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Ensuring food security

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Keeping up to date with the very latest and most pressing issues facing your organization can be a challenge. While there is no shortage of information in the public domain, filtering and prioritizing the knowledge you need can be time consuming and unrewarding. I hope that you find *Issues Monitor* useful and welcome the opportunity to further discuss the issues presented and their effect on your organization.

Welcome to the September edition of *Issues Monitor – International Development Assistance Services*. Each edition pulls together and shares industry knowledge to help you quickly and easily get briefed on the issues that affect your sector.

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Ensuring food security

As people in developing countries struggle to purchase enough food to fulfill their daily nutrition requirements, the number who continue to go hungry remains high. Climate change and the diversion of crops to make biofuels have increased pressure on food production, contributing to higher worldwide food prices. More global financial support to strengthen supply systems is required to help ensure that every person has sufficient access to food.

Introduction

For the past two centuries or more, most developed nations have been able to feed their populations effectively — largely as a result of the industrial revolution. On the other hand, some of the recent situations in developing nations seem to give credence to the theories of Thomas Malthus, the 18th century British economist who predicted that global population growth would outstrip the supply of food. While the productivity resulting from the industrial revolution caused Malthus' theories to fall out of favor, the currently exploding populations in developing countries make it clear that the world still has to deal with insufficient food supply.¹

Food security exists “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life,” as defined at the World Food Summit in 1996.² Lack of such access to food may lead to chronic hunger or even undernourishment.* Every year, nearly 3.5 million children under five years of age die due to starvation, while nearly 19 million suffer from acute malnutrition.³ Reduction of child mortality is high on the priority list of the international community and was included in the United Nations Millennium Development Goals (UN MDG) framework.

Between 2007 and 2008, rising demand for food in China and other emerging economies, increasing oil prices, and the diversion of crops to produce biofuels led to unprecedented increases in food prices. As staple food prices reached an all-time high in early 2008, it became more difficult

for many people to access nutritious food. This food crisis triggered uprisings in Burkina Faso, Egypt and other countries, and made food less accessible in poor developing countries.⁴ Experts believe that these countries are not only struggling with high food price inflation, but also facing inaction from national governments, fueling a sense of injustice among people.⁵ An Oxfam International study showed that people are aware of the effects of hoarding and speculation on food items.** Most people in underdeveloped or emerging countries, such as Bangladesh, Indonesia and Kenya, have expressed their dissatisfaction over regulatory failure and corruption in government departments leading to unfair trade practices by retailers.⁶

By 2009, the number of undernourished people worldwide increased to 1.02 billion.^{7,8} The effects of the food crisis waned in 2010, and the number was estimated to have fallen to 925 million.⁹ In emerging markets such as China and India, more people are able to meet their daily nutrition requirements, possibly due to their rising household incomes. For instance, while the Asia Pacific region has the largest overall number of undernourished people, the number dropped 12 percent year-on-year (y-o-y) in 2010, due to a strong growth in income levels in the region.¹⁰

However, food prices continue to rise and are likely to remain volatile. The Food and Agriculture Organization (FAO) and the Organisation for

Every year, nearly 3.5 million children under five years of age die due to starvation, while nearly 19 million suffer from acute malnutrition.

Economic Co-operation and Development (OECD) forecast that food prices will remain high and volatile for at least another decade, resulting in more hunger and malnutrition.¹¹ When the effects of climate change are taken into account, it becomes clear that prices of some staple grains may rise 120 to 180 percent by 2030.¹²

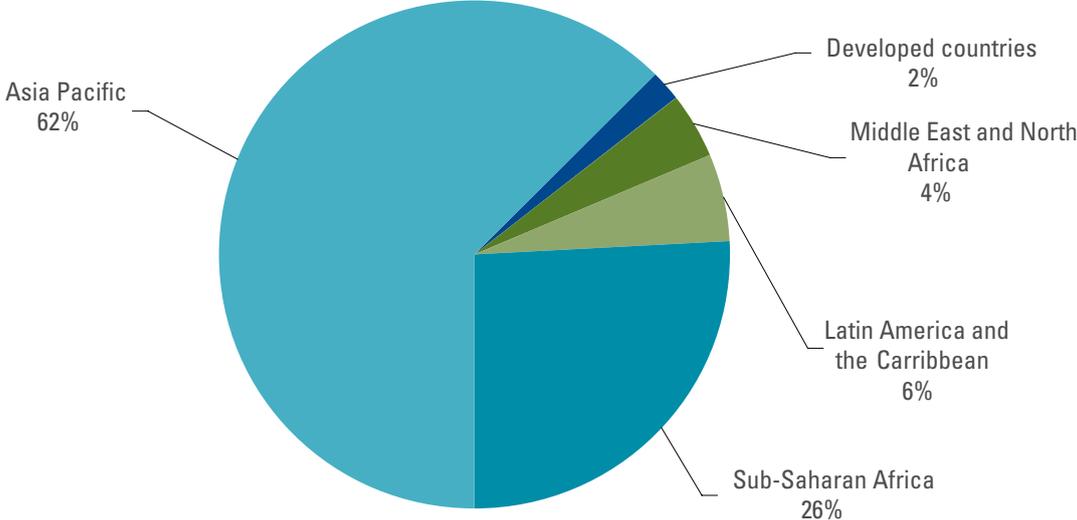
Further, the number of undernourished people around the world remains higher than it was before the food crisis; in 2007, there were 850 million chronically hungry or undernourished people worldwide.¹³ In fact, the 2010 estimates of 925 million may be revised upward, as they were made prior to the latest increases in the price of wheat and other food commodities.¹⁴

In 2010, the number of undernourished people globally was estimated at 925 million.

* *Undernourishment is defined as a condition when caloric intake is below the minimum dietary energy requirement (MDER), which is essential for a person to maintain a minimum acceptable weight and conduct regular activities.*

** *Oxfam International is a confederation of 15 organizations working together in 98 countries and with partners and allies around the world to find lasting solutions to poverty and injustice.*

Figure 1: Proportion of total global undernourished population by region, 2010E



Source: *Undernourishment around the world in 2010*, FAO, 2010

The ongoing drought and famine in Somalia, Ethiopia, Kenya and several other countries in the Horn of Africa is exacerbating the situation. Nearly 2.3 million children in the region are acutely undernourished and nearly half a million are facing death, according to the UN. In fact, 29,000 children in Somalia have already died from the famine.¹⁵

Of the world's undernourished people, virtually all (98 percent) live in developing countries. Most are in China, India, and sub-Saharan Africa.¹⁷ From 2005 to 2007, the proportion of undernourished in China was 9.8 percent (130 million) of the country's total population. In India, the

ratio was more than double that of China, at 20.7 percent (238 million). In Africa, ratios can be much higher — in Burundi, for example, 62 percent (2 million) of its total population was undernourished in the same period.¹⁸ National figures for undernourished people mask disparities between different regions within a country. In Guatemala in 2006, for example, the overall national percentage of undernourished people was 16 percent of its total population; however, in areas with larger indigenous populations, the figure was as high as 70 percent. Most notable, women and children in developing countries are more vulnerable to undernourishment than are men.¹⁹

98 percent of the world's undernourished people live in developing countries.

Importance of food security – emphasis on MDG 1 and the 1996 World Food Summit goal

Article 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR), a multilateral treaty adopted by the UN General Assembly in 1966, states that everyone has the fundamental right to be free from hunger.²⁰ The constitutions of over 100 countries include a reference to the fundamental right to food, either directly or indirectly, according to the FAO.²¹

The issue of food security first received major international consideration at the 1996 World Food Summit in Italy. Global leaders in attendance pledged

to ensure food security for all and eradicate hunger in their countries. The common goal was to reduce the number of undernourished people by half between 1990–92 and 2015.²² In 2009, global leaders renewed their pledges at the World Summit on Food Security in Rome. Countries agreed to reverse the declining domestic and international funding for agriculture and food security, and also emphasized the need to increase public–private partnerships in this arena.²³

In 2000, this target for reducing hunger was incorporated into the Millennium

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Development Goal (MDG) agenda.* MDG 1 focuses on eradicating extreme poverty and hunger, while its Target 1C focuses specifically on reducing the percentage of those who suffer from hunger by half.²⁴

Table 1: Goals of MDG1 and World Food Summit 1996

MDG 1	World Food Summit goal
<ul style="list-style-type: none"> • To eradicate extreme poverty and hunger. Specifically, Target 1C aims to reduce by half the proportion of people who suffer from hunger. The major indicators are as follows: <ul style="list-style-type: none"> – Prevalence of underweight children below the age of five – Proportion of population below minimum level of dietary energy consumption²⁵ 	<ul style="list-style-type: none"> • To reduce — between 1990–92 and 2015 — the number of undernourished people by half.²⁶

* MDG — A common framework for the international community to tackle poverty. The eight MDGs were adopted in 2000, with a target to achieve these goals by 2015.

