
FACING UP TO THE SCANDAL OF WORLD HUNGER – HOW CAN WE ENSURE FOOD FOR ALL?¹

- **Olivier De Schutter**

In June 2009, it was announced that over one billion people in the world now suffer from hunger. Prices of agricultural commodities have gone down on the international markets since they peaked in the summer of 2008 and in the past, we have tended to use this indicator to measure the extent of the problem of hunger. It is now high time to move away from commodity exchange boards to the real lives of people. The first questions to ask are: Who are those one billion people? What are their lives like? And what is the composition of those groups who suffer various kinds of malnutrition?

This figure of one billion results from the steady annual increase in the numbers suffering from hunger. Remember that in 2004-2005 the figure was about 850 million, in January 2008 it had risen to 923 million and it has been going up ever since. To understand the situation of these people, it is important to make a distinction between the groups affected by hunger.

The make up of the one billion

The largest group comprises very poor peasants, small landholders who depend on 1-1.5 hectares of land for their livelihood. There are over 1.5 billion people living on small-scale family farms and about one third of them, 500 million, are hungry, unable to make a decent living from their tiny plot of land. They mostly depend on subsistence agriculture. They sell any surplus they have during the harvest period when prices are very low, at the price imposed on them by the local middlemen. It is not unusual for them after three or four months to have to buy the food they need at two or three times the price they received for their crops because they have no storage facilities and cannot market their produce to give them an adequate income. This one very important category represents about half of the one billion hungry people.

A second group comprises landless agricultural labourers who are employed on large plantations found in many developing countries. Altogether there are 450 million such labourers and about half, 200 million people, go hungry. They are too poor to afford the food that they help to produce. Their employment is often on a seasonal basis, usually without an employment contract or any legal or social protection. There is of course no compensation or safety net if they lose their job or fall sick.

The divisions between the first two groups described are sometimes blurred because many families in developing countries have small plots of land which they cultivate. Women do most of this work on the land while the men either migrate to the cities or work on the plantations.

And there is a third group comprising some 10-15% of this one billion hungry people who depend on artisanal fishing, raising livestock and the products of the forest. Many indigenous people fall into this category. They are also food producers, but they are neither landowners nor in waged agricultural employment.

And finally we have a fourth group which is growing in importance: the urban poor who migrate from the countryside in search of a better life. There are today in the developing world some 1.2 billion living in slums. In 2030 when the global population will reach c.8.3 billion according to current estimates, there will be 2 billion people in slums in large cities in the developing world.

Hunger is the challenge we are facing and I would like to put forward three theories about it.

Challenging hunger

1. Hunger is not a natural disaster, it does not have its source in the soils or the skies but in policies and decisions made by identifiable actors at precise moments in time. Moving along the chain of causes we can identify the sources of these policies and the accountability linked to decisions taken.
2. Although helping each of these groups – small farmers, agricultural workers, the urban poor – calls for specific policies, they face major obstacles in claiming their right to food. They are all victims of the same process of development which can be summarised as the submission of agriculture to increased demand and the competitiveness of the global market.
3. My third proposal is that we can choose to change the development process and refocus it if we want to.

To understand what hunger is about, its causality and where it comes from we can distinguish three periods over the past 60 years.

The first era of hunger: 1950s to early 1980s

State intervention

The *first* one began around the 1950s and ends around the early 1980s. During this period agriculture was mostly in state hands in many developing countries. There were state co-operatives, for example, marketing boards, and state support for producers. Unfortunately it was government policy to tax rural populations and agricultural producers to provide urban dwellers with low cost food they could afford and to finance import substitution policies that aimed at accelerating industrialisation. Many rural communities were ruined by these policies that oppressed rather than supported them. The state would only help those producers who sold cash crops on global markets so the state could export more and in the process build up its own industries. Thus state involvement in the agricultural sector often had a negative impact on the countryside, favouring instead urban populations on whom the government depended for its political survival.

Colonialism

The *second* characteristic of this period was that it derived from colonialism. Land ownership was concentrated in the hands of an elite and very few countries undertook successful agricultural reforms that led to more equal distribution of land. An aspect of this colonial heritage is that just as the colonies provided raw materials which were processed into manufactured goods, the international division of labour did not alter and many developing countries continued to provide industrialised countries with the raw materials our industries demanded. We then provided those industries with the technology, the machinery and the computer systems they needed to continue their expansion.

