious foods is one fundamental strategy to enhance the nutrition of the poor. Improving the quality of staple foods all along the value chain, through improved seeds, better fertilisers and milling and storage practices, as well as through large-scale fortification efforts shows promise in

In times of crisis, such as in politically volatile Somalia, children are more at risk of malnutrition and need support from the international community



improving the diets in a sustainable way that reaches the very poorest people.

The data is clear that pregnant and lactating women and children under the age of two have extremely high nutritional needs and must consume higher nutritionally dense foods. Improved maternal nutrition during pregnancy and lactation, the promotion of breastfeeding – including during illness – and the use of nutritious solid foods to complement breastfeeding, starting when the baby is six months old as well as therapeutic feeding when necessary, are important.

Taken together, efforts to improve the nutritional quality of food along the entire food value chain coupled with targeted nutrition interventions can both increase

effective yields for poor farmers and improve the health and livelihoods of their communities and themselves.

In short, to improve nutrition for Africa's food security, the world must ensure that the food system is accountable for and works to improve nutritional value. This means more than simply increasing production and stabilising prices. Nutritional quality needs to become an active and measurable objective embedded within the food security agenda and within agriculture programmes.

Strategies for integrating health, nutrition and agriculture are reflected in the Scaling Up Nutrition movement, and are gaining momentum both nationally and among the global community. More support

is required from G20 governments for substantial progress to be made in the fight against malnutrition. Supporting the policy and resource goals of the SUN movement is an important step. Capitalising more effectively on the reach and know-how of the private sector all along the value chain, and coupling that expertise with a strong policy environment is also important, as is emphasising the importance of nutrition in the agriculture and food security agendas.

So, too, is providing a framework for measuring progress. These additions would go a long way to address one of the world's greatest challenges both in Africa and in poor countries around the globe. Let us see the G20 take decisive actions to make this happen. ■

# GRUMA,

MORE THAN 60 YEARS AS  
A SUSTAINABLE & SOCIALLY  
RESPONSIBLE COMPANY.

GRUMA is the global Mexican food company, leader in corn flour & tortillas/wraps as well as a major player in wheat flour and wheat based products like flours and other mass food.



GRUMA was founded in 1949 by Roberto González Barrera and his father Roberto M. González Gutiérrez. The group is currently present in 113 countries in the Americas, Europe, Asia, and Oceania, through its global brands MASECA® and MISSION® and various leading brands in the local markets in which it participates. The company has 60 plants and more than 20000 employees worldwide.

Ever since the founding of GRUMA, sixty three years ago, we have sought to be a company that fosters the integral development of the communities in which we are present, helping those who have least; implementing environmentally-friendly processes, creating jobs, and favoring training and progress, all without neglecting the continual growth of our company.

GRUMA has a clear vision of sustainability in all its operations. We incorporate this principle in the satisfaction of the needs of our customers, employees, shareholders, and the community, guided by strict ethical standards, in compliance with regulations and with a long-term vision that combines economic and social development with the care of the environment, a fundamental aspect of our competitiveness.

GRUMA's focus on sustainability goes from the farmer's fields to the dinner tables of our consumers, and our sound business governance practices are a pillar of our sustainability.

**GRUMA**  
has a clear vision  
of sustainability in all  
its operations.

GRUMA is a pioneer in the development of equipment which has not only improved production processes but is also designed to generate ecological advantages in:

- Recovery of gas emissions
- Lower consumption of drinking water
- Reduced greenhouse gas emissions
- Smaller water consumption
- Absorption of wastewater discharge

As an example in 2010 we opened our plant in Fontana, CA, California, USA, which is the most modern tortilla factory in the world, as well as the greenest - operating on solar panels and cutting-edge technology to conserve water and energy consumption. This plant is our benchmark to continuously improve our facilities all over the world.

We maintain close collaboration with all of our suppliers under strict principles:

- Ethical
- Social
- Long-term business
- Continuous improved supplies



## DIMENSIONS OF GRUMA'S SUSTAINABILITY AND SOCIAL RESPONSIBILITY

**Ecological**  
 • Energy efficiency  
 • Water efficiency  
 • Greenhouse gas emissions

• Environmental compliance  
 • Environmental risk management

**Social**  
 • Labor practices  
 • Labor relations  
 • Labor safety

• Labor compliance  
 • Labor risk management

• Labor risk management  
 • Labor risk management



**Political**  
 • Political compliance  
 • Political risk management

• Political risk management  
 • Political risk management

**Economic**  
 • Economic compliance  
 • Economic risk management

• Economic risk management  
 • Economic risk management

• Economic risk management  
 • Economic risk management

In addition to all these, we have created "Programa Correo" and "Fundación GRUMA", whose fundamental aim is to promote and support non-profit organizations and people engaged in projects of importance to society that improve the living conditions of the most vulnerable social groups and contribute to a wider knowledge and deeper understanding of Mexican culture. The foundation also responds rapidly to the urgent needs of communities affected by natural disasters.