Challenges to attaining food security

Eliminating hunger remains a distant goal. In 2010, an estimated 16 percent of the population in developing countries was hungry — which can be viewed as only a modest improvement from the 20 percent in 1990–92, making it very unlikely that the rate would be halved by 2015. With the rapid rise in global population during this period, this means that the actual number of hungry people has increased.²⁷ According to the FAO, the substantial percentage of undernourished people points to deep-rooted, systemic structural challenges, such as chronic poverty, population growth and price increases. These challenges are more deep-seated than factors such as rates of economic growth and short-term food crises.²⁸ For instance, poverty is not only a key factor that makes meeting the basic daily food requirements a challenge for the poor, it is also a result of hunger, as malnourished people are unable to reach their full potential in either work or education.²⁹

Chronic poverty

The inaccessibility of nutritious food and the resultant food insecurity stems primarily from poverty — poor households lack the resources to purchase food, and undernourished people are not able to work as much or as hard, which can create a vicious cycle between nourishment and effective employment.³⁰ However, experts also believe that merely increasing the disposable income of the poor may not necessarily compel them to buy more calories.³¹ Rather, they may spend that extra on minor indulgences to liven up their lifestyle. An Oxfam study conducted in

18 different countries shows that, in many developing countries, people do not spend all their money on necessities. Most often, the necessary daily requirements can be obtained by affordable food. For instance, in the Philippines, the study found that a simple diet of only bananas and eggs can provide the daily requirements to everyone, including the very poor, at a very low cost. However, when people living in extreme poor conditions have extra money to spend, they do not always choose rationally to spend that on nutritious and simple food. Instead, they spend the extra to buy tastier, more expensive food. In fact,

In 2010, an estimated 16 percent of the population in developing countries was hungry.

the study showed that food accounts for 36–79 percent of consumption for extremely poor rural people and 53–74 percent for extremely poor urban people across those 18 countries. At the same time, a certain number of these people spend a relatively large portion of their income on festivals and entertainment.³²

Nonetheless, when compared to healthier developing nations, the countries of sub-Saharan Africa fared the worst. According to 2010 data, the region accounts for an estimated 30 percent of the worldwide population of undernourished people, as shown in Figure 2. Two thirds of the world's undernourished live in seven countries — Bangladesh, China, the Democratic Republic of Congo, Ethiopia, India, Indonesia and Pakistan.³³ Between 2005 and 2008, fast-growing economies with limited food inflation such as China



and India saw a reduction in their self-reported food insecurity.³⁴ But as those two countries in particular are now at risk of rapid food price inflation, the current global food crisis (2010–11), is unlikely to replicate the 2005-08 trends in terms of the number of food-insecure people.³⁵

Population growth leading to increased demand for food

With an ever-rising global population, providing food to everyone remains a major challenge, even as improved technology has facilitated higher food production. Many believe that the increase in food prices was one of the reasons behind the recent ‘Arab Spring’ unrest in countries such as Egypt and Tunisia.³⁶ In the 25 years since 1985, Egypt’s population rose from 50 million to 83 million, increasing the burden on the country’s food supply — which is precarious in a context where most of the country is desert and water levels in the Nile River are declining.³⁷

As incomes rise, demand for higher-quality food rises in lockstep, as noted previously. In developing countries, particularly, people move to urban areas in search of better employment and higher standards of living. Young people are attracted to cities, where they believe they will find more employment opportunities and better standards of living.³⁸ In China, the migration to urban areas from 2011 to 2015 will create demand for an additional 4 million metric tons of grain, 800,000 tons of vegetable oil and 1 million tons of meat every year.³⁹

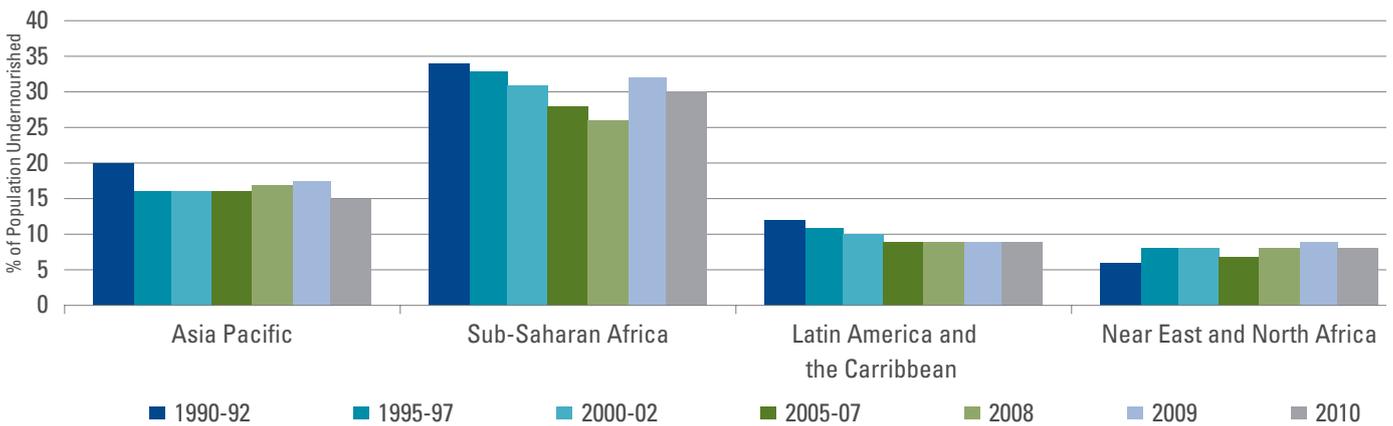
Waste of food and inequitable distribution

Global grain production has been increasing at a brisk pace, from 1.6 billion tons in 2006–07 to 1.8 billion tons in 2008–09.⁴⁰ At the same time, global meat production also increased moderately, from 226 million tons in 2007 to 234 million tons in 2009.⁴¹ Current global food production is

Current global food production is sufficient to meet the FAO’s definition of MDER for everyone on the planet.

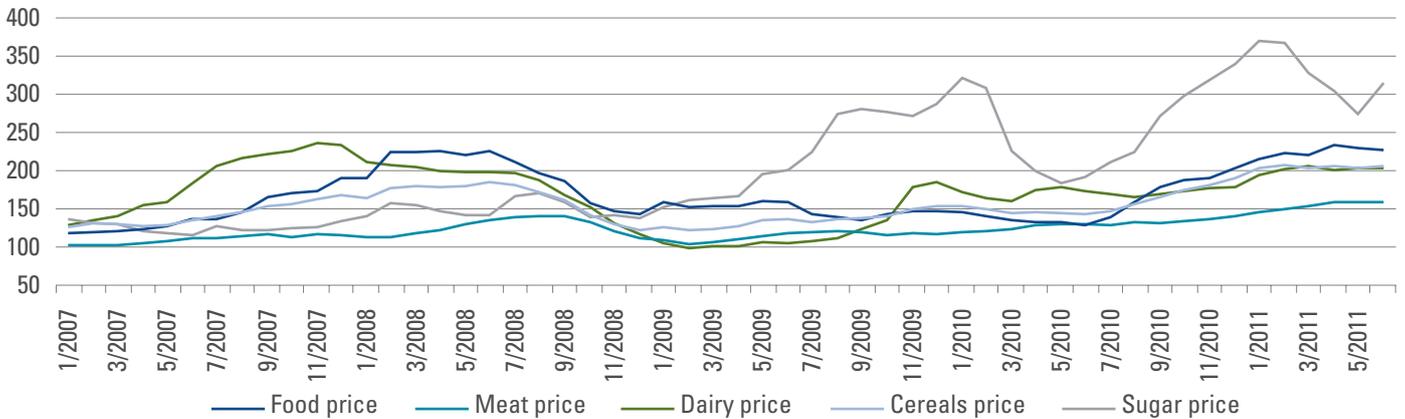
sufficient to meet the FAO’s definition of minimum dietary requirement (MDER) for everyone on the planet. However, nearly 1 billion people still lack access to adequate nutrition because of unequal distribution of food.^{42, 43} One of the major barriers to adequate food access across the world is food waste. Estimates show that nearly 30 to 50 percent of all food produced globally is uneaten and goes to waste.⁴⁴ Studies have shown that nearly a quarter of all food bought from shops in the US and the UK is thrown away uneaten. Further, consumption habits in most western countries have

