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**World Food Supplies: Challenges and Future Prospects**

During the past two decades, world demand for food has been increasing steadily along with population growth, incomes and the diversification of diets. Simultaneously, public and private investment in agriculture (especially in staple food production) had been declining. As a consequence, there has been a stagnant or declining crop yield growth in most developing countries. Until recently, climate change and rising food prices did not feature much into the development equation.

**1. Trends in Global Food Supplies**

Food security depends on the available world supplies of food, the income of the designated population, accessibility to the available supplies, the consumption rate of food, and the amount that can be set aside for future use<sup>1</sup>. The current world food situation is dictated by emerging issues and driving forces in a context of globalization, including income and population growths, climate change, high energy prices, declining agricultural productivity and poor market linkages.

During the past couple of years, developments in the global food supply, demand and trade have raised concerns over the future prospects of food supply. The current food crisis has revealed deficiencies in the world capacity to rapidly adjust to shocks in the world food production system. As reported by IFPRI<sup>2</sup>, the world food equation has been rewritten -- demand has been driven by high economic growth and population change and gains in agricultural outputs and productivity have been quite variable.

In mid-1990s, the world grain production showed an upward trend and global grain yields per hectare were nearly 2.5 times the 1.15 tons per hectare of the 1930s. A couple of decades later, and according to FAO, world cereal production in 2008 is forecast to increase 2.8 percent to a record of 2180 million tonnes. However, despite the anticipated increase in world output, cereal markets will remain tight in 2008-2009 as total cereal supply (stocks plus production) will barely exceed the anticipated use and the world cereal will recover only marginally from the current estimated 30-year low.

The outlook of the world food situation suggests that there will potentially be large fluctuations in food production and prices, and higher associated risks of food insecurity for the world's

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<sup>1</sup> Johnson, D.G. (1998) Food security and world trade prospects. AJAE 80(5):941-947.

<sup>2</sup> Von Braun, J. (2007) The world food situation: new driving forces and required actions. IFPRI, Food Policy Report.

most vulnerable countries and people as warned by IFPRI back in 1997<sup>3</sup>. The challenge for policymakers, researchers and the international community remains “how best to minimize these risks to achieve food security for all.”

## 2. Poverty and Food Security

The world is entering a new era of uncertainty about global food security. While agricultural commodity prices have declined from the highs of early 2008, they are unlikely to return to their historically low levels. Demand for food will continue to increase, as a result of growing urban populations with higher incomes; yet the necessary response in terms of increased production is critically dependent on achieving higher levels of growth in yields of cereals than has been the case over the past decade. It must be also achieved in the context of both growing limitations on land and water availability and ever-more frequent shocks to production caused by climate change-related disasters such as floods, storms and droughts. Those most at threat are poor rural people in the developing world.

Although it is recognized that considerable progress has been made towards achieving the Millennium Development Goals (MDGs), particularly MDG1 related to halving the proportion of people living in extreme poverty and hunger by 2015, the world falls short of achieving this goal. Poverty estimates published by the World Bank reveal that 1.4 billion people in the developing world (one in four) were living on less than US\$1.25 a day in 2005, down from 1.9 billion (one in two) in 1981. These numbers show that poverty has been more widespread across the developing world over the past 25 years than previously estimated, but also that there has been strong and regionally uneven progress toward reducing overall poverty.

Rapid economic growth in East and South Asia – particularly China – has helped reduce the proportion of those living on less than a dollar a day from 30 and 43 per cent, respectively, in 1990 to 9 and 31 per cent, respectively in 2004. The challenge is greatest in sub-Saharan Africa, where despite economic growth rates averaging over 5 per cent for the last three years and a slight decline in the proportion of extremely poor people (from 47 to 41 per cent) the *number* of people living on less than a dollar a day actually increased by 58 million between 1990 and 2004, reaching around 300 million. The chance that Africa will achieve MDG1 by 2015 is bleak.

Global poverty remains overwhelmingly rural, and will continue to do so in the foreseeable future as 75% of the extremely poor people in developing countries – some 720 million people – live in rural areas<sup>4</sup>.

## 3. Threats and Challenges

As previously indicated, people continue to live in conditions of extreme poverty, hunger persists, and inequality is rising. Poor rural people face new challenges to their well-being,

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<sup>3</sup> Pinstrup-Andersen, P, R Pandya-Lorch, and M.W. Rosegrant (1997) The world food situation: recent developments, emerging issues and long-term prospects. IFPRI, Food Policy Report.

