

## FOOD SECURITY

**F**OOD SECURITY IS THE CONDITION IN WHICH EVERYONE has access to sufficient and affordable food. Ten million hunger-related deaths every year, half of them children, testify to our failure to achieve global food security. Over 850 million people remain trapped in the spiral of hardship that hunger imposes, a figure which continues to rise even amidst the riches of the 21st century. As developing countries grapple with the complexities of biotechnology and the alarming impact of climate change, it is extraordinary that the major powers should choose this moment to trigger a craze for biofuels, adding pressure on world food prices.

## MILLENNIUM DEVELOPMENT GOALS

The first Millennium Development Goal (MDG) sets targets for poverty and hunger. In contrast to the bewildering variety of definitions of poverty adopted in country strategies, the benchmark for hunger is consistently based on an average daily intake of 2100 kilocalories. Where groups of people are coping below this threshold, they are food insecure and will experience the symptoms of malnutrition – impaired ability to learn or to work, and reduced resistance to disease. Hunger is therefore a cause as well as a consequence of poverty.

In adopting a target to reduce by half the proportion of people experiencing hunger by 2015, governments signing the Millennium Declaration were overriding a commitment made just 4 years earlier at the World Food Summit of 1996 which applied the same target to the number of people. Rising population figures mean that 170 million fewer people will be targeted by the MDG programme than would otherwise have been the case.

The MDG progress report published in 2005 was pessimistic about the prospects for achieving the hunger-related Goal. Rapid progress over two decades to the early 1990s has ground to a halt to the extent that hunger is currently increasing by about four million people each year. The State of Food Insecurity in the World 2006 published by the Food and Agriculture Organization (FAO), identifies 32

countries of particular concern, where prevalence of hunger is 42% and average calorie intake is lower than it was 30 years ago. Amongst the success stories, Ghana has reduced the prevalence of hunger from 37% to 12% over the MDG period;

Ethiopia and Mozambique have also been commended for their relative recovery from desperate situations.

Although Sub-Saharan Africa has proportionately the greatest food insecurity with 33% of its people undernourished, many countries in South Asia appear to be moving backwards. Food security in rural India has deteriorated over the last ten years with wheat production falling and the largest number (212 million) of undernourished people in the world – this in a country trumpeted as a modern economic powerhouse. Likewise, China's economic miracle is yet to reach out to 150 million hungry citizens.

## CLIMATE CHANGE AND FOOD SECURITY

Surprisingly, neither the MDG nor the FAO report makes any reference to climate change. Yet the Intergovernmental Panel on Climate Change (IPCC)

working group 2007 report paints an almost cataclysmic picture in which «for even small temperature increases of 1-2 degrees [...] access to food in many African countries is projected to be severely compromised by climate variability and change [...] in some countries yields for rain-fed agriculture could be reduced by up to 50% by 2020». As well as falling yields in hotter temperatures, agriculture will suffer from the predicted increase in drought and floods, already a serious short term cause of food insecurity. In South Asia climate change threatens to upset the stable monsoon pattern around which farming has evolved.

At global level, adaptation of agriculture to climate change will typically involve selection of alternative crops, revised planting dates, improved irrigation and modified chemical inputs. Investment on this scale however is likely to be beyond the poorest countries whose economies are predominantly dependent on agriculture. For this reason they «will be hit earliest and most severely» according to the UK Stern Review Report published in 2006.

## DISCUSSION

“ There are people in the world so hungry, that God cannot appear to them except in the form of bread. ”

CHARLES DICKENS

Developing countries are instead undertaking National Adaptation Programmes of Actions (NAPAs) as directed by the UN Framework Convention on Climate Change. Recognising the urgency of the situation and the limited capacity for major adjustment programmes, NAPAs focus on community-based low-cost options for dealing with climate variability.