Figure 2: Percentage of undernourished people, 1990–2010



Source: Recreated from *Undernourishment around the world in 2010*, FAO, 2010

Figure 3: FAO food price index, January 2007–May 2011



Source: FAO food price index

come under the scanner, as many people in those countries suffer from obesity. Nonetheless, if food waste is halved and is distributed to those who need it, then many nations may be able to feed their billions of people.⁴⁵

Poor agricultural infrastructure

A large amount of food is wasted, due to the absence of proper infrastructure in poor countries. Poor storage conditions leave crops vulnerable to pests.⁴⁶ In India inadequate storage facilities result in nearly INR580 billion (US\$12.8 billion) worth of food being wasted every year.⁴⁷

A lack of proper roads in most developing countries means longer transit times, and perishable products such as milk and vegetables often spoil in transit.⁴⁸ Such waste could be reduced by improving roads and providing better storage conditions. Improved market access also provides

an incentive for farmers to invest in storage.⁴⁹ The African Development Bank, for example, is financing a program aimed at reducing waste by three percent every year over a period of seven years.⁵⁰

Rising food prices

After reaching an all-time high in 2008, the rise in global food prices started to unwind in 2009. By 2010, however, food prices had started rising again. In October 2010, the FAO Food Price Index, which measures the monthly price changes in a basket of food commodities, surpassed the record highs of 2008.⁵¹ These increasing prices are putting pressure on consumers. Consequently, since June 2010, it has been estimated that nearly 44 million people in developing countries have been pushed into poverty.⁵²

Since June 2010, nearly 44 million people in developing countries have been pushed into poverty, due to increasing food prices.

The poorest nations find it difficult to manage the high food price inflation, as many people in these countries spend 50 to 80 percent of their meager income on food.⁵³ Moreover, a report by Oxfam shows that by 2030, food prices are expected to nearly double. While this increase will require consumers in the UK to spend nearly 20 percent of their disposable incomes on food, poor households in developing and underdeveloped countries might have to spend all of their income on food purchases.⁵⁴

For the poor in developing countries, one response to food price inflation is to reduce the volume or nutritional quality of the food they eat. If prices continue to rise, it is estimated that the number of undernourished people may again pass the 1 billion mark by the end of 2011.^{55, 56, 57, 58} Non-food responses that poor people adopt in tough times can lead to lasting effects: withdrawal of children from school; early marriage; draw down of assets; dowry debt; and other forms of debt, and insecure income flows, all threaten the futures of food-insecure people. In many cases, high prices have pushed women into inadequately paid and vulnerable informal work and, for men, triggered alcohol abuse and domestic violence. People also respond politically. Oxfam IDS Research strongly indicates that the current food price spike has led to general but palpable discontent, especially among young urban men, linked directly to what are seen as intolerably high food and fuel price increases.⁵⁹

Environmental changes affecting crop production

Environmental degradation, caused by unsustainable human practices and activities, poses another challenge to food production. Experts believe that land degradation may reduce available cropland by 8–20 percent by 2050. By the same year, crop yields are likely to decrease by 5 to 25 percent due to water scarcity, soil erosion and depletion, and species infestation of plants.⁶¹

Agricultural productivity is also exposed to climate change and its resultant effects. In Africa, most fresh water is used for cultivation, even though the continent has a dry and hot climate.⁶² Moreover, many countries in this region rely on rain, as only six percent of the continent’s farmland is irrigated.⁶³ Studies show that any changes in temperature or precipitation may lead to changes in crop yield.⁶⁴

“ The price hike is already pushing millions of people into poverty, and putting stress on the most vulnerable, who spend more than half of their income on food.

– Robert B Zoellick, World Bank Group President (opening remarks ahead of G20 meeting in February 2011)⁶⁰

In fact, cyclones and droughts, which may have increased in frequency due to climate change, have already affected the production and supply of many essential commodities. For instance, in January 2011, cyclone Yasi hit Australia’s sugarcane crops.



Australia is the third largest exporter of sugar in the world, and the damage to its crops forced sugar prices to rise globally. In January 2011, the FAO's sugar price index reached 420, up from around 160 in April 2010.^{65, 66} Traders are concerned that dry weather in Argentina (the world's second-largest corn producer) and cold weather in the US (the largest wheat exporter) may lead to shortages of these commodities in late 2011.⁶⁷

Growing population and demand for food are further intensifying the effects of climate change on food supply. Scarcity of land and water to grow more crops has pushed farmers to adopt production methods that have caused ecological degradation.⁶⁸ For instance, to increase yield, farmers have resorted to using excess flood irrigation systems and sprinklers, leading to increased water use and evaporation.⁶⁹ "High population growth and rising living standards in developing economies are leading to an increase in protein consumption, which — through demand for food grains and consequently on the land — is contributing to broad-based pressure on food prices," according to the Reserve Bank of Australia.⁷⁰

Impact of oil price hikes

The recent increase in the price of oil may further limit the affordable supply of food, as transit of food items and oil-based inputs like fertilizer will become more expensive. In its Food Price Watch for 2011, the World Bank noted that a 10 percent increase in oil prices results in a 2.7 percent increase in the World Bank Food Price Index.⁷¹

Impact of commodity futures market speculation

Some experts believe that the supply-demand misfit was insufficient to explain food price volatility during the 2007–08 food crisis. A few indicators point out that a significant portion of the price hike was due to a speculative commodities bubble. Food prices fluctuated significantly over short periods. For instance, between January 10 and February 26, 2008, the price of wheat rose 46 percent and nearly fell back to its original level by May 19. In early June, it increased 21 percent, and started to drop again during August. Increased speculation in food commodities derivatives continues to be a major concern that can lead to high food price volatility. A study conducted by Lehman Brothers before its bankruptcy showed that, between 2003 and March 2008, the volume of index fund speculation had increased by 1,900 percent.⁷²

A major reason for such speculation has been limited access to information on available food stocks in different countries. Countries such as China and India are unwilling to share information of this nature, which they view as important to national security.⁷⁴

The G20 nations have been pressing for stricter regulations to reduce the speculative effects of commodity trading. One of the suggested measures is limiting the participation of purely financial bodies in the agricultural commodities market. However, a consensus is on hold, as major countries such as the US, the UK, Australia and Brazil have expressed concerns about the measure.⁷⁵



The trend toward greater financialisation of commodity trading is likely to have increased the number and relative size of price changes that are unrelated to market fundamentals.

— The UNCTAD Trade and Development Report 2009⁷³

Hoarding and trade restrictions adding pressure

The aforementioned environmental effects have compelled many developing countries, particularly in Africa and the Middle East, to hoard essential food products in order to secure domestic supplies and avert political unrest.⁷⁶ Some countries have been less willing to export food and have increased trade restrictions. According to World Trade Organization Director General Pascal Lamy, a recent ban on cocoa exports from Côte d'Ivoire is expected to increase cocoa futures prices. In fact, many believe that export restrictions from Russia and Ukraine led to the price rise in cereals during 2010–11.⁷⁷ Recent research by Oxfam shows that the Russian ban on the export of grain did not bring down food prices in the country. However, it increased the price of grain internationally, and helped create an environment where future price spikes and general instability are far more

likely.⁷⁸ As noted above, food inflation is arguably one of the major reasons behind the recent political unrest in Egypt and Tunisia. This has led to more food hoarding around the world and further price increases.⁷⁹

Crop conversion to biofuels threatening availability of food crops

The increasing importance of biofuels has resulted in another major challenge that could reduce the supply of food available for human consumption.