<sup>4</sup> These figures are projections based on data in S. Chen and M. Ravallion, Absolute Poverty Measures for the Developing World, 1981-2004 (Washington, D.C., World Bank, 2007).

and indeed to their survival, among them climate change, spiraling food and energy prices and bio-fuel production.

The attainment of MDG1 is being seriously undermined and/or compromised by food, financial and climate change crises being currently experienced by the world economies. As recently indicated by the UN Secretary General, “we face nothing less than a development emergency.” He then warned that “new global challenges -- an economic slowdown, high food and fuel prices, and climate change -- threaten to reverse the progress we have made.” These are concerns which we all share and the growing food crisis and economic downturn provide compelling reasons to succeed and no further excuses for failure.

## **Climate Change**

The 2007 report of the Intergovernmental panel on Climate Change (IPCC) removed any remaining doubts about climate change and humanity's role in it. The warming of the climate system is unequivocal and accelerating.

Agricultural production is expected to fall in tropical and most temperate regions as a consequence of climate variability and uncertain growing season length, decreased water availability, new patterns of pests and diseases and a loss of biodiversity. A recent analysis suggests that production in developing countries could decline between 9-21 per cent by 2080. Africa is expected to fare worst.

Among other factors, analysts developing prospective scenarios find reason for concern in the likely impact of climate change on agricultural production and on food markets. It is believed that agricultural output may decrease by 20% in developing countries by 2020 as a result of climate change. IFPRI<sup>5</sup> warns that up to 22% reduction in cereal production may be expected between 1990-2080 in South Asia with an average loss of 15% in cereal output in 40 developing countries by the same horizon. These losses may however, be offset by increased production in developed countries and in some other regions, such as Latin America. The global prospect, even in the event of serious progress in mitigating carbon emissions remains bleak as to a continuous improvement of the balance of food supply and demand.

The effects of climate change are already being felt in Sub-Saharan Africa. Crop failures and livestock deaths are causing higher economic losses and increasingly undermining food security. In some areas, rainfall has decreased by as much as 50% since the 1960s, and the IPCC estimates that in some African countries, crop yields from rainfed agriculture could decline by as much as 50% by 2020, an alarming figure for an already struggling and economically fragile continent.

There is an evident need for support for small farmers both to adapt in response to the potential impact of climate variability and change; and to access carbon markets so they can benefit from the available environmental services. Although they are the least responsible for climate change, they are among the most vulnerable to its impact.

## **Rising Food Prices**

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<sup>5</sup> Von Braun (2007) op. cit.

We have recently witnessed an unprecedented food crisis due to soaring food prices. In 2007 and early 2008 food prices on world markets consistently increased as a result of a variety of cyclical and structural factors including, but not necessarily limited to (a) the increasing global demand for agriculture products, due in turn to rising incomes and growing populations; (b) the increased price of fuel, feeding into both agricultural production costs and increased demand for biofuels; (c) the low rate of productivity growth in agriculture – due in large part to declining investment, combined with drought-induced crop failure in countries such as Australia; and (d) low levels of global food stocks, which declined by over 40 per cent between 2002 and 2007. This has been further exacerbated by market speculation, and the inappropriate emergency trade policies.

By early 2008 the prices for all major food staples – maize, rice, wheat and edible oils – were at, or close to, all-time highs. In July 2008, global food prices were more than 80% higher than they had been three years earlier with corn prices at their highest levels in 11 years and rice and soya reached their highest levels in 34 years. Over the past three years, international prices have almost doubled in nominal terms, and real prices have risen dramatically. This has affected almost all food commodities, including meat, dairy, oils, sugar and most importantly, cereals. These price increases exposed the vulnerability of large numbers of households, and may have driven 100 million more people into poverty and hunger<sup>6</sup>. While the risks may be more pronounced in urban areas, they are significant in rural areas as well, where more than 75 per cent of the poor reside. Although commodity prices have declined over the past few months, yet over the medium- to long-term food prices are expected to remain significantly higher than their 2004 levels.

It is thus becoming increasingly evident that the world is entering a new era, characterised by profound uncertainty as to global food supplies. Demand for food is projected to increase by 50 per cent by 2030, as urban populations and incomes grow. It is not clear whether production of food can keep pace with that demand. Growth in yields of cereals has declined from 2-5 per cent in the 1970s and 1980s to 1-2 per cent in the mid-1990s; and the substantially higher rates of growth in agricultural productivity that are urgently needed must be achieved in the context of both growing limitations on land and water availability and ever-more frequent shocks to production caused by the effects of climate change.

