Professor of Food Policy at City University in London, Timothy Lang is a leading authority on food. He has written extensively on issues such as food security, food inequalities, nutrition and the tension between food democracy and food control. The steep rise in the price of basic food commodities on the world market this year came as no surprise to him, for he has been warning for some time that the world is "sleepwalking into a crisis".

Tim Lang

So, Professor Lang, is the crisis you predicted finally upon us?

Well, there is quite a lively debate about that. Some analysts say that the world is currently only experiencing a "blip" and that the rise in prices is temporary. Once the crisis has passed, the long term decline in commodity prices will continue. Indeed, history seems to be on the side of "blip" theorists. If you look at US wheat prices from 1860 to 2000, there were occasional "blips", when prices rose sharply in response to a short-term crisis of one kind or another (during the First and Second World Wars, and in the early 1970s). But once those crises were over, prices resumed their long-term decline. "Blip" theorists say that this is what will happen now.

So are you a "blip" theorist?

No. Despite the historic trends, I think we are entering a new era. Even if food commodity prices decline somewhat over the next couple of years, which may happen if supply recovers, I think we are entering new policy territory which requires new thinking, policy frameworks and probably institutional responses. I am one who supports the theory which we call the "new fundamentals". Let me explain. Only superficially is the current situation reminiscent of the 1970s, when famines in Sudan and Bangladesh, plus oil price rises and early environmental warnings, created fears that the world wouldn't be able to feed itself. At that time, the "Green Revolution" with hybrid techniques of plant breeding was already emerging to rescue the production-focused approach. Major commodities – wheat, rice, potatoes – were transformed by plant genetics, funded by such sources as the Rockefeller Foundation and oil money. With that experience, blip theorists argue that Genetic Modification will do today what the green revolution did decades ago. I doubt it. I think the extent and depth of what has to be addressed today cannot be saved by technical fixes such as GM.

What are these features that are under threat?

Let me list them – there are eight:

- **Energy**. Oil has hit US$126 a barrel. Some 95 per cent of food products are oil-dependent, and gains in agricultural productivity rely on fertilisers and mechanisation. The first rush to biofuels as a substitute for oil is now looking thin. If land goes to biofuels, that's less land for food. The OECD calculated that the USA, Canada and the European Union would need to switch between 30 per cent and 70 per cent of their current crops to biofuels to provide just 10 per cent of their transport fuel needs. That simply isn't possible.

- **World food commodity prices**. They are rocketing and this is not just due to speculation, though that doesn't help. Buffer stocks are at their lowest level for decades. Per capita availability has faltered since the 1980s. The UN Food and Agriculture Organisation estimates that imported foodstuffs exceeded US$ 400 billion in 2007, 5 per cent above the 2006 record. Most of this increase is due to rising prices of imported coarse grains and vegetable oils – the commodity groups which feature most heavily in biofuel production. FAO forecasts these to rise by 13 per cent in 2008, difficult for rich country importers but dire for developing countries.

- **World population**. It is rising rapidly, reaching 6.6 billion in 2007. It is expected to reach 9.1

billion by 2050. Urbanisation appears unstoppable: in 1961 one billion people lived in towns; by 1986 it was two billion; by 2003 three billion; and by 2018 it is projected to be four billion and by 2030 five billion. The Reverend Thomas Malthus – who warned way back in 1798 that, while populations can grow geometrically, food supply can only increase arithmetically – might have been wrong in the past, but today the scale of the population's growth and its food requirements are unprecedented. I am not a neo-Malthusian, but the sheer number of mouths we have to feed requires drastic action – whether by changing diets (which the West ought to do) or by farming differently remains to be seen.

- **Labour**. This problem is linked to the previous one: if urbanisation is inexorable, who will be the rural labour force? The inexorable drift from the land is understandable. Often the life is hard, the rewards are thin, and the insecurity is unacceptable. Public policy centres on the big farmers as the route to produce the massive surpluses needed, yet the reality is that most farmers are smallholders. It's they who need a New Deal. They have to be part of the solution. If oil is no longer able to substitute for labour – which is what mechanisation meant – does this mean in an oil-depleted world that we will have to go back to centring on human labour on the land? With what skills? What rewards?

- **Land**. Available productive land depends on sea levels, drainage and investment. Optimists propose that the world could bring into use about 12 per cent more land than is currently under cultivation. This might well be so, but marginal lands tend to be less productive and more expensive to use. Climate change will alter land use patterns considerably. Meanwhile rich developed countries like the UK treat land too cavalierly. A recent UK study showed that consumers use food as though they have six times as much land and sea available to them as they in fact do. Our "efficient" food system is actually using other people's land. It's our wealth which allows that, in a kind of market-based neo-colonialism. To add insult to injury, we now know that, after 60 years of scientific farming and technological advance, UK consumers still waste about a quarter of all food produced. Seen historically, this means one "old" form of waste (spoilage on farm and in store) has been replaced by another (waste in homes, ending up in landfill).

- **Water**. Globally, of all drinkable fresh water, households use 10 per cent, industry 20 per cent and agriculture 70 per cent. Today 92 per cent of humanity has a relative sufficiency of drinkable water, but by 2025 this will be 62 per cent. The notion of how much water it takes to produce an item is likely to become as important as the amount of greenhouse gas emissions it causes. To produce one kilo of grain-fed beef requires 15 cubic metres of water. One kilo of cereals needs between 0.4 and 3 cubic metres. Many of us, alarmed about the importance of water, have been pushing for the auditing of food supply chains for their "embedded water". Labelling foods for their water might help, but the key thing is to reduce profligate water use, since all forecasts see big water crises ahead. The UK is water-rich, but if we are importing others' water, where is the social justice? A 250 ml glass of beer uses 75 litres of water; a glass of apple juice takes 190; a 150-gram hamburger takes 2,400. Without knowing it, food trade transfers water across borders. As Fred Pearce showed in his excellent book on this,* the equivalent of 20 Nile rivers already move annually from developing to developed countries.