As many countries are now striving to reduce their carbon emissions, policymakers are promoting the use of environment-friendly biofuels. Brazil, the EU, Indonesia and Japan have set a target to replace 10 percent of their transport fuel needs with biofuels by 2020.⁸⁰ The US target is to blend 36 billion gallons of renewable fuel into transport fuel by 2022, effectively mandating diversion of the maize crop to biofuels production. In 2010, 40 percent of US corn production went into engines rather than stomachs.⁸¹

From 2000 to 2010, the global production of ethanol (a common form of biofuel derived from maize or sugar) increased fivefold. With the rising demand for ethanol, production from maize and sugar is set to increase. This is expected to divert 10 percent of global cereal output from food to fuel, according to the FAO.⁸² Biofuel mandates introduce demand in food markets that is inflexible in the face of changes in supply, amplifying price movements. These price effects are compounded by increasing evidence that biofuels in fact increase carbon emissions. Oxfam estimates that even if the EU excludes all biodiesel produced from deforested land, its mandate could raise emissions from deforestation by up to 4.6 billion tonnes of CO₂ – nearly 70 times the annual CO₂ saving the EU expects to make by reaching its target to derive 10 percent of its transport energy from biofuels by 2020.⁸³

By 2020, Brazil, the EU, Indonesia and Japan have set a target to replace 10 percent of their transport fuel needs with biofuels.

Tackling food insecurity – minimizing uneven growth in regions

Although challenges remain, many countries have been able to affect noticeable improvements in their food supply. In fact, before both the food crisis and the financial crisis, many regions and countries were on track to meet MDG1 by 2015. However, progress has been inconsistent.⁸⁴ For countries to ensure the availability of food for all, key elements include sustainable economic growth and improved agricultural production supported by the use of advanced technology. An atmosphere of political will and a framework for stability should greatly enhance the prospects of success.

Economic growth and agricultural improvement

Nearly 80 percent of undernourished people live in rural areas, and most of them are smallholder farmers. If these people receive proper assistance to improve crop production, not only will they be more able to access nutritious food, but their economic conditions will also improve. In 2005, the Malawi government launched an input subsidy program under which farmers received coupons to buy maize seeds and fertilizers. The government has since credited the program for the country's significantly improved maize production.⁸⁵ With surplus maize production, Malawi has been able to exceed its domestic demand, making it a net exporter that no longer requires any food aid assistance.⁸⁶ Such input subsidy programs are now attracting donor focus, as most donors are trying

to improve agricultural production, soil fertility, and livelihoods of poor households, as well as reduce the volatility of food prices.⁸⁷ In April 2011, the United States Agency for International Development (USAID) awarded US\$4.1 million to the International Fertilizer Development Center (IFDC) to implement the Seed Assistance Voucher Program in the Kyrgyz Republic.⁸⁸

However, such programs also raise concerns around long-term sustainability. Besides being expensive, these programs also depend on exogenous factors such as rainfall and soil fertility.⁸⁹ In fact, some experts have expressed concerns on the long-term sustainability of the Malawi program, as the program is draining nearly 16 percent of the national budget and 7 percent of GDP.⁹⁰ Even more

Subsidy programs can sometimes encourage the production of one crop at the expense of another, changing diets and reducing seed biodiversity.

crucially, it is not enough just to put subsidies in place; infrastructure to allow access to raw materials and to markets must also be put in place and measures must be appropriate for the local context and accessible by the poorest. Another issue is that such measures can have negative long-term effects. Subsidy programs can sometimes encourage the production of one crop at the expense of another, changing diets and reducing seed biodiversity, which can lead to reduced food security and less resilience in the face of climate change. While fertilizer provides immediate nutrients for plants, it can cause long-term soil damage and contribute to land degradation. In the long run, extension services in building up soil fertility may prove to be more valuable.



Political will to alleviate poverty

It is not enough to maintain stable inflation of food prices, if people's purchasing power is low or volatile. Those who do not have a regular source of income are vulnerable to poverty and undernourishment. For such people, government support, in terms of temporary work or cash transfers, becomes imperative.⁹¹ Increasingly, governments in middle income and some low-income developing countries have been assisting the poor to enable them to meet their dietary requirements. One such successful program, launched in 2003, is Brazil's Bolsa Família Program. This social protection program provides conditional cash transfers to the poor, and encourages parents to have their children educated and access healthcare facilities. From 2003 to 2009, the program helped lift approximately 20 million people above the poverty line.^{92, 93}

Similarly, in 2002, the Jefes y Jefas de Hogar program of Argentina employed 2 million workers soon after it was initiated. Consequently, the country's poverty reduced from 9.9 percent in 2002 to 4.5 percent in 2005.⁹⁴ In Namibia, a social pension program has increased the volume of trade for food stores and contributed to the growth of marketing infrastructure.⁹⁵

Better functioning markets to reduce food price volatility

Open trade is becoming increasingly important to attain food security. Trade restrictions on food increase volatility in commodity prices, which in turn hinders the efforts to reduce food insecurity among the poor. Development partners such as France are seeking to limit price volatility by increasing global trade.^{96, 97} Greater transparency in physical and financial markets will allow markets to function better and facilitate the price discovery function of financial markets.⁹⁸ G20 governments have decided to launch a global Agricultural Market Information System to provide information about production, consumption and stocks. However, this initiative will succeed only if the private sector becomes engaged with it.⁹⁹

Mobilizing 'Agricultural Growth Corridors'

In certain developing countries, much of the potential farmland remains unexplored for potential agricultural activities, as these countries lack necessary resources, technology and expertise. The establishment of 'Agricultural Growth Corridors' is an important step toward plugging this gap, as they will boost cooperation among developing countries, donors, and the private sector. These corridors focus on improving agricultural productivity and ensuring that local and smallholder farmers have access to local, regional and international markets.¹⁰¹



Agriculture markets have always been volatile, but if governments act together then extreme price swings can be mitigated and vulnerable consumers and producers better protected.

— Angel Gurría,
Secretary-General of
the OECD¹⁰¹



Can better functioning international food trade reduce food insecurity?

Case study 1: Southern Agricultural Growth Corridor of Tanzania

For many years, Tanzania has been struggling to reduce poverty and food insecurity. At the World Economic Forum, in May 2010, the country adopted the Southern Agricultural Growth Corridor (SAGCOT), an international public-private partnership, to attain sustainable agricultural growth. The corridor will link the port of Dar es Salaam to Malawi, Zambia, and the Democratic Republic of Congo, while passing through some of the fertile yet underutilized farmland.¹⁰²

With an investment of US\$2.1 billion from the private sector and US\$1.3 billion from public grants, over a period of 20 years, the SAGCOT aims to transform the southern part of Tanzania into an important global producer of crops and livestock. The SAGCOT has the potential to bring 350,000 hectares of land into profitable production and generate nearly US\$1.2 billion in farming revenues. It is estimated that the program will help nearly 2 million people out of poverty in Tanzania.^{103, 104}

The initiative's major aim is to provide smallholder farmers with an opportunity to engage in profitable agribusiness. The SAGCOT aims to provide them access to large scale farms and help them become aware of and understand inputs, extension services, value-adding facilities and markets.¹⁰⁵

Case study 2: The Beira Agricultural Corridor

In 2008, the government of Mozambique, private companies and various donor agencies initiated the

Beira Agricultural Growth Corridor (BAGC), to improve productivity.¹⁰⁶ The corridor aims to link inland areas of Zambia, Malawi, Zimbabwe and Mozambique, by road and rail networks to shipping facilities near the Indian Ocean at Beira. The route along the corridor will not only improve logistics, but also provide access to sections of the 10 million hectares of untapped arable farmland in the region. Studies have shown that only 1.5 million hectares of that land are farmed. Through BAGC, nearly 190,000 hectares of additional land could be irrigated, leading to high yields and profitable trade of produce in domestic, regional and international markets. Most financing to the projects has come from the Norwegian government and its development agencies. With an investment of US\$250 million over five years, nearly 200,000 smallholder farmers are expected to benefit directly from the improved yields and increasing incomes in Mozambique. At the same time, improving productivity is expected to make the country self-sufficient in food.¹⁰⁷

National governments should maintain transparency and accountability

Most developing countries, especially those in Africa, are continuously encouraging inbound foreign investments to improve their economic conditions. These countries can boost such investments by leasing out or selling their farmland to foreign governments and companies. Over time, governments of developing countries such as China,

'Agricultural Growth Corridors' focus on improving agricultural productivity and ensuring that local and smallholder farmers have access to local, regional and international markets.