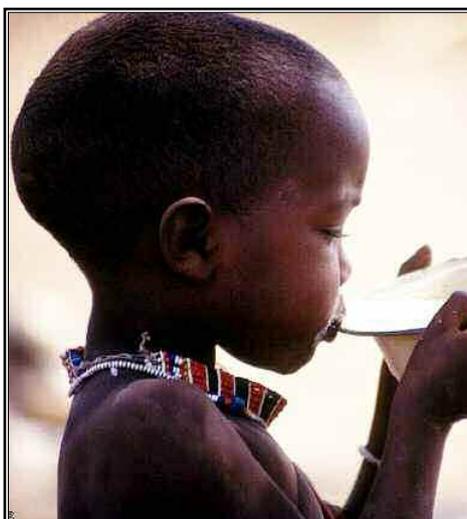
## BIOTECHNOLOGY AND GM CROPS

Climate change is not the only seemingly unstoppable force assailing developing countries in their search for food security. Scientific advances in agriculture have brought great benefits, notably in the “green revolution” originating in the 1970s. However, unlike the green revolution which was largely driven by state funding, today’s biotechnology puts seed management and patents in the hands of a small number of very large international companies such as Monsanto, Dow and Syngenta.

One consequence has been a rapid decline in food crop varieties as favoured seeds are mass-marketed. Industrial crops are now limited to about 150 varieties, rendering superfluous the inherited local wisdom acquired over generations. The implications of the loss of biodiversity in both seeds and local ecosystems for resistance to disease or climate change are uncertain.

Genetically-modified (GM) crops, in which a gene of desired characteristic is transposed from one plant to another, are the most extreme and controversial output of the biotechnology companies. Offering higher yields, lower chemical inputs and higher nutritional value, GM crops sound like the panacea to food insecurity. The snag is that, under the current global regime of intellectual property rights, local farmers lose control over their own produce. There are doubts as to whether developing countries have the capacity to establish regulatory frameworks to manage inevitable conflicts of interests between the local stakeholders (farmers, consumers, and governments) and global shareholders.

Governments therefore face difficult policy decisions to achieve food security. In the event, led by Brazil, South Africa, China and India, the majority of developing countries have adopted GM crops, accounting for over 40% of world production. The African Union endorses the technology as does the Alliance for the Green Revolution in Africa, the \$150 million programme announced jointly by the Bill and Melinda Gates Foundation and the Rockefeller Foundation. Worries about contamination and the wider loss of biodiversity have enhanced the importance of local seed banks now established by many developing countries to protect their national assets.



Production of petrol additives such as ethanol and biodiesel from plant crops has surged in popularity as a means of reducing dependence on fossil fuels and cutting carbon dioxide emissions. The EU has announced that these biofuels will contribute 10% of transport fuels by 2020 and both US and China have similar targets.

The consequence is that land and crops which might otherwise contribute to global food security will be devoted to satisfying travel-rich western lifestyles. By coincidence, the number of vehicles in the world, 800 million, is almost the same as the number of undernourished people in developing countries. There the similarity ends. One tank of ethanol for a Sports Utility Vehicle consumes corn that could feed a man for a year.

As with GM crops, it is possible that biofuel production could benefit developing countries but the US holds the purse-strings to a global biofuel economy. Pork-barrel politics will underpin the payment of subsidies to US corn farmers and impose tariffs on the more efficient sugar-based

ethanol such as that produced in Brazil. The suspicion remains that the US and other governments have espoused the virtues of biofuels as a knee-jerk reaction to the spiralling climate change crisis without full impact assessment. Many observers consider that such an explicit exchange of food for fuel will trigger a public backlash against the craze for biofuels. In China already a shortage of pork has prompted the government to block approval of new ethanol plants which are indirectly forcing up prices of animal feed.

## CAUSES OF FOOD INSECURITY

External pressures associated with climate change and biotechnology are acting on local structural shortcomings which already render developing countries prone to food insecurity. Foremost is the pattern of small farms (not dissimilar to the pattern in pre-industrial Europe) whose output is typically a mix of subsistence and surplus for market. There are 500 million farms of less than 2 hectares in the developing world, many of uncertain land tenure or title, and many dependent on the labour of women and marginalised groups whose low status weakens the agriculture lobby.