- **Climate change**. This threat is already high on the agenda. The Stern Report on Climate Change found agriculture responsible for 14 per cent of greenhouse gas emissions. Of agriculture's emissions, fertilisers were responsible for 38 per cent. Livestock was the second greatest source of agriculture-related emissions, accounting for 31 per cent. Stern has recently gone on record as saying that he thinks he underestimated the costs of not acting to prevent climate change. Altering food systems therefore has to be at the front of any action list. Carrying on as "normal" is not an option, unless we want to make the crisis hit harder later.

- **Nutrition transition**. This is the phrase used to describe what happens when people become more affluent, the process now happening in many developing countries. The cost to healthcare becomes a fiscal drag. Consumers change their diets, eating more sugars, soft drinks, meat and dairy. This, in turn, is associated with a shift in disease patterns. The WHO is alarmed about the evidence of a rise in diet-related ill-health from chronic diseases such as heart disease, cancer, diabetes and obesity. This has arisen while we still have a very serious problem of malnutrition in many developing countries.

While, each of these eight fundamentals on its own poses a serious challenge to world food capacity, the truth is that they are linked and collectively pose immense policy challenges. This realisation is dawning on policy analysts (but not yet on politicians who are locked into old ways

A Farida Akhtar
B Benny Haerlin
C Carlos Correa
D David Quist
E Johnson Ekpere
F Francisca Rodriguez
G German Velez
H Hope Shand
I Ibrahim Ouedraogo
J Jack Kloppenburg

of thinking such as "leave it to market forces" or "leave it to retailers" or "aid and some more market access will free things up"). The new challenges are our generation's test: will we reshape or fudge how humanity feeds itself? It's our post-Malthusian moment. Should humans stop treating the planet as a limitless resource? Definitely yes. Can we do this and go on consuming more? That depends on whether or not we can develop a way of consuming which treads more lightly on the earth; so the answer is: "it is not clear yet". The solutions all depend on whether we want more of the same diet and lifestyle or are prepared to change.

Is the world still sleepwalking into a crisis or has it woken up?

I'm afraid that I still feel the sleepwalking metaphor is right. Sure, there's much talk at present but it's quite superficial actually. There is a generalised assumption that the problems are affecting only the developing world. The debate is almost being framed at the moment as if it's begging-bowl time. But I don't see the issue being primarily about suffering in Malawi or riots in Mexico. What I and my colleagues here think is that the problems that are manifest in the developing world are largely the result of decisions taken in the developed world. I think much more attention needs to be given to what policy-makers in the rich countries, the over-consuming countries, are doing in response to the food crisis. We need to see them responding to the eight fundamentals that I outlined above. It means beginning to acknowledge the elephant in the policy room: we are driving the problem. At the moment, the discourse implies that outside forces are destabilising western markets. They'd be alright if only matters could return to "normal". Actually, "normality" is not acceptable.

So what should policy-makers do?

They face a fundamental choice. One way forward is to carry on intensifying the food system, as per the model of the last 70 years. Carry on with the system that people like me call "productionism", where the goal is to produce more and more food, making it more affordable. This made sense in the 1940s but not today. Yet productionism – the search for a technical fix – is the dominant position, the "normality" yearned for. Low oil and food prices meant more domestic spending on the consumer nirvana. But just as the architects of productionism persuaded policy-makers of the time that science and investment could raise output and resolve the crisis of underconsumption, so today we need to work on policy-makers to realise that we have co-existence of under-, over- and mal-consumption. Food's environmental footprint means we have go back to the drawing board and start thinking about what a sustainable food system would look like. We've got to design it around what the earth can deliver and what human bodies need. That's difficult. We haven't yet reached agreement about what a "sustainable diet" is – one that is good for the earth and good for physiological health. But the broad outlines are becoming clearer.

The two perspectives give you very different impression of the global food system. From a "productionist" point of view it is remarkably successful. The shops are full. There are 26,000 items on supermarket shelves in developed countries. But from a sustainable development perspective, the food system appears to be taking us toward planetary collapse. We have policy schizophrenia: belief on the one hand that it's a total success and on the other a total failure. In a way, both perspectives are right: output has risen but at a terrible cost.

So where do we go from here?

We've got to develop a new set of guidelines, a world of "omni standards" that take the new fundamentals into account. "Omni standards" is a terrible phrase and I apologise for it, but it encapsulates what I mean. We've got to have new criteria that take into account all the new concerns – sustainability, water shortage, climate change, obesity, malnutrition and so on. It means thinking through things like: What about the end of oil? What are criteria for optimum land use? In an urbanised world, how can farming systems be responsive? What is a healthy and sustainable food system?

It seems that change is inevitable, whether we like it or not. Do you think we can manage this change or will it come through violent disruptions?

I used to think, until about five years ago, that an orderly transition was possible. I now wonder if we've missed the moment. I hope not. But events are now determining the room for manoeuvre. It's more likely now that shock will change things. As a rationalist, I want that least. Shocks are messy with dire consequences. But certainly, it looks likely that we might be sleep-walking into a world in which blood flows, metaphorically and at times actually, due to mistakes over food policy. All of us need to raise our voices and our game to prevent those mistakes going unnoticed. Ultimately we have to side with food democracy over food control.

* Fred Pearce, *When the Rivers Run Dry*, Eden Project Books, 368 pp., ISBN 978-1903919583