India and the Gulf nations have increasingly invested in arable lands in fertile African countries. For instance, during 2004–09, 60,000 hectares of arable land in Ethiopia was leased to foreign entities.¹⁰⁸

However, many experts believe that such investments are a form of 'land grab,' which deprives the native populations of their rich natural resources.¹⁰⁹ It has been observed that foreign entities use the food crops from these countries to either export or to replenish their food stockpile, which strengthens the speculations of land grab.¹¹⁰ While these foreign investors create food stockpiles, the local populations in most African countries suffer from severe undernourishment. This is mostly due to their inability to purchase affordable food and grow more crops by applying advanced technology. Consequently, most experts have expressed their concerns over the trade-off between foreign investments and the land lending practice.

To reap maximum benefits from such investments, national governments will have to be more vigilant and transparent.¹¹¹ Farmers in Ethiopia have argued that they had mostly remained unaware of the transactions of their farmland.¹¹² At the same time, in 2010, Brazil restricted farmland investments by foreign governments, as the speculation of foreign countries, particularly China, acquiring arable land increased. The country now allows only genuine private investors into the country.¹¹³

Adaptive mechanism to help productivity

According to the UN, climate change will lead to greater poverty and more hunger among nearly 75 percent of the world’s poor, who depend on resources such as forests, fisheries, water and marginal lands for their livelihood.¹¹⁴ Any community dependent on these resources must face the challenges of climate change. Adaptation mechanisms,

such as heat and drought-tolerant varieties or replacing water-hungry crops such as maize with cassava in southern Africa, will be needed.¹¹⁵

Climate change affects resource scarcity. For instance, drier coastal areas suffering from saline intrusion can result in major shortages of water for household and productive use. A few ways to mitigate such impacts of climate change on natural resources are afforestation, increasing soil’s organic content, and protection against landslide and erosion. At the same time, to facilitate sustainable livelihood in a changing climatic situation, communities should have access to appropriate prediction technologies such as early warning for extreme weather events or seasonal forecasts. Further, active participation by local communities in their own adaptation efforts increases human security and ensures that other processes that affect adaptive capacity can be identified.¹¹⁶



Regional integration and cooperation

In regions such as sub-Saharan Africa, regional integration and cooperation can provide opportunities to ensure food security. Most African economies are small and fragmented. There are nearly 15 countries that are landlocked and share borders, with an average of 4 countries. Economic integration among these countries will create larger regional markets and increase trade.¹¹⁷ Further, cooperation with the private sector is expected to provide

Table 2: Examples of adaptive mechanism solutions in different countries

Project / Country	Details
Yasothon Province, Thailand	<ul style="list-style-type: none"> • Oxfam initiated a project in the area aimed at : <ul style="list-style-type: none"> – Educating farmers about the impacts of climate change and linking them to sources of weather and climate information – The development of appropriate farm water-management systems – Engagement with other communities to share experience and to advocate for change
Maharashtra State, India	<ul style="list-style-type: none"> • The Watershed Organisation Trust — an Indian NGO working toward poverty alleviation — assisting poor, rural communities with watershed restoration projects to combat the degrading effects of recurrent droughts and human pressures on the surrounding land. • Measures undertaken include : <ul style="list-style-type: none"> – Soil, land and water management, such as trench building to control erosion, improve soil fertility, and enhance groundwater recharge – Afforestation and rural energy management, such as by banning tree-felling and promoting the planting of shrubs and grass to meet household fuel needs – Livestock management and pasture development

Source: Climate Change Adaptation, Oxfam, April 2010

the necessary technical assistance to improve productivity.¹¹⁸ In Africa, investment in agriculture has been increasing, especially with emerging donors such as China and Brazil. Similarly, private sector investment is also increasing in the region. However, mobilizing all these resources requires regional and national planning and cooperation. Programs such as the African Union's Comprehensive Africa Agriculture Development Program (CAADP) aim "to help countries critically review their own situations and identify investment opportunities with optimal impact and returns." At the same time, governments need to take in-house measures to facilitate productivity and increase domestic demand and trade of agricultural products. For instance, in Morocco, the government provides technical, economic and political assistance to farmers in the export of high-value crops to Europe.¹¹⁹

Case study 3 – India moving toward ensuring food security

Although a fast-growing economy, India still struggles to provide its people with adequate access to food. Nearly 45 percent of children below the age of five are underweight.¹²⁰ The country also struggles with uneven and illegal distribution of food products. In August 2010, India's Supreme Court expressed

its dissatisfaction with the government for allowing 67,000 tons of badly stored grain to rot. That quantity was enough to feed 190,000 people for a month.¹²¹ Moreover, theft of significant quantities of food, meant to be distributed through the public distribution system or to be given to the poor, is another challenge for the government. Over 2004–05, the illegal food market in India was estimated at US\$7.5 billion.¹²²

The government has started taking steps to tackle the issue of uneven distribution and inaccessibility of food for the poor. In January 2011, the National Advisory Council of India drafted the National Food Security Act (NFSA).¹²³ It aims to make food accessible to everyone in the nation, and ensure that all live free from hunger, malnutrition and other deprivations related to a lack of food. Further, it proposes to entitle all people to a certain amount of food every month, particularly those living under the poverty line, at a highly subsidized price. In the first phase of implementation, the act will cover 85 percent of the rural population. Under the act, the food entitlements are supposed to span the entire life cycle of a human being — from the nutrition needs of an expecting mother and her child to those of the elderly and infirm, all will be covered by this initiative.¹²⁴



Can transparency in land lease transactions improve utilization of foreign investment?

In the meantime, the Ministry of Agricultural has budgeted INR1.08 trillion (US\$24 billion) to fight climate change and ensure food for all at a reasonable price by 2020. The funds will be administered by the National Mission for Sustainable Agriculture under the Indian Prime Minister's National Action Plan on Climate Change. A major portion of the fund has been allocated toward setting up agriculture infrastructure, such as a network of cold storage and storing capacity across the country.¹²⁵



In Africa, investment in agriculture has been increasing, especially with emerging donors such as Brazil and China.

Global collaboration to ensure food security

There are signs that many governments and the private sector are seriously considering the challenge of investment in smallholder farming and infrastructure. Agriculture's share of Official Development Assistance (ODA) is increasing, although it is still less than seven percent of all development funding.*¹²⁶ At the 2009 G8 Summit, global leaders pledged to provide US\$20 billion over a period of three years to ensure food security in poor countries and help governments in developing countries tackle undernourishment.¹²⁷ At the 2011 World Economic Forum in Davos, 17 major companies launched a New Vision for Agriculture, committing to increase production by 20 percent while decreasing emissions by 20 percent and reducing the prevalence of rural poverty by 20 percent every decade.¹²⁸ Some input companies have entered into partnerships with governments, nonprofit organizations

and research institutions to produce seeds suitable for developing countries.¹²⁹ However, recent food inflation, and its damaging effects on poor countries, calls for a greater conscious effort from developed nations. Developing countries can further ensure access to sufficient amounts of nutritious food by undertaking measures that help reduce poverty and increase income levels. Also, farmers should be given the opportunity to take advantage of new technologies and thereby increase productivity.¹³⁰ In order to achieve the first target of MDG 1 of halving the number of undernourished people by 2015, an additional annual investment of US\$75 billion is required globally, according to Oxfam International.¹³¹

Bilateral development partners and multilateral organizations play an important role in global collaboration toward ensuring food security. Many such organizations have been

In order to achieve the first target of MDG 1 of halving the number of undernourished people by 2015, an additional annual investment of US\$75 billion is required globally.

providing assistance to programs that are aimed at food aid and agriculture, rural development, and nutrition in developing and underdeveloped countries.

Multilateral organizations

The United Nations (UN), the World Bank (WB) and other such multilateral organizations are the major facilitators of development programs in developing and underdeveloped countries. The primary sources of funding for these organizations are the major developed nations and private companies.

* Official development assistance (ODA) is a term coined by the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) to measure aid volume. It is largely used by academics and journalists as an indicator of international aid flow.