This profile of livelihoods rarely escapes poverty, lacks capital to invest, and is chronically vulnerable to fluctuating prices or unfavourable weather, especially drought – factors which all contribute to food insecurity. Africa has been further affected by the distortion of labour resources created by HIV/AIDS. The two countries currently prompting the highest state of food security alerts, Swaziland and Lesotho, have both experienced drought and high HIV prevalence.

Governments themselves have compounded weaknesses through prolonged lack of investment in rural economies

which account for about 75% of world hunger – African governments are yet to meet their 2003 Maputo Declaration commitment which called for 10% of national budgets to be dedicated to agriculture and rural economies by 2008. Those farmers that have been encouraged to switch to cash crops for export find themselves at the mercy of unpredictable world food prices, with competitiveness undermined by distorting subsidies for rich country farmers. The Doha round of world trade negotiations was supposed to open new markets for developing country agriculture but the protective governments of US and Europe have baulked at the compromises involved.

Whilst overall population growth creates pressure on food security, it is not an underlying cause. World production of food has outpaced population growth and is projected to reach record levels in 2008, more than sufficient to feed the 6.7 billion population if sufficient political will could be summoned. The human weakness for violent conflict does however invariably lead to extreme food insecurity – 9 of the 12 lowest ranking countries in the 2006 Global Hunger Index were conflict regions such as the Democratic Republic of Congo and Angola. Collapsed economies such as North Korea and Zimbabwe also generate food crises.

#### THE SEARCH FOR FOOD SECURITY SOLUTIONS

There are two longstanding and opposing philosophies for addressing the structural weaknesses that lead to food insecurity. The neo-liberal model advocates that small farms should be consolidated as has been the case in richer countries, with minimum state involvement and alternative livelihoods found for surplus labour. Farms can then afford to invest in higher technologies and compete in export markets.

Critics of this open market approach feel that it can succeed only in conditions of strong transport and storage infrastructure, of efficient local markets and high standards of governance – conditions which rarely exist in poorer countries. The alternative model of “food sovereignty” gives priority to local ownership of the full chain of resources. It accepts small farms for what they are and encourages their sustainability through pro-poor policies such as subsidies, tax breaks and protection against big business.

Neither model has yet absorbed the urgency of climate change. The open market approach fails to recognise the extreme sensitivity of tropical ecosystems and the pro-poor model may have to acknowledge the expediency of seeking help from the latest technologies in a potentially frightening environment.



Food aid alone is not a sustainable solution to hunger but compassion demands that action be taken in the most critical circumstances. The balance of food supply and demand throughout the world is monitored by the FAO's Global Information and Early Warning System. Where a situation is deemed serious, the World Food Programme (WFP) becomes involved and prepares an appeal to governments and other donors for aid – there have been 30 emergency appeals since 2000.

As the principal agency responsible for food aid, the WFP supports 100 million people and about the same number are assisted by international aid agencies. This leaves over 600 million dependent on highly variable or non-existent domestic safety net arrangements such as the Indian Public Distribution Scheme.

The US is the largest donor country but insists not only in donating surplus grain from US stocks rather than cash,

but also that the chain of delivery to the recipient country must be handled entirely by US contractors. The result is often months of delay for a service which is time critical. Agencies are pressing donors instead to purchase food direct from the beneficiary country – high prices typically being the deterrent to the poor rather than availability.

Donors also increasingly favour a twin-track approach of providing both cash and food to individuals – food as the emergency component to ensure nutrition and cash as the development component to transfer sustainability decisions to the household and ward

off a culture of dependency.

#### WORLD FOOD PRICES AND FOOD SECURITY

There is consensus in rich countries that retail food prices are about to increase sharply. The reasons given include rising demand from countries such as India and China whose new middle classes can afford a diet of greater meat content and the tightening of food production from the expansion of biofuels. Fluctuation of western supermarket prices would normally have little bearing on the battle for food security in developing countries. But there are ominous signs of knock-on effects; the WFP has announced that it will struggle to feed its target beneficiaries due to higher world prices and the disappearance of surpluses. A July 2007 leading article in the respected UK *Financial Times* concluded that «for those in poor countries, (the effects of higher food prices) are potentially devastating». □

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