The green revolution

A *third* characteristic of this period up to the 1980s, was that governments believed they could not combat hunger without significantly raising agricultural yields across the board. The green revolution began in 1943 when the Mexican government invited an American scientist, Norman Borlaug, to advise on improving crop yields. As a result Mexico greatly increased maize yields through the use of improved varieties of maize, allowing the plant to grow faster and by promoting massive scale irrigation with extensive use of inputs, fertilisers and pesticides. This approach to agricultural development spread to Latin American in the 1950s and to south Asia in the 1960s, beginning with the Philippines and India. There new varieties of the semi-dwarf rice and wheat increasingly depended on pesticides, fertilisers and improved irrigation.

The green revolution had a tremendous impact on boosting food production. Food availability per capita increased very significantly in the regions that embraced it and for this reason Norman Borlaug received the Nobel Peace Prize in 1970. At the same time the green revolution had a number of negative social and environmental consequences which only very few at the time had the courage to confront. For example Rachel Carson in her 1962 book *The Silent Spring* denounced the environmental impacts of agri-industrial production. In many areas the green revolution has essentially led to more inequality, marginalising small farmers who had no access to credit and female-headed households, where women did not own the land they tilled and therefore could not borrow to participate in this highly capitalised kind of agriculture. Between 1970 and 1990 in Latin

America food availability per capita increased by 8% but the number of hungry people rose by the same percentage. In South Asia during the same period food availability increased by 8% while the number of hungry people increased by 17%. If we exclude certain parts of India, such as the Punjab, the figures would be even more stark.

The green revolution therefore had a very negative impact, in that it increased yields but failed to combat hunger and malnutrition.

The second era of hunger: 1980s

Structural adjustment

The second period we should consider is the early 1980s when a number of developing countries endured the infamous structural adjustment policies forced on them by international financial institutions. Fearful that these countries would be unable to access international credit if they did not greatly reduce their public expenditure and retreat from trying to manage their economy, the structural adjustment programmes imposed devaluation of local currencies to encourage exports. They featured the complete abolition of agricultural subsidies and often the removal of extension services providing advice to farmers. They also required lower import tariffs and the opening up of these countries to international trade, *inter alia* in agricultural commodities.

Globalisation

International trade in agricultural commodities has had a devastating impact on many farmers in the developing world. This globalisation did not begin in 1994-95 with the World Trade Organisation, whose remit included an agricultural agreement. It actually began in the 1980s when these policies were forced on developing countries and is based on the familiar idea that each country should specialise in a type of production where it has comparative advantage. There are therefore efficiency gains from the international division of labour between countries in that productivity increases, the pie we share is larger and hunger and poverty are reduced.

The problem is that for a number of reasons this vision inherited from David Ricardo in the early 19th century simply does not work for agriculture. First, when Ricardo was comparing England and

Portugal trading in wine and cloth he reduced this to the labour hours each country put into producing cloth and wine. Adopting a purely quantitative approach does not make any allowance for the qualitative dimensions of what is being produced. Working in the fields to produce agricultural commodities or raw materials is not the same as manufacturing computers, cars or tractors. The reason is that when you produce agricultural commodities you enter a domain with decreasing returns. To move from growing 5 to 6 tonnes of wheat on one hectare you need to put much more investment into the 6th tonne than into the first or second one. But when you make computers the 1,000th computer you produce costs much less than the first. So when countries are pressured to specialise in particular products, the international division of labour means that some countries specialise in losing and some in winning: some manage to achieve economies of scale, others do not. Thus in the 1960s Latin American economists - Paul Prebisch among them, the first Secretary General of the United Nations Conference on Trade and Development - recognised that trade terms systematically disfavoured countries which are not producing high-tech, high value products.

Another reason why this type of trade organisation is problematic is because it presupposes producers can adapt to market price signals and shift from one crop to another, depending on whether there is demand for the particular crop in which they specialise. The idea is that they would adapt to these market signals in order to increase their income. However it is very difficult for agricultural commodity producers to switch from one type of production to another. We should recall what happened, for example, when Mexico signed up to the North American Free Trade Agreement (NAFTA) in 1994. For generations Mexican farmers had cultivated various types of maize and were told that entry into NAFTA would put them in competition with corn producers from the United States Mid-West. These farmers were highly competitive and able to dump heavily subsidised corn onto Mexican markets. Mexican farmers were reassured that as they had a winter growing season they would always be able to produce fruit and vegetables. In addition, they were told horticulture is highly labour-intensive and with cheap labour in Mexico they would have a comparative advantage in that sector and would be able to penetrate the United States and Canadian markets.