The global commercial farming sector is already responding to the new price signals, and it will be key to the supply response. Yet commercial farming will not, on its own, solve the problem. The role of the 450 million smallholder farmers worldwide is critical. They have the potential to produce more, to provide food for their families and their communities, to increase their agricultural incomes, and to manage their land sustainably.

Smallholder farming can be extremely effective in driving both wider economic growth and poverty reduction. Viet Nam is a case in point. Seventy-three per cent of Viet Nam's population live in rural areas and agriculture remains their main source of livelihood, predominantly from smallholder plots. Two decades ago Viet Nam was a severely food-deficit country. Today it is a major food exporter, among the largest rice exporters in the world, mainly thanks to development of the smallholder farming sector. In recent years, Viet Nam

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<sup>6</sup> "Comprehensive Framework for Action", High-level Task Force on the Global Food Crisis, July 2008

achieved growth rates of 7 to 8%. Just as importantly, it combined this with rapid poverty reduction – down from 58% in 1993 to less than 15% last year.

But to realise this potential, they need timely and effective support. Without it, they will find it even more difficult to access the inputs and services they need, and to get their produce to markets. Poverty and hunger could rise further, and ever greater amounts of resources will be needed for food aid. In this scenario, progress towards the MDGs to which the world has committed itself will be wiped out. Supporting these poor rural people to be part of the solution to achieving global food security must be a priority for the international development community, including Canada and IFAD.

### **Role of agriculture and rural development in the new global development agenda**

In a global context of cheap and plentiful food, for many years there has been inadequate and declining investment in developing country agriculture, by governments, the private sector and development agencies alike.

This underinvestment by national governments is reflected in the pattern of official development assistance (ODA). The amount of ODA going to agriculture fell in nominal terms from US\$8 billion in 1984 to around US\$3 billion in 2006; while as a proportion of total ODA, commitments to agriculture declined from a high of about 18 per cent in 1979 to less than 3 per cent in 2006. This was the case even for the region most dependent on agriculture: sub-Saharan Africa.

In recent years however, there has been a growing recognition that agriculture is central to development, and that there is an urgent need to increase investments in the sector. Released in later 2007, the World Bank's 2008 World Development Report: Agriculture for Development recognized the centrality of agriculture to development – as a driver of growth for the wider economy, as a livelihood for the majority of people living on less than US\$1 per day, and as a provider of environmental services. It pointed out that gross domestic product (GDP) growth in agriculture is at least twice as effective in reducing extreme poverty as GDP growth originating in other sectors.

Concerns over agricultural development are gradually being translated into increased resource flows to developing countries. For example, in April 2008 IFAD swiftly made available up to US\$ 200 million from its existing programs to cover the short-term needs of smallholder producers. The World Bank responded both by establishing a Global Food Crisis Response Program, to be financed by internal resources and a multi-donor trust fund and by committing itself to nearly doubling its agricultural lending to sub-Saharan Africa over the next year to US\$ 800 million. A number of bilateral donors –including France, Japan, Saudi Arabia, Spain and the European Commission - are also planning or realising major initiatives to substantially increase their support for food production and agricultural development.

Overall, a consensus is emerging on the crucial importance of investment in agricultural and rural development to feed the world, achieve the MDGs – particularly MDG1, and address climate change. A key issue however, is institutional capacity to manage large increases in resource flows.

Despite the new commitment to increasing levels of development assistance, the needs remain enormous, and largely unfulfilled. A number of estimates have been made of the level of overall public investment and foreign assistance needed for agricultural and rural development in developing countries. Among them, a Task Force organized by the United Nations MDG Africa Steering Group estimated annual development assistance needs for African agriculture and rural development to be between US\$7 billion and US\$8 billion per annum; while the United Nations Secretary-General has suggested that resource requirements for agriculture and rural development in all developing countries could be as much as US\$20 billion per annum – almost a seven-fold increase over current levels.

## **A Global Response**

The triple scourge of poverty, climate change and high food prices constitutes a set of global challenges which require a fully coordinated global response to deal with today's short-term needs and meet the medium to longer term imperative of higher and sustainable agricultural productivity and production.