Table 3: Financial aid and development programs of multilateral organizations

Funding organization	Details
UN	<ul style="list-style-type: none"> • The UN provides assistance to food and agriculture programs through three entities — the Food and Agriculture Organization (FAO), the International Fund for Agriculture Development (IFAD) and the World Food Programme (WFP).¹³² <ul style="list-style-type: none"> – The FAO is a specialized agency that helps developing countries ensure good nutrition for all by modernizing and improving their agriculture, forestry and fishery practices. It conducts nearly 2,050 field projects around the world, with a total value of US\$768 million.¹³³ – The IFAD works to eradicate rural poverty in developing countries. The agency provides low-interest loans to governments in these countries to work toward food security. Since starting operations in 1978, the IFAD has invested US\$12 billion in 860 projects to help nearly 370 million people.¹³⁴ – The WFP provides assistance to fight hunger worldwide. In 2010, its aim was to provide food assistance to more than 90 million people in 70 countries. In 2009, it spent US\$965 million to buy food for 101.8 million people.¹³⁵ • As soaring food prices were triggering widespread hunger, the UN initiated the High-Level Task Force (HLTF) on the Global Food Security Crisis, in 2008. The HLTF aims to promote a comprehensive and unified response to the challenge of achieving global food security.¹³⁶ • Under the leadership of the UN Secretary General, the task force also involves the heads of various UN specialized agencies, funds and programs, as well as relevant parts of the UN Secretariat, the WB, the IMF, the OECD and the World Trade Organization (WTO).¹³⁷
European Union (EU) ¹³⁸	<ul style="list-style-type: none"> • The EU committed to provide EUR1 billion (US\$1.3 billion), from 2009 to 2011 in assistance toward various agricultural infrastructure improvement programs in developing countries through EuropeAid. • In 2009, the EU and the FAO launched the EU Food Facility, a two-year program to help developing countries achieve long-term food security. So far, US\$315 million of assistance funding has been channeled through this partnership to various operations in 28 countries in Africa, Asia and Latin America.¹³⁹ In Bangladesh, 78,000 agricultural households are getting access to employment through a project of the EU Food Facility. • The EU also provides assistance to underdeveloped countries in Africa and Asia. In Mozambique, the EU invested EUR4.7 million (US\$6.3 million) to improve production, post-harvest storage, processing and marketing for domestic and international markets.
World Bank ¹⁴⁰	<ul style="list-style-type: none"> • In May 2008, the World Bank established the Global Food Crisis Response Program (GFCRP) to provide relief to those countries that were affected by high food prices and the resultant food crisis. • In April 2009, the bank increased the aid under the GFCRP to US\$2 billion, up from the initially agreed sum of US\$1.2 billion. This money has been used to pay food import expenses, buy seeds and feed the poor, children, pregnant woman and infants in many developing countries. • As of April 2011, the GFCRP had disbursed US\$1.1 billion and approved US\$1.5 billion in grants since its inception.
The Global Agriculture and Food Security Program (GAFSP) ¹⁴¹	<ul style="list-style-type: none"> • The GAFSP, which was started in September 2009, is a combined global initiative that includes both public and private sector funding. The initiative addresses the lack of funding in government-led plans for agriculture and food security in developing countries. The GAFSP works closely with multilateral and bilateral assistance partners already engaged in a particular country. • Australia, the US and other major donor countries, along with private donors such as the Bill & Melinda Gates Foundation, have pledged US\$914 million to the GAFSP. Bangladesh, Ethiopia, Haiti, Mongolia, Niger, Rwanda, Sierra Leone and Togo are the major recipients of development assistance from the organization.

Bilateral assistance

Developed countries are major supporters of food and agriculture programs in developing nations. However, donor countries will fall nearly US\$20 billion short of the amount they pledged at the 2005 Gleneagles Summit for all development programs, according to the 2010 OECD aid budget review.*¹⁴² Similarly, the G8 Muskoka Accountability Report, presented at the Toronto Summit in June 2010, also highlighted the aid gap of nearly US\$20 billion. Additionally, in 2008, donor countries committed only US\$15.8 billion as ODA to agriculture and rural development programs. Developed countries will have to increase their funding to nearly US\$53 billion a year, to assist developing and underdeveloped countries in meeting the MDG of hunger reduction.¹⁴³

US — major donor to underdeveloped countries

- In 2009, the US committed to providing US\$3.5 billion, as a part of a three-year commitment to food security in developing countries.¹⁴⁴
- The US Agency for International Development (USAID) provides assistance to developing countries. For instance, in Mozambique, USAID has been able to revitalize

the cashew trade. The number of cashew processing factories increased from only 2 in 2002 to 25 in 2009. This increase not only improved production capacity, but also created 5,000 factory jobs in the country.¹⁴⁵

- USAID has implemented the multibillion dollar ‘Feed the Future’ food initiative.¹⁴⁶ Under this initiative, the US government works with governments in developing countries and multilateral organizations to reduce hunger and poverty. The initiative provides expert consultancy to align development aid and support results-based programs in partner countries.¹⁴⁷
- The major focus countries of the ‘Feed the Future’ initiative are Ethiopia, Ghana, Kenya, Liberia, Mali, Malawi, Mozambique, Rwanda, Senegal, Tanzania, Uganda and Zambia in Africa; Bangladesh, Cambodia, Nepal, Tajikistan in Asia; and Guatemala, Haiti, Honduras and Nicaragua in Latin America.¹⁴⁸

UK — promoting agricultural research

- In January 2011, the Department for International Development (DFID) expressed its support for

In 2009, the US committed to providing US\$3.5 billion, as a part of a three-year commitment to food security in developing countries.

a new research initiative aimed at improving food security. Under this initiative, teams from the UK, India and developing countries will work on ways to improve the disease-resistance and stress-tolerance of staple crops in sub-Saharan Africa and South Asia.¹⁴⁹

- In February 2011, DFID (in conjunction with the Bill & Melinda Gates Foundation) initiated an agricultural research project to help small farmers increase their yields and incomes. Over the next five years, DFID will contribute approximately US\$32 million to the partnership.¹⁵⁰

Australia — focusing on agricultural productivity improvement¹⁵¹

- In May 2009, Australia initiated an A\$464 million (US\$471 million) program, to help eradicate food

* This was the 31st G8 summit held from July 6 to July 8, 2005 at the Gleneagles Hotel in Auchterarder, Perth and Kinross in Scotland.



insecurity and price volatility in developing countries, over a period of four years. Under this initiative, countries in Africa will receive a total of A\$100 million (US\$102 million) in assistance toward eradicating hunger.

- The country is also assisting research organizations, such as the Australian Centre for International Agricultural Research (ACIAR) and the Consultative Group on International Agricultural Research (CGIAR) network, that are focusing on improving agricultural

productivity. An estimated A\$170 million (US\$172 million) has been allocated to research initiatives aimed at improving environmentally-friendly farming techniques and food policies that benefit the poor.

Private sector participation

Many public donors are increasingly partnering with the private sector to meet MDG1. Recently, private sector participation is increasingly sought because these organizations have the skills and expertise that public institutions or governments often lack.