The problem discovered a few years later was that the soil in the hilly parts of the country simply did not suit fruit and vegetables.

Irrigation systems were non-existent and many small farmers had no access to export markets. They were in fact unable to benefit from opportunities created by re-converting to fruit and vegetable production. The result is that between 1994 and 2004, 2 million farmers left the countryside for the capital and other large cities in Mexico. When such shifts occur there are some winners, those who manage to be competitive and to export, but many more losers. Few developing countries have a strong social policy or re-distributive programmes to protect the losers and ensure the gains made by the winners offer sufficient compensation.

A further reason why this type of trade has been detrimental is that it leads to an increased role in the global food system for a few large, extremely powerful agri-business corporations. These corporations dictate prices to the producers from whom they buy their crops, which they then sell on the global market and distribute through large retailers. For example, there are 25 million coffee producers in the world with 600 million consumers and a very small number of traders and coffee roasters who form the concentrated sectors of the business. The coffee trade chain has the shape of an hourglass. The result is that while in 1990 about 33 cents of each coffee dollar spent by the consumer went to producers at the beginning of the chain, in 2002 this had fallen to 10 cents. The decline indicates the extraordinary power of these corporations, something which competition law as it is currently conceived is powerless to address.

Finally it was discovered at the end of the 1990s that as a result of trade globalisation the populations of many poor countries had developed a strong liking for cheap food bought on the international markets. Their dependency on such foods became a very serious problem. The figures for many least developed countries for the years 1992 and 2005 indicate that over a period of 15 years their food bills multiplied by five or sixfold. These countries were pressured to specialise in cotton, coffee, tea and tobacco and to buy the food needed to feed their population. This is sustainable as long as the food is very cheap and prices are stable but when prices suddenly go up these countries experience balance of payment problems. Many least developed countries discovered this in 2007-08 when prices spiralled sharply in large part as a result of speculation on the futures markets of agricultural commodities. These countries suddenly discovered that they had become extraordinarily dependant on importing food which they assumed would always remain cheap and affordable.

The core problem with the trade globalisation programme as applied to agriculture in the 1980s was that it was largely premised on the idea that hunger is about increasing effectiveness, productivity and incentivising the most competitive producers to produce more, when in fact hunger is about inequality, poverty and social injustice. Far from alleviating hunger, trade globalisation in fact makes it worse.

Clearly many developing countries are in a very delicate position because they understand that the current trading system is extremely un-supportive and penalises them. For example, they face both tariff and non-tariff barriers preventing access to high value OECD (Organisation for Economic Co-operation and Development) markets and of course they are unable to compete with the high subsidies OECD countries pay their producers. These tariff structures make it difficult for developing countries to diversify and move into higher added value products. At the same time they realise there is much more to lose than to gain by promoting further trade globalisation as a solution to the problem of hunger.

Actual causes of hunger

A counter-offensive began in the 1980s. In his 1981 masterpiece, *Poverty and Famines: An Essay on Entitlement and Deprivation*, Amartya Sen alerted us for the first time to the fact that hunger is not the result of insufficient food being produced but of insufficient purchasing power among the poorest sectors of the population. It may result when the income of certain groups remains stagnant or declines while that of other groups goes up very rapidly. Amartya Sen's work pinpointed hunger as a problem of social injustice, inequality, accountability specifically of governments, rather than just a technical problem of insufficient production levels.

The third era of hunger: 1990s to early 2000s

How will the planet feed its people?

Moving to our third era which ran from the late 1990s to early 2000, a new challenge emerged which made the picture even more complex. This is the environmental challenge and for the

first time in almost a century the important question is whether the planet will be able to feed everyone on it. In the 1960s that was an issue for India and China to which the response was the green revolution. But it is now a global question as a result of a number of developments that are hugely important and make hunger a very complex question. Let me recall four facts which may be familiar.