We face a situation of great danger, which also provides great opportunities to make progress towards feeding the world in more sustainable, more equitable and more effective ways. Although markets are beginning to adjust, concerned countries and the international community should work together to design innovative approaches to providing a more sustainable and robust world food supply.

With global food consumption rising, largely due to demand for a meat-rich diet in emerging economies, the challenge of feeding booming populations is growing by the year. Countries such as Saudi Arabia which invested in high-cost and uneconomical agriculture in the 1980s and 1990s by “greening” the desert are now shifting to innovative approaches using “shadow producing countries.” The Director General of IFPRI warns that “this is a new trend within the global food crisis...the dominant force today is security of food supplies.”

Countries with financial resources have started scouting for cultivable land. Saudi Arabia for example has planned to set up large-scale projects (in the excess of 100,000 hectares) overseas (possible countries are Sudan, Ukraine, Pakistan and Thailand) for growing crops such as corn, wheat and rice with the majority of these crops being exported back. The United Arab Emirates is looking into Kazakhstan and Sudan, Libya is hoping to lease farms in Ukraine and South Korea has hinted at plans in Mongolia. Even China – with plenty of cultivable land, but may fall short of water – is exploring investments in south-east Asia.

Solutions for the immediate response must not come at the expense of action for longer-term and sustainable food security. This can only be achieved through a step increase in investment in agriculture and rural development across all aspects of the production cycle and enhanced dialogue with those on the ground – the poor rural people themselves, their communities and their organisations.

## **Future Prospects and Opportunities**

What does the future hold for the world supply for food? Who will be the main actors of the new architecture of the food production system and chain? What role will governments play? More and more questions arise as the current crisis endures.

First, as mentioned earlier, while the majority of agricultural production will continue to come from larger farms, there is a particular opportunity to dramatically increase smallholder productivity and production. This means that policies and programs that address the current constraints faced by smallholder farmers should encourage further public and private agricultural and rural development investments in many low-income, food-deficit countries.

These investments should be targeted at providing access to agricultural inputs, support to agricultural research and the rehabilitation of rural infrastructures. The expected result will be a boost and sustained productivity of smallholder farmers and an increase in the welfare of rural households welfare as well as aggregate local food supply, with due attention to environmentally sustainable practices.

International food assistance programs are critical to address the needs of vulnerable populations and prevent their sliding into destitution and resorting to harmful coping mechanisms. However, what is needed is to assist the concerned countries to build their capacity to produce enough for their populations and move away from food assistance and emergency dependency.

Finally, as agreed in the CFA, there is an opportunity for an international leadership in adopting a renewed strategic position on key issues such as agricultural trade, and to assess the most effective ways to tackle food market volatilities. High prices could lead to responsible agricultural trade policies that benefit low-income countries, for example in developing a viable domestic commercial farming sector. Strong commitments to reform agricultural subsidy programs and market access would help remove a major barrier to progress in the World Trade Organization (WTO) Doha trade talks, while still implementing the existing agreed provisions to protect consumers in low-income, food-importing countries and including provisions to complement efforts to increase investment in smallholder agriculture in developing countries.

## **Concluding Remarks**

The current context is a wake up call for immediate action. It calls for urgent action by the international community. Food security is at the top of the political agenda for the first time since the 1970s as attested by various forums (Tokyo International Conference on Africa's Development (TICAD) in May 2008, FAO High Level Conference in June 2008, the G8 Summit in Japan in July 2008, etc.). The rising food prices and the related food crisis have rang a bell and pulled an alarm for all countries to look for places to secure supplies of agricultural goods and the faith in the international food market is waning.

For some vulnerable groups, even short-term food deprivation can have profound effects on survival chances, health and physical development. Moreover, progress towards achievement of the Millennium Development Goals (MDGs) will be undermined. Climate change and higher food prices have not only set back progress towards the reduction of poverty and hunger

(MDG1), but will also make it more difficult to achieve the targets for education (MDG2), child and maternal mortality reduction (MDGs 4 and 5), and the spread of major diseases (MDG6).

According to the International Convention on Economic and Social Rights, every human being has the right to adequate food and the fundamental right to be free from hunger. Realization of the right to food requires that every man, women and child has a right to access at all times adequate food or means for its procurement in a dignified way. Adequate food means food which is of sufficient quantity and quality to satisfy the dietary needs of individuals, free from adverse substances and acceptable within a given culture. We have a moral obligation to act now!