Private organizations can efficiently deal with market irregularities and tackle logistics problems. The US government’s ‘Feed the Future’ initiative, for example, recognizes the private sector as a key ally.¹⁵²

Table 4: Various private sector initiatives

Funding organization	Details
Bill & Melinda Gates Foundation	<ul style="list-style-type: none"> • The Bill & Melinda Gates Foundation has been supporting smallholder farmers (those with limited access to natural or technical resources) to increase agricultural productivity. The foundation provides better farming supplies, training and support networks to such farmers. It is working closely with the Alliance for a Green Revolution in Africa (AGRA) to develop and distribute locally adapted seeds in 16 countries. Over a period of five years, the organization is providing US\$164.5 million to AGRA.¹⁵³ In India, it is providing farmers with affordable irrigation systems, thereby reducing their dependence on rain. The project is estimated to cost US\$27.1 million over the four years from November 2007 to October 2011.¹⁵⁴
Global Alliance for Improved Nutrition (GAIN)	<ul style="list-style-type: none"> • The Global Alliance for Improved Nutrition (GAIN) is a public-private partnership, aiming to provide access to nutritional diets. The organization works with 600 companies, governments and non-governmental organizations, across more than 25 countries.¹⁵⁵ By 2010, the alliance was able to attract US\$73.5 million in investment by the private sector.¹⁵⁶ • GAIN’s major programs include delivering fortified food products to infants, young children, pregnant women, nursing mothers, school children, people suffering from infectious diseases, remote rural populations, refugees or displaced peoples and those who have been seriously affected by the economic crisis.¹⁵⁷ • The alliance participates with private companies, under its GAIN Business Alliance (BA) initiative, to promote market-based solutions which address malnutrition. Unilever has taken the lead, and other major companies engaged in this initiative are BASF, Britannia, Cargill, Coca-Cola, Kraft Foods, Danone, PepsiCo and Mars.¹⁵⁸
Project Laser Beam (PLB)	<ul style="list-style-type: none"> • Project Laser Beam (PLB) is a multimillion dollar public-private partnership project, aimed at the eradication of child malnutrition. The project was initiated in September 2009 by former US President Bill Clinton, in partnership with the WFP, Unilever, Kraft Foods, Royal DSM N.V. and GAIN. • With a budget of US\$50 million over a period of five years, this project will work toward providing access to fortified food to developing countries. Initially, PLB is focusing on Bangladesh and Indonesia, where malnutrition in children is high. The organization is promoting nutritious food along with hygiene and immunization activities.¹⁵⁹
Corporate food and agriculture sector	<ul style="list-style-type: none"> • At a World Economic Forum meeting in January 2011, major companies and governments unveiled a plan to conserve environmental resources and spur economic growth through agriculture. • The initiative aims to increase food production by 20 percent and reduce greenhouse gas emissions and rural poverty by 20 percent in every decade. • The initiative is led by 17 global food and agriculture sector companies, including Archer Daniels Midland, BASF, Bunge Limited, Cargill, The Coca-Cola Company, DuPont, General Mills, Kraft Foods, Metro AG, Monsanto, Nestle, PepsiCo, SABMiller, Syngenta, Unilever, Wal-Mart and Yara International.¹⁶⁰

Funding organization	Details
Syngenta ¹⁶¹	<ul style="list-style-type: none"> • Syngenta, a private biotech company, provides its various technologies royalty-free to farmers in developing countries. In the least developed countries, the company does not enforce patent protection for any plant biotechnology or seeds invention.¹⁶² • In November 2011, Syngenta and ETH Zurich (a science and technology university) announced the launch of a partnership in the field of sustainable agroecosystems.
Unilever ¹⁶³	<ul style="list-style-type: none"> • Besides being a partner in initiatives such as GAIN, Unilever — a major consumer products company — has been actively participating in providing improved food items to the undernourished. • In 2009, a partnership between the UN World Food Programme (WFP) and Unilever contributed EUR2.6 million (US\$3.7 million) toward nutrition programs in Colombia, Indonesia and Kenya.
Nestle ¹⁶⁴	<ul style="list-style-type: none"> • Nestle continues to make significant contributions to water and food security, and rural development. This includes contributing to rural development by providing research assistance to small farmers and other suppliers of their products. As a major initiative, Nestle purchases 40 percent of its milk requirements from smallholder farmers. • The company also provides consultation on various best practices to farmers. Nestle has technical advisors who provide such training and consultation. • Nestle also invests in improving the productivity of crops, and, transport and storage infrastructure in developing countries. In Colombia, the company helped smallholder farmers replace their low-yielding disease-prone coffee varieties with new high-quality beans. The company has supported local stakeholders, farmers and authorities to improve infrastructure needed to link farmers in rural communities to markets. • Nestle has been also focusing on providing access to nutrition at affordable cost to low-income families. A successful initiative was fortifying Maggi (a food brand of the company) food cubes with iodine in Central and West Africa.

Outlook – Improving cooperation among development partners to ensure food security

By 2050, the global population is expected to reach 9 billion, requiring at least a 70 percent increase in agricultural production in order to ensure food security, according to the FAO.¹⁶⁵ Also, the changing food habits of people in emerging countries will result in increased demand for meat, fruits and vegetables.¹⁶⁶ However, at the same time, there has been no increase in the availability of necessary resources such as global arable land and water. The available land is already being lost to increased urbanization, desertification, salinization and rises in sea levels. Experts fear that a similar situation will affect the availability of global blue water (surface water and ground water), 70 percent of which is currently used in agriculture. By 2030, demand for water for agriculture may rise over 30 percent from the current levels.¹⁶⁷

Over the next 10 years, food prices, especially for wheat and coarse grain, are expected to rise by nearly 40 percent in real terms, according to the UN.¹⁶⁸ This price inflation will most affect the poor, as it will further lower the access to food and consequently exacerbate the problem of undernourishment. Therefore, to ensure that all people have access to food, agricultural production needs to be bolstered and poverty needs to be tackled. Agricultural companies promote genetically modified crops as an effective way to augment productivity through sustainable farming techniques and growing more food on the same land area. However, these claims of increased productivity and the safety of such crops have been challenged by environmental activists,

and thus their use in alleviating food security has yet to be established.^{169, 170}

Cooperation among global organizations and national governments to create agricultural opportunity

Practical solutions to feeding billions of people in the future will require a holistic approach encompassing efforts from international organizations and national governments to overhaul agricultural models. In its report published in June 2011, Oxfam laid down three distinct strategies to tackle the food insecurity issue.

1. A new global governance for food crises – Reforming international and local governance

Although many organizations are working toward providing assistance to ensure food security, there is still scope for reforms. The recipient governments need to empower their people by creating jobs and investing in climate adaptation, disaster risk reduction and social protection, while international organizations can garner support to reduce trade ambiguity, increase food aid and strengthen financial markets.¹⁷¹

Organizations and developed nations can work toward improving the international market to facilitate the open trade of food commodities. The international community can further coordinate to tackle export restrictions imposed by many countries on their food production, in addition to a push for access to information on food stock with various countries. Experts believe that the tendency of governments to panic-buy and hoard

By 2050, the global population is expected to reach 9 billion, requiring at least a 70 percent increase in agricultural production in order to ensure food security.

is in large part a consequence of poor market information.¹⁷²

At the same time, donor countries and organizations should ensure that adequate resources are available to the recipient countries to tackle any situations arising out of climatic changes. Recipient countries should also focus on mobilizing the funds in effective ways, such as improving social protection to the poor. A successful social protection program that had changed many lives was Brazil's Fome Zero (Zero Hunger) program (launched in 2003), which combined strategies such as direct cash transfer to harvesting rain water for increased production. Governments of underdeveloped countries can focus on such universal programs, which tend to be more efficient and protect more people.^{173, 174}

2. A new agricultural future – Improving smallholder farming and agricultural investment

Most agronomists believe that a major way to boost production is through the improvement of smallholder farming. There are nearly 500 million smallholder farmers globally, producing food for nearly one third of the global population,

according to Elwyn Grainger-Jones, IFAD Director for the Environment and Climate Division. Nearly 80 percent of the farmland in Africa and Asia is cultivated by these farmers.¹⁷⁵ Agronomists believe that the tropical African region, where most farming is done by smallholder farmers, can produce sufficient food to end food insecurity in many countries. However, these farmers lack access to technology that can improve production.¹⁷⁶ Moreover, they are unaware of both existing and prospective markets. Further, unlike large farmers, these farmers are excluded from policy-making processes, as they are not organized and mostly illiterate.¹⁷⁷ They also lack credit-worthiness, and thus are deprived of financial help from institutions.¹⁷⁸ In such cases, governments need to explore innovative collaborations to facilitate the food production of smallholder farmers. In Morocco, the government has developed a program for smallholder farmers to provide them with bank loans, advisory services and improved seeds. Under the program, 50 hectares of land is leased by the government to a commercial farmer, who in turn makes a commitment to work with surrounding smallholder farmers. The commercial farmer also provides them with the necessary expertise to improve their food production.¹⁷⁹

Studies have shown that smallholder farmers can effectively improve productivity, if provided with opportunities enjoyed by large farms, such as irrigation, new seeds, fertilizers and subsidies. Many of these farmers have shown that they are willing to explore market opportunities.¹⁸⁰

Governments will also have to understand that the goal of these farmers is to survive, not to maximize profit. Poor farmers need assistance in risk management, and governments and organizations can assist them by providing better weather information, storage infrastructure and access to insurance. Experts believe that preparing smallholder farmers to deal with the effects of climate change may also improve their productivity manifold.¹⁸¹ Some experts are encouraging a paradigm shift in the way water use for agriculture is envisioned, and encouraging greater focus on green water (the water that is available in soils and utilized by plants) and less on blue water (the fresh water available in lakes, rivers, and streams.) This would require a shift in funding support — less on construction of canals and other standard approaches, and more on irrigation that focuses on training smallholders to practice techniques that increase the soil's capacity to hold water.¹⁸²

Experts believe that the tendency of governments to panic buy and hoard is in large part a consequence of poor market information.

At the same time, donors will have to continue improving their financial assistance for agriculture. After bottoming out in 2006, ODA for agriculture is rising again. Multilateral organizations such as IFAD and private organizations are now providing financial and technical assistance to farmers to improve their productivity. In February 2011, the Bill & Melinda Gates Foundation pledged to donate US\$70 million to agricultural research projects helping smallholder farmers in Africa and Asia.¹⁸³

Further, private sector companies can effectively link smallholder farmers to organized markets by integrating them into their supply chain. By doing so, companies can improve their own corporate sustainability, brand development and customer loyalty, as well as help farmers improve their economic conditions.¹⁸⁴



Table 5: Examples of cooperation among private players and smallholder farmers¹⁸⁵

Initiatives	Details
Reviewing supply chain	Del Cabo , a US wholesaler of organic vegetables, holds annual meetings in Mexico to analyze various market trends, plan planting and harvesting schedules, and develop strategies to support organic production. The network works to solve problems including internal funding mechanisms to offset losses due to changes in market conditions or to losses in field crops.
Creating partnerships and co-investment	Cadbury faced supply challenges in its cocoa plantation in Ghana due to deteriorating soil quality, declining productivity and the fact that smallholders were finding alternative employment. The company made a substantial investment to improve productivity, which attracted support and further investment from the United Nations Development Programme (UNDP), the Ghana Cocoa Board (COCOBOD), local government, farmers and communities.
Creating new farmer business models	In Colombia, Alpina Foundation is working with Oxfam to develop efficient small-scale dairies, each of which can process the milk from up to 200 smallholder dairy farmers. If this pilot project proves successful, it will be scaled up to integrate thousands of small dairy farmers into Alpina’s supply chain.
Providing assistance in difficult times	When purchasing supplies for its canteens in Madagascar, Sodexo decided to factor in the effects of the fluctuating annual household incomes of smallholders. It offered advance payments and created a buffer fund in order to enable smallholders to continue production even when their incomes were low. Further, it sourced from alternative regional suppliers when smallholders could get higher prices in local ‘wet’ markets.

Cooperation between farmers and the private sector not only facilitates greater use of technology and expertise, but also helps companies increase their sales by building their brand and increasing awareness among consumers. Table 5 lists a few examples of cooperation among smallholder farmers and the private sector.

However, national governments will have to be cautious in their approach to involve private companies, as these smallholder farmers largely remain unaware of any policy reforms and can therefore be easily exploited. Experts believe that, to protect the interests and needs of these farmers, governments will have to control the decision-making aspect of private partnerships much more closely.

3. Focusing on the ecology — building the new ecological future

There is also a need to promote a new model of prosperity, which respects ecological boundaries and ensures

equitable distribution of resources. A related challenge would be to garner political support and commitment for such a model on a global scale. Government commitments and resultant actionable frameworks are necessary to mobilize shifts in the investment behavior of businesses and consumers toward this new model, thereby ensuring its successful implementation. Global leaders need to set clear targets on climate change, biodiversity, water and other issues to ensure a smooth transition to the new model.

Many countries and leaders have acknowledged that an early shift to a low-carbon economy is the low-cost path to long-term international competitiveness and environmental sustainability. The Cartagena Dialogue is an important initiative in this direction. The Dialogue comprises countries from varying levels of economic development collaborating to push for international climate negotiations to be more actionable and conclusive.^{187, 188}

Smallholder agriculture lies at the very heart of the climate and food security response of our next agricultural revolution. While there are challenges, there are also opportunities. We must approach this ‘new revolution’ with the understanding that agriculture and the environment must be addressed as a package.

– Kanayo F Nwanze, President, International Fund for Agricultural Development (IFAD)¹⁸⁸

In addition to such international cooperation initiatives, the success of the transition to a new global economy that respects planetary limits will also depend on committed action at a national and regional level. Developing countries will need to engage in a rapid shift towards low-carbon energy and infrastructure. Poor countries, on the other hand, need to safeguard themselves by not employing the environmentally detrimental, resource-intensive patterns of production and move directly to the low-carbon model.¹⁸⁹

Improving soft infrastructure for equitable access

Enhancing 'soft' infrastructure such as communication networks and knowledge sharing is one way development projects aimed at food security are effectively implemented and are ensured a greater chance for success. In India, the Ministry of Agriculture has launched an agricultural marketing initiative, the Agricultural Marketing Information Network (AGMARKNET), aimed at linking all important agricultural produce markets in the country. AGMARKNET is expected to provide timely, accurate and sufficient market-related information such as market fees and market charges to improve efficiency in agricultural markets.¹⁹⁰

At the same time, organizational infrastructure is also important to provide better opportunities to small farmers. Governments and development organizations can facilitate the grouping of farmers in 'production organization' or 'marketing organization,' which will help them access information on markets and technology, as well as improve small farmers' financial capacity. In the Lao People's Democratic

Republic (Lao PDR), most farmers, being smallholders, were unable to capitalize on commercial agriculture production. The government started creating agriculture groups to increase cooperation among farmers, enhance the financial capacity and facilitate growth. The country now has vegetable production groups, organic vegetable production groups, fruit production groups, coffee production groups, tobacco production groups, poultry production groups, aquaculture groups and rubber farmer groups.¹⁹¹

Recognition at global platforms

Greater recognition of this issue on global platforms such as the G8 and G20 is expected to improve clarity on food production requirements and trade transparency. In fact, most experts believe that the G20 is a major forum to discuss the issue of price volatility, as its members are major stakeholders in the oil and agricultural commodity markets. Also, by 2008, its member countries accounted for 65 percent of farmland and 77 percent of global grain production.¹⁹²

At the recently concluded G20 meeting in France, the agricultural ministers approved a common action plan to improve food security. The G20 declaration announced in June 2011 initiated the launch of the following three initiatives focusing on food producing and information exchange:¹⁹³

- International Research Initiative for Wheat Improvement (IRIWI)
- Agricultural Market Information System (AMIS)
- Global Agricultural Geo-Monitoring Initiative (GAGI)

The IRIWI initiative focuses on combining the efforts of national research programs and international organizations to promote agriculture



The consensus reached today by the G20 agricultural ministers marks an historic union of resolve in combating the pressing challenges of hunger and food price volatility confronting our world with greater regularity.

– Tom Vilsack, US Agriculture Secretary¹⁹⁵

production, while AMIS will encourage major players in agri-food markets to share data, enhance existing information systems, and strengthen information exchange and policy coordination.¹⁹⁴

As the target date for meeting the MDGs approaches, ensuring that every household has access to food is still a grave concern, one that will remain a major issue well beyond 2015. Although free market policies and the efforts of international organizations can reduce price volatility in the short term, concerted efforts by donor nations, recipient governments and private organizations are necessary over the long term to address it effectively. On the one hand, recipient governments will have to focus more on capacity building and sustainable economic growth. On the other, developed nations and private organizations will need to assist them with finance, technology and expertise. All these initiatives, to be truly effective, must be coordinated on a global platform. Such an holistic approach will not only ensure the MDGs are met, but also ensure continued equitable growth across the globe, while providing much needed food security.

Further information

How KPMG firms can help

Planning and Advisory

- Scoping Studies and Needs Assessment for inbound or regional funding or implementing organizations
- Development of Fundraising Strategies for Development Organizations

Strategic Reviews and Assessments

- Mid-term and End-Term Reviews of multi-state Social Development Projects and Programs

Aid Efficiency and Transparency

- Pre-Grant and Grant Expenditure Evaluations of non-profit Organizations, on behalf of Funding Agencies

Performance Enhancement

- Developing program implementation, Monitoring and Evaluation Systems
- Developing Communication Strategies and Frameworks for Development Agencies

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