First, very banal but hugely important is *population growth*. There are now 6.7-6.8 billion people on earth, there will be 8.3 billion by 2030 as mentioned already and by 2050 that figure may reach 9.3 billion which will probably be some sort of ceiling. Some demographers predict that later in the century the figure may rise to 10.3-10.4 billion people. Every year there are an additional 75 million people to be fed, already a significant challenge: in a number of poor countries the population doubles every generation. In addition population growth is accompanied by a shift in diets which will require producing even more food because as populations become richer and climb the income ladder their diet becomes more diversified and richer in animal proteins, milk, eggs and meat. This will require a lot more cereals to feed cattle and poultry on which the population increasingly depends. This is a very important factor: the growth in global population and the realisation that the earth may be reaching its limits in terms of the food it can provide.

A second factor is *climate change*, the subject of a Trócaire campaign a couple of years ago. Climate change is already having a huge impact on the ability of the planet to feed itself and will continue to do so. I was in Nicaragua and Guatemala recently during the drought caused by El Niño. Small farmers there told me the rains have become completely unpredictable, the rainy season is shorter, the dry season is longer and the result is that harvests in Guatemala have been almost completely lost. In India this summer, crop yields declined by 25% as a result of an unprecedented drought while in many areas of east Africa there are hunger black spots as a result of long droughts and unpredictable rains, making it very difficult to plan production.

That is the present situation. Within a few years things will get much worse. The inter-governmental panel of experts on climate change predict that by 2020 in regions of Africa which depend on rain for agriculture, yields will decrease by 50% and these regions are already food insecure. All experts agree that by 2080 average productivity in the world will decline by at least 7-8%, just from temperature changes; some say the decline could be as much as 16 or 17%. If this prediction gap is surprising, I should

perhaps explain that the difference among experts arises from the fact that they do not agree on carbon fertilisation effects which increased concentration of carbon dioxide in the atmosphere may have. More carbon dioxide in the atmosphere may accelerate plant growth and therefore increase the fertility of land but experts disagree about this. They do agree that the overall result of climate change will be extremely negative and that, at the same time, in 2080 global population will have increased by at least 33-35%. This gives an idea of the immensity of the challenge facing us.

The third factor is the *decline in the growth of agricultural productivity*: in other words the technological advances we have made to increase yields per hectare are reaching their limits. In the EU, the United States and Canada, we have probably already reached the maximum we can ever achieve. Soils are more and more exhausted, pesticides and fertilisers less effective and are indeed more tightly regulated (and rightly so). Yields that until recently were increasing at a steady rate will soon be stagnant.

The fourth factor is that *we are rapidly exhausting the resources of the planet*. About 45% of the land that is cultivated today is relatively steep. Of that 45%, 9% has very steep slopes of about 30 degrees. This land is subject to erosion and the global spread of mono-cultures has exposed it to erosion from water and wind because the soil is not protected sufficiently as it would be from the diversity of crops grown in poly-cultures. Every year we lose land which is already being impoverished as organic matter, nitrogen, phosphates and potassium, are slowly depleted by the use of chemical fertilisers in unsustainable farming methods.

Agriculture has become a mining activity through the rise of industrial agriculture. We are exhausting our phosphate reserves, the main component of fertilisers, and in many regions of the world overusing fresh water for agriculture. Some 70% of fresh water in the world goes to agriculture and in many areas we are using more water than we are able to replace. In China and in India there are wells that are 250-300 metres deep and farmers need electric pumps to draw the water, in the process depleting fossil aquifers. These water sources are not sustainable and can only be renewed in millennia. The paradox is that to make up for this, to ensure that we respond to the increasing demand for agricultural commodities, we have actually been developing policies that only worsen the problem. For example we are destroying forests at a rapid scale, ignoring the fact that forests represent some 45% of the storage of carbon on the planet. Agriculture is in fact one of the major causes of climate change,

contributing to no less than 33% of human greenhouse gas emissions, 14% from unsustainable agriculture and 19% from shifts in land use such as deforestation.

In addition to intensive agriculture we are extremely reliant on fossil fuels, gas and petrol. We need gas to produce chemical fertilisers and we need large amounts of petrol to transport food from where it is produced to where it is consumed and of course to work in the fields.