As responsible corporate citizens, at GRUMA we will continue collaborating to achieve a better future and will continue working on behalf of sustainability in Mexico and in all the countries in which the company takes part.

GRUMA, THE COMPANY THAT NOURISHES THE HEART OF MEXICO AND THE WORLD



# Financial volatility: dealing with derivatives in commodity markets

## As energy market volatility continues to hit other commodities, the lack of coordination between national policies to increase resilience represents a severe failure for the global financial system

By Chiara Oldani, University of Viterbo

**T**he global commodity market is dominated by energy contracts, followed by agricultural commodities and metals. As a result, volatility in the commodity market is mostly due to energy trading. Among energy commodities, oil represents a very large share of the market. The two leading prices of oil, the West Texas Intermediate (WTI) and the Brent Crude, have been steadily above \$100 a barrel for the past 12 months, and strategic reserves of consumer countries have almost ended. The prices of other non-energy commodities have increased mostly because of demand pressures. This robust price path negatively influences consumption and demand in the global economy; moreover, energy is indirectly involved in the pricing mechanism of other commodities, since it represents a relevant industrial input.

Downside risks for growth and stability are rising. The danger of prolonged stagnation for the G20 is very pronounced, as testified by the latest projection issued by the International Monetary Fund for 2012-13.

Commodities are traded on spot and on derivatives markets. The first commodity derivative was traded in the Mesopotamian era to hedge the price risk of sesame. Commodity derivatives markets are widespread in the global financial system, both as exchange-traded (ET) and over-the-counter (OTC) markets. Trading takes place mostly in the Americas and Asia. In particular, China is gaining market shares for ET commodity derivatives. Resources involved in the markets for OTC commodity derivatives represent around one per cent of the global derivatives markets; according

to the available data from the Bank for International Settlements, in the first half of 2011, the notional amount outstanding of OTC commodities contracts was worth \$3.2 trillion and the gross market value was \$450 billion.

The introduction of financial derivatives reduces the price variability of underlying assets, but the extent to which the volatility produced in the derivatives markets influences the spot market is still an empirical issue to be investigated for segments of commodities markets other than oil and energy. Financial volatility is reflected in

### ***What is still missing, more than four years after the start of the financial crisis, is a unique global regulation for the financial system***

the commodity market, mostly via energy derivatives. This is confirmed simply by the positive correlation between oil and financial volatility indices.

OTC derivatives contracts attract relevant resources and have very little regulation, thus posing a certain problem for global stability. Some authorities have suggested introducing compulsory collateralisation for OTC commodity derivatives in order to reduce imported financial volatility. But this solution is unfeasible because of the hedging function played by commodity derivatives in investors' portfolios. If collateralisation were introduced, the market would find a new way to hedge, by circumventing the limit.

The Basel III capital requirements for banks and systemically important financial institutions (SIFIs) are very expensive in

terms of resources allocated to capital. Their effect, other than a contraction of banking credit, will be a further push to shadow banking operators and deregulated trading, like derivatives, that do not have such expensive requirements.

#### **Diverse policies**

The lack of coordination to achieve common goals represents a severe failure for the financial system. What is still missing, more than four years after the beginning of the financial crisis, is a unique global regulation for the financial system. Starting in 2011, most G20 countries, following official meetings and statements on the issue, have implemented certain policies at the domestic level in order to smooth excess financial volatility and limit its impact on non-financial sectors.

Examples of national policies that have been implemented to reduce volatility are the compulsory registration of non-regulated market makers in the United States, the limits to short-selling introduced in some European countries (such as Germany) and the increased capital requirements for market makers to access trading in Europe. These

policies are quite diverse. Their degree of effectiveness is heavily affected by the coordination among national regulations.

In Europe, the introduction of a centralised counter party system (CCPS) goes in the right direction by forcing the harmonisation of national

markets. The CCPS increases market resilience, reduces systemic risk and should thus decrease excess volatility. It is not free of risks, since it is not suitable for illiquid derivatives, and a forced concentration of trading can modify the competition in the market, by creating systematically relevant bodies of a new and unknown type.

In the US, the Dodd-Frank Wall Street Reform and Consumer Protection Act introduces a different structure of monitoring and vigilance of the financial system. The CCPS is not coherent with it. Nevertheless, American authorities are still waiting for the Act to translate into reality: this situation is a clear case of regulatory capture and leaves room for regulatory arbitrage. The G20 Los Cabos Summit should impose regulatory coordination and, finally, produce the global regulator. ■



The two leading prices of oil, the West Texas Intermediate (WTI) and the Brent Crude, have been steadily above \$100 a barrel for the past 12 months