In 1940 in the United States it was estimated that producing 2.3 calories of food needed 1 calorie of fossil fuel. Today we need 10 calories of fossil fuel to produce 1 calorie of food, so it is twenty times less efficient than it was some 70 years ago. The food chain really begins in the oil fields of the Middle East and we should not fool ourselves with talk of food security and sufficiency while we are highly dependent on fossil fuels in order to maintain the existing system. The first difficulty we must face is how to manage this challenge – producing more without contributing further to destroying the environment on which ultimately we and our children depend.

Producing more food and raising incomes

There is a second challenge, also the result of policies adopted: How can we produce more food in a way that raises the incomes of the poorest populations, particularly those who depend on agriculture for their livelihood? Over the last thirty years we have seen the development of large-scale plantations which are extremely competitive, highly mechanised, use external inputs and are able to produce low cost food. The problem is that the price of food does not take account of the social and environmental costs of this kind of production. At the same time we have seen the marginalisation of small-scale family agriculture as a result of this unfair competition. These farmers have been either relegated to subsistence farming, been forced to sell off their land and migrate to the cities or have become agricultural workers on large plantations. This division in the farming system and the resultant inequalities in rural areas have their source in policies that created a very risky and expensive confusion between ways to measure agricultural effectiveness and efficiency. As mentioned a large-scale, highly mechanised plantation can produce relatively low cost food to be sold at low prices on the market because it is not labour intensive and uses machines instead of labourers. By contrast small-scale family agriculture is extremely labour intensive, creates employment and has many

positive social and environmental impacts. In many cases it helps preserve soils and reduces dependency on external inputs whose production will soon be unsustainable.

Proposed solutions

In the face of these challenges what solutions are there? To identify possible solutions we need to focus on the three key ideas outlined concerning production:

- a) we need to produce more food;
- b) we need to do so in a sustainable way which protects the environment;
- c) and we need to do so in ways that raise the incomes of the poorest within the food system.

We can achieve this by combining a focus on small-scale farming agriculture and expanding agro-ecological production methods. There is not enough space here to describe agri-ecological production but I would like to emphasise the benefits of focusing on it and small-scale family agriculture. Let me give three illustrations of this.

1. Agro-ecological modes of production use fewer chemical fertilisers and pesticides. Instead of commercial brands they use local varieties of seed which have been improved by professional breeders and are very often not protected by intellectual property rights. Agri-ecological production relies on locally generated inputs. Instead of using chemical fertilisers small farmers may use organic fertilisers, manure and compost, raising trees and plants that help retain nitrogen in the soil; instead of pesticides they may rely on biological control methods, integrated pest management or “push-pull” techniques that have proven effectiveness. This kind of agriculture is more accessible and affordable for poor, cash-strapped farmers who have no capital and no access to credit. They are unwilling to risk falling into debt as a result of a bad harvest and then being forced to sell off their land and migrate to the cities
2. Secondly, agro-ecological modes of production are very intensive. For them to work there must be a link between the producer and the land because they require the use of different kinds of plants, combining animals with plants

whereby the animals fertilise the soil and maintain it by grazing. It is this working together which creates agri-ecology on the farm. The fact that it is labour intensive is an advantage not a disadvantage. It becomes a disadvantage if the goal is to have highly competitive producers but it is an advantage if the target is to slow down the rural flight to the cities, to create employment in rural areas, raise incomes and to contribute to rural development.

3. Thirdly, agro-ecology is not a return to the past, it is based on the 21st century, combining best economy with best ecology, something that people have to learn and need to be taught. It is an approach that must be picked up by farmers, field schools, extension services and by the creation of agricultural co-operatives where farmers learn how to till the land, how to raise different kinds of crops at the same time and ways to reduce their dependence on external inputs. Small producer co-operatives can contribute to this spread of knowledge and empower farmers' communities helping them negotiate better prices for their crops on the market. Co-operatives empower local communities, helping them overcome problems within rural areas collectively and are a vital part of agri-ecology.

Conclusion

I believe that combining a focus on small-scale farming with this type of sustainable agriculture will allow us to meet the three challenges in ways that will help to preserve the planet and increase incomes in rural areas. Even if here in Europe it may be too late, it does presuppose that in developing countries farmers move away from agri-industrial production and that we do not impose on developing countries the types of production that we have embraced and that above all we re-think the link between the food we produce, how we produce it and the impact on our environment.

Endnote

- ¹ This paper is based on the annual St Patrick's College/Trócaire Lent Lecture which Prof. De Schutter delivered in